

GEOCHEMICAL REPORT
ON THE
FAIR AND JOE CLAIMS
WHITEHORSE MINING DISTRICT
YUKON TERRITORY

018 982

PREPARED FOR
NEW FAR NORTH EXPLORATIONS LIMITED
AND
CONSOLIDATED BELLEKENO MINES LIMITED

PREPARED BY
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REXDALE, ONTARIO, CANADA

SEPTEMBER - 1967

INTRODUCTION

Lead-zinc mineral deposits in the general area are known to occur in sericite schist near the contact with granitic intrusions of Cretaceous age.

Gold has been found in quartz veins with associated copper- and or nickel-bearing sulphides in the gabbroic rocks of the area.

The primary objectives of the metal geochemical soil sampling programme were to assess:

- 1) the gold potential of the area under investigation using copper and nickel as the indicator metals
- 2) the lead-zinc potential of the area and define the general location of any lead-zinc mineral occurrences

GENERAL

Interpretation of the geochemical data is necessarily restricted to some extent because arrangements were not made for the undersigned to visit the property. Discussions with Mr. Ross D. Lawrence of Watts, Griffis and McQuat Limited and Mr. John R. Needham of J. R. Needham and Associated, however, have permitted a fuller interpretation of the geochemical data in relation to geology and mineralization.

Analyses of the soil samples were undertaken in the Toronto geochemical laboratory of Barringer Research Limited.

GEOCHEMICAL RESULTS

Geochemical maps showing the location of the sample sites, analytical results for Cu, Ni, Pb and Zn and the resulting isochemical contours accompany this report.

The following concentration groups for Cu, Pb and Zn have been selected after careful inspection of the data combined with statistical evaluation.

METAL	BACKGROUND RANGE	THRESHOLD RANGE	ANOMALOUS RANGE
Cu	0-36	37-50	+50
Pb	0-48	49-64	+64
Zn	0-57	58-70	+70

Nickel shows a wide range in values in certain parts of the property because of the wide range in rock types from quartzitic schists to ultrabasic rocks. Contours for Ni at 50 ppm and 100 ppm have been selected as these groupings permit a good assessment of the general distribution of nickel and its significance with respect to geology and possible nickel sulphide mineralization.

DISCUSSION OF GEOCHEMICAL DATA

Nickel

Nickel shows higher values in the soils overlying basic and ultrabasic rocks compared to its content in soils overlying limestone and sericite schists. As a result, the nickel distribution is essentially geological and individual formations can be traced across the property. The nickel anomalies which may be of interest in terms of mineralization are not associated with the more basic rocks of the area and are as follows:

Ni-Cu (1) Fair group - host rock Sericite schist

Ni-Cu (2) Fair group - host rock Andesite

Ni-Cu (3) Fair group - host rock Quartz diorite

These nickel anomalies, however, may reflect more basic phases within these relatively acid rocks. A more detailed geological assessment is recommended in order to determine the significance of these nickel anomalies.

Copper

In the Joe Claim group, anomalous copper is relatively widespread in the east and does not define the geological formations in the same way as nickel or zinc (see below). Copper parallels the nickel distribution, however, to a large extent. This is noted particularly in the Fair group except along the southern section of this claim group.

The more general distribution of anomalous copper values compared to Nickel at least in Joe group suggest that copper is not particularly associated with the

basic rocks but may also occur in the schists. However, the higher values in the sericite schist may indicate the occurrence of copper sulphides.

The copper anomalies which are worthy of a more detailed geological assessment are as follows:

- Ni-Cu (1) Fair group - See Ni anomalies above
- Ni-Cu (2) Fair group - See Ni anomalies above
- Ni-Cu (3) Fair group - host rock Quartz diorite

The Ni-Cu 3 is interesting from the proximity to the granite contact. Again a more detailed geological assessment of the outcrop and float in this area will define more precisely the significance of this anomaly.

Lead and Zinc

Lead is only anomalous in one area near the eastern edge of the Joe group and referred to as Pb-Zn 1. This lead anomaly is most significant in view of the known occurrence of galena in sericite schist just outside the property boundary. This lead anomaly is associated with anomalous zinc values. These anomalous Pb-Zn values occur near or within the sericite schist formation and hence are a top priority for more detailed investigations.

Zinc is somewhat erratic but in the Joe group, in general terms, zinc values appear to be relatively low in certain phases of the basic rocks compared to its content in the sericite schist. In the Fair group zinc is generally within background range throughout and, in view of the fact that the Fair group is underlain by a similar sequence of rock formations to that in the Joe group, the

relatively high zinc values in the latter claim group become more significant in terms of zinc mineralization.

The area of sericite schist at the eastern side of Joe group is recommended on both the geological and geochemical findings as the top priority for more detailed investigations.

One general feature which is worthy of note is the sharp change in Cu and Zn values particularly, but also Ni, near the middle of Joe group. This sharp change has a northerly trend. Values for Cu, Zn and Ni show little variation in the western section of the group compared to the eastern section. As discussed above the geochemical data permits some geological interpretation. The lack of definition of geology in the western section suggests that either:

- 1) the sharp change in metal values near the middle of the group defines a fault and the rock underlying the western section of the claim group is very uniform in character or
- 2) there is a change in soil type in which the material sampled may be essentially transported or from a horizon which is not providing the true residual indication of the underlying geology.

CONCLUSIONS AND RECOMMENDATIONS

The lead-zinc distribution has outlined an anomalous area, Pb-Zn 1, within the sericite schist belt in the Joe claim group. This anomalous area is considered to be most favourable in terms of possible lead-zinc sulphide mineralization.

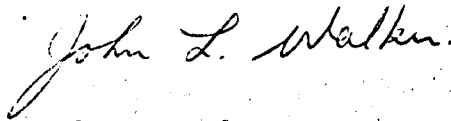
Anomalous copper-nickel areas, Cu-Ni 1, 2, 3, possibly reflect geological changes rather than zones of copper-nickel mineralization. Nevertheless these anomalies require a more detailed geological examination in order to determine their true significance.

It is recommended that Pb-Zn anomaly 1 should be investigated in more detail by geochemical as well as the proposed geological (R. Lawrence) and geophysical (J.R. Needham) methods.

In the geochemical approach it is recommended that soil profile samples should be collected in order to outline more precisely the source area of the lead and zinc. As the soil profile in this immediate area has not been established a preliminary examination of the distribution of lead and zinc in the soil profile should be undertaken. It is recommended, therefore, that 'B' and 'C' soil horizon samples should be collected along the two most easterly lines in the Joe group between 500N and 2500N at 100 feet sample intervals. Analysis can be undertaken on these samples while the more detailed geological and geophysical investigations are being undertaken in the area. The results of

the additional geochemical data will determine the extent to which 'C' soil horizon sampling should be undertaken.

BARRINGER RESEARCH LIMITED



John L. Walker
Consulting Geochemist

JLW:np

Sept. 15/67



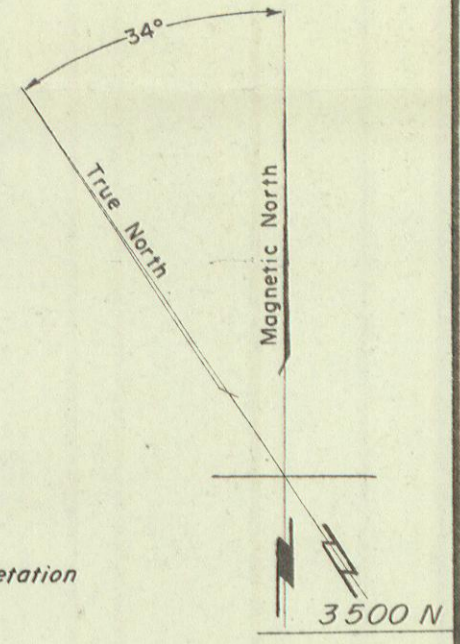
Line 60 W
 Line 56 W
 Line 52 W
 Line 48 W
 Line 44 W
 Line 40 W
 Line 36 W
 Line 32 W
 Line 28 W
 Line 24 W
 Line 20 W
 Line 16 W
 Line 12 W
 Line 8 W
 Line 4 W
 Line 0+00
 Line 4 E
 Line 8 E
 Line 12 E
 Line 16 E
 Line 20 E
 Line 24 E
 Line 28 E
 Line 32 E
 Line 36 E
 Line 40 E
 Line 44 E
 Line 48 E
 Line 52 E
 Line 56 E
 Line 60 E
 Line 64 E
 Line 68 E
 Line 72 E
 Line 76 E

4500 N
 4000 N
 3500 N
 3000 N
 2500 N
 2000 N
 1500 N
 1000 N
 500 N
 Base Line
 500 S
 1000 S
 1500 S
 2000 S
 2500 S
 3000 S
 3500 S
 4000 S
 4500 S

LEGEND
 0-50
 50-100
 100+
 N- IN PARTS PER MILLION
 NOTE: Geochemical analyses and interpretation by Barringer Research Limited.

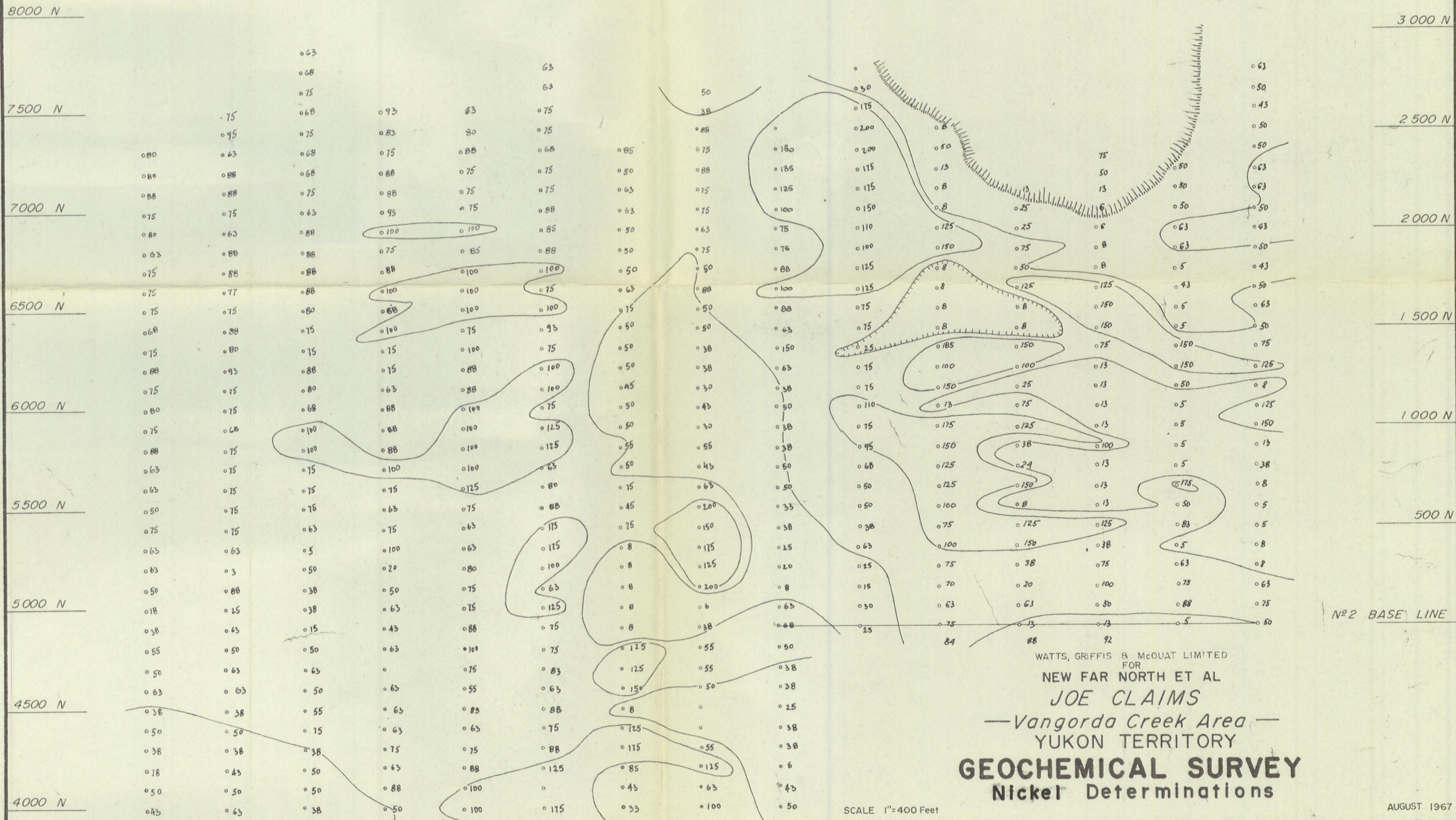
WATTS, GRIFFIS & McQUAT LIMITED
 FOR
 NEW FAR NORTH ET AL
 FAIR CLAIMS
 -Vangorda Creek Area-
 YUKON TERRITORY
 GEOCHEMICAL SURVEY
 Nickel Determinations
 SCALE: 1" = 400 Feet
 AUGUST 1967

Line 44E
Line 48E
Line 52E
Line 56E
Line 60E
Line 64E
Line 68E
Line 72E
Line 76E
Line 80E
Line 84E
Line 88E
Line 92E
Line 96E
Line 100E



LEGEND
 [White box] 0-50
 [Light gray box] 50-100
 [Dark gray box] 100+

Ni- IN PARTS PER MILLION
 NOTE: Geochemical analyses and interpretation
 by Barringer Research Limited.

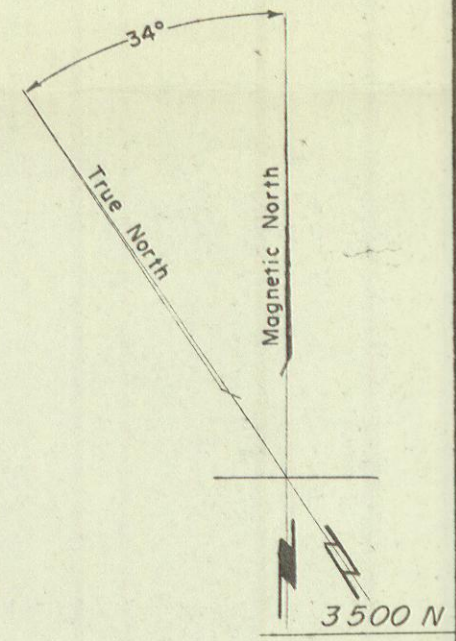


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GEOCHEMICAL SURVEY
 Nickel Determinations

SCALE 1" = 400 Feet

AUGUST 1967

Line 44 E Line 48 E Line 52 E Line 56 E Line 60 E Line 64 E Line 68 E Line 72 E Line 76 E Line 80 E Line 84 E Line 88 E Line 92 E Line 96 E Line 100 E

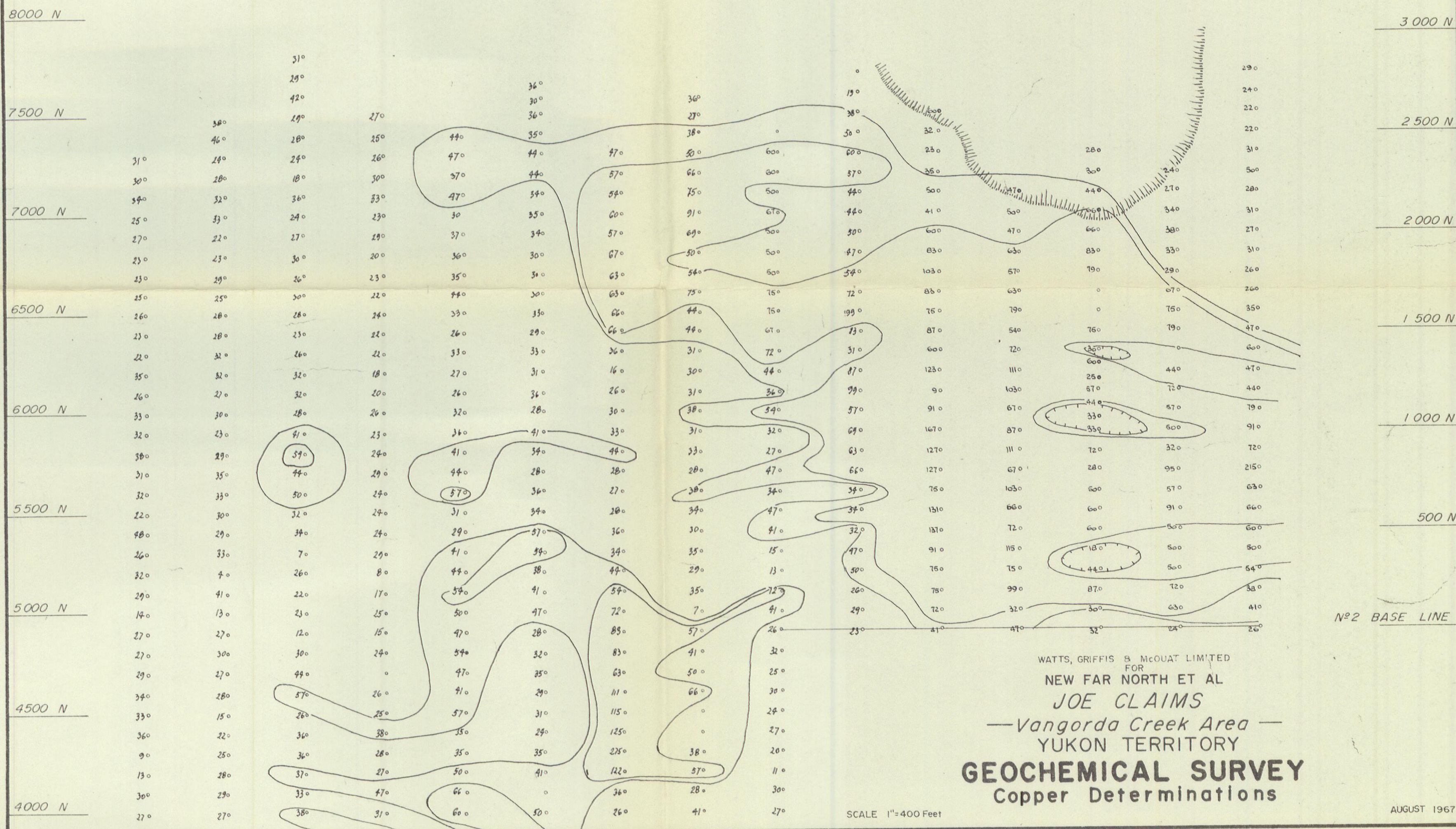


LEGEND

- 0-36
- 37-50
- + 50

Cu. IN PARTS PER MILLION

NOTE: Geochemical analyses and interpretation by Barringer Research Limited.



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 YUKON TERRITORY
GEOCHEMICAL SURVEY
 Copper Determinations

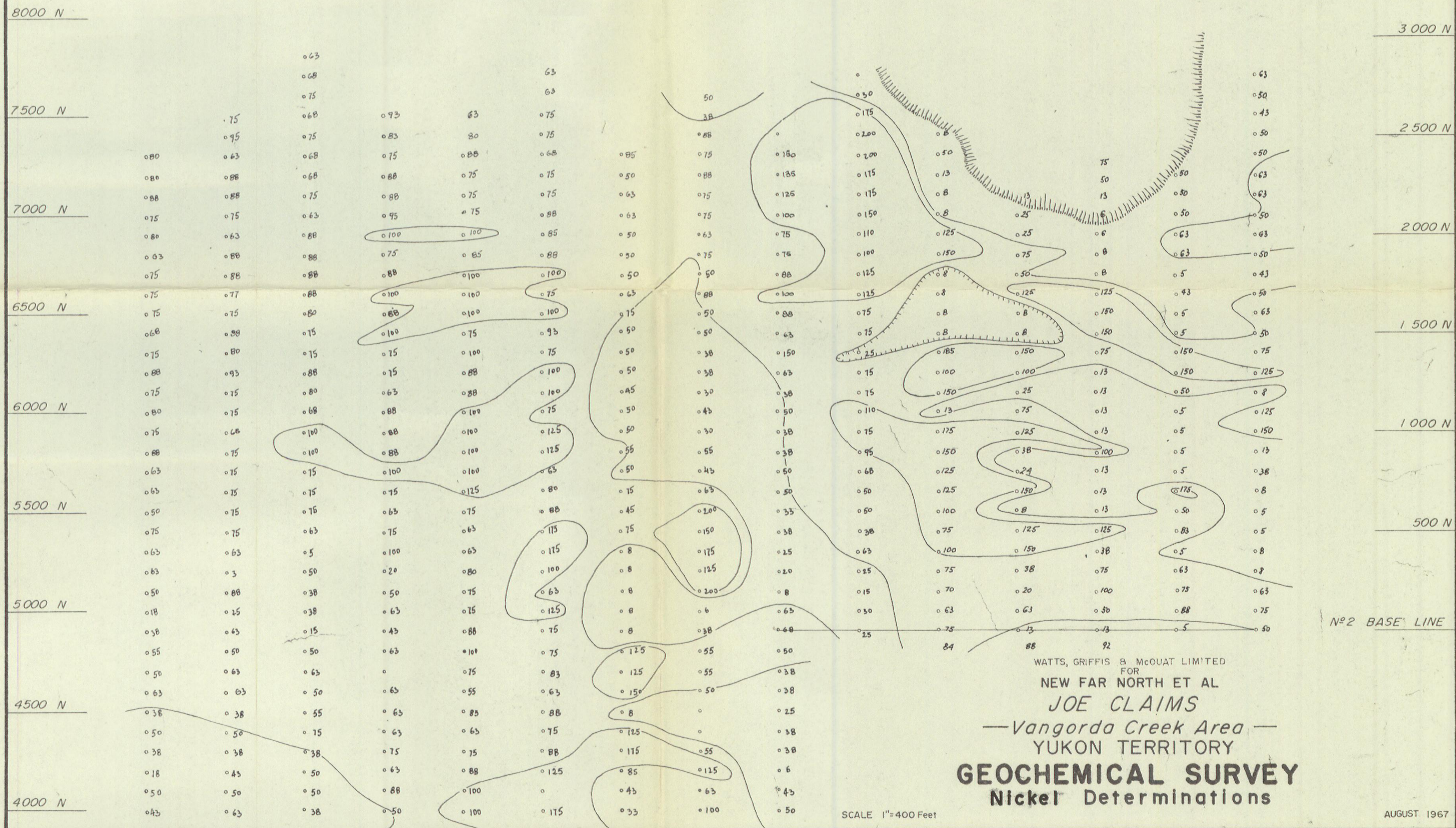
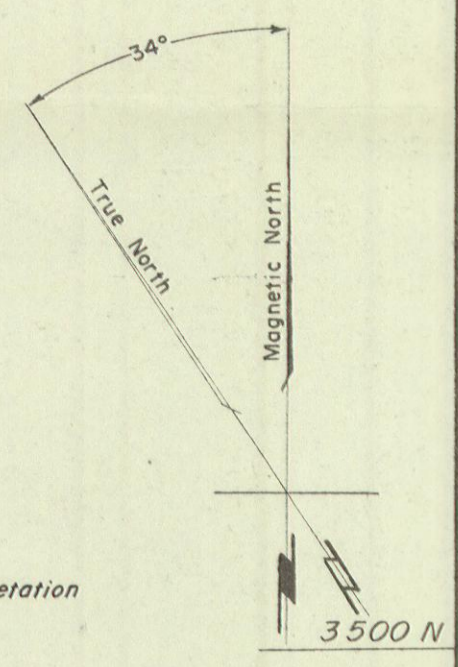
SCALE 1"=400 Feet

AUGUST 1967

Line 44 E Line 48 E Line 52 E Line 56 E Line 60 E Line 64 E Line 68 E Line 72 E Line 76 E Line 80 E Line 84 E Line 88 E Line 92 E Line 96 E Line 100 E

LEGEND
 0-50
 50-100
 100+

Ni- IN PARTS PER MILLION
 NOTE: Geochemical analyses and interpretation
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