



**LEGEND**

Concentration of heavy metal, 10 or greater  
in stream sediments ..... 10+; in spring sediments ..... 10+

Concentration of heavy metal, 5 to 9 ppm  
in stream sediments ..... 5-9; in spring sediments ..... 5-9

Concentration of heavy metal, 0 to 4 ppm  
in stream sediments ..... 0-4; in spring sediments ..... 0-4

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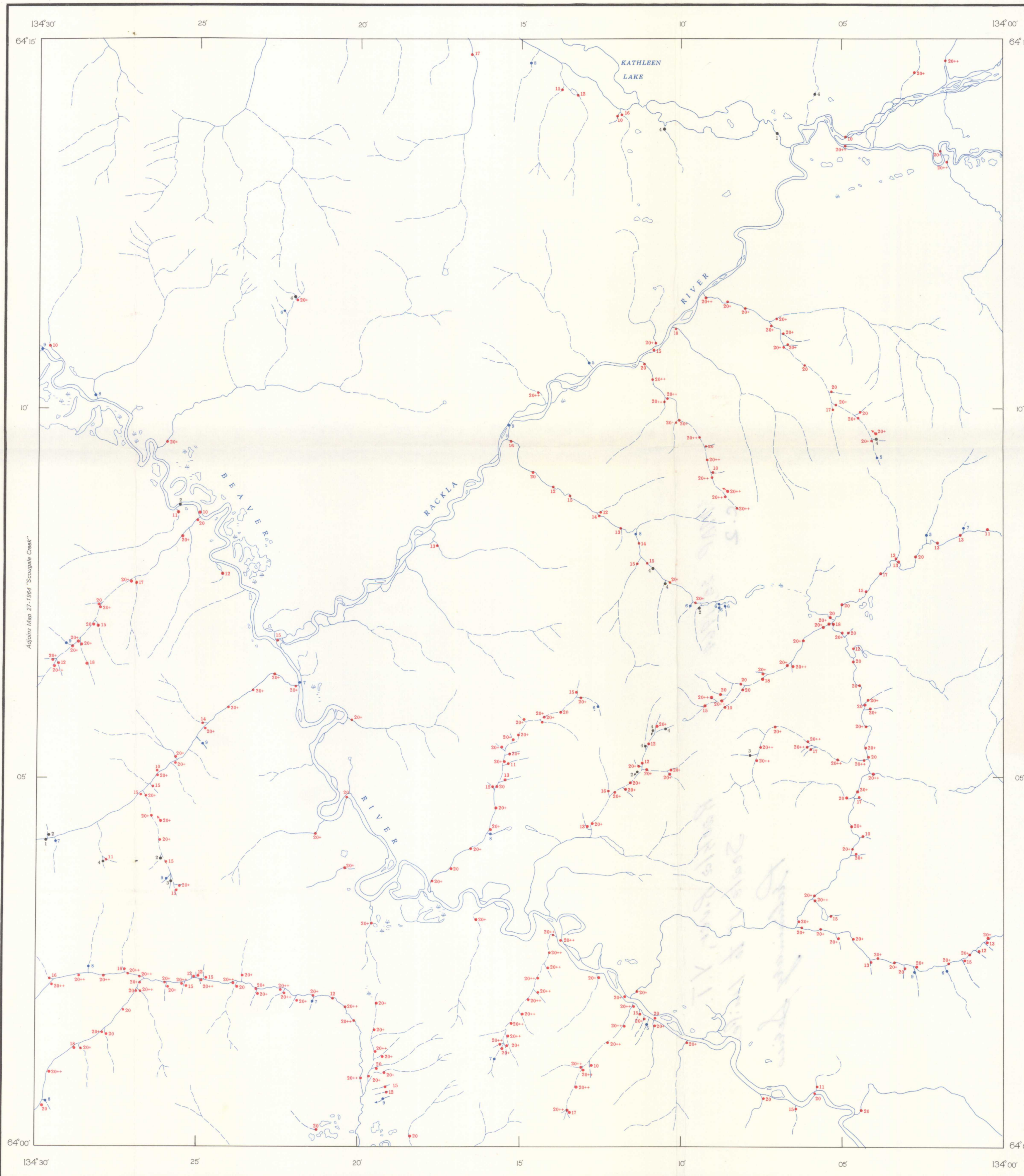
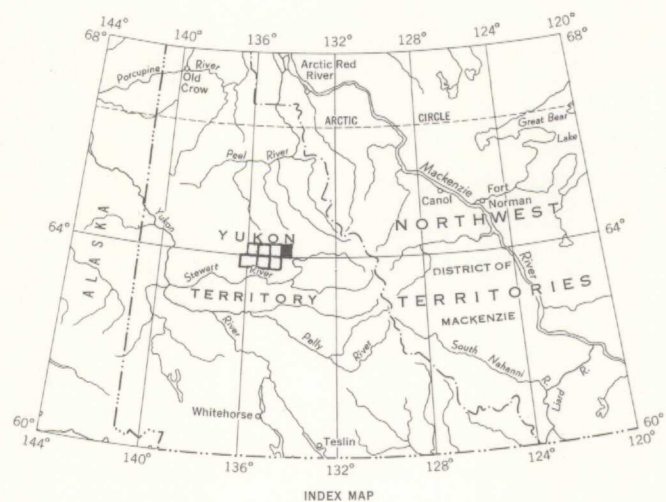
Geological cartography by the Geological Survey of Canada, 1965

Intermittent lake and stream .....

Marsh .....

Base-map cartography by the Geological Survey of Canada, 1964  
from map compiled by the Surveys and Mapping Branch

Approximate magnetic declination, 34° 12' East, decreasing 4.4' annually



**DESCRIPTIVE NOTES**

**Geological**

Most of Rackla River area is underlain by a series of meta-morphosed sedimentary rocks, mainly quartzites, phyllites, chlorite, sericite, and graphite schist, with minor slate and limestone. A band of dolomite with minor limestone occurs in the northwest corner of the area. Basic igneous sills and lenses now altered to greenstone are interlayered with the metasedimentary rocks.

The region has undergone several stages of glaciation and thick glacial deposits occupy the major valleys and hill slopes below an elevation of 3,000 feet. Permafrost is present throughout the area.

No mineral deposits are known in the area. However, several lead-zinc-silver lodes are present in Davidson Range to the west. These deposits occur as fracture fillings in quartzites, phyllites, and greenstones; north of Mount Cameron a mineralized fault cuts a lens of limestone. A breccia zone in limestone and slate containing lead, zinc, silver, and cadmium has been reported north of Kathleen Lakes (Green and Roddick, 1962, Aho, 1964).

Further details on the geology and mineralization of the general area can be obtained from reports by Cockfield (1922), Green (1958), Green and McTaggart (1960), Green and Roddick (1962), Aho (1964), and Boyle (1965).

**Geochemical**

The data on this map are based on samples of sediment collected from the channels of the streams and on samples of sediments and precipitates in the vicinity of springs. Where possible the active channel was sampled. However, as the field work progressed it was found that moss on the creek banks below the water line had trapped considerable amounts of fine sediment. This kind of sample proved to be adequate and in many instances this was the type of stream sediment analyzed. The wet sediment was analyzed at the sample site for cold citrate-soluble heavy metals (principally zinc, copper, and lead) using the method described by Smith (1964).

The values are expressed as total heavy metal in parts per million. The quantitative laboratory work done to date indicates that most of the heavy metal detected by the field test is zinc.

Helicopters were used to set-out the traverse teams at or near the heads of the creeks. Traverses down the streams were made on foot. A helicopter was also used to do a small amount of reconnaissance sampling in the north and northwest parts of the area. Because of a lack of time, coverage in this area was not as complete as in the adjoining areas.

The anomalous metal dispersion trains in the stream sediments of the Rackla River area are frequently greater than 2 miles and in some instances over 6 miles in length. Most of the sediment anomalies have corresponding water anomalies (see Map 24-1964). Some of the sediment anomalies are related to metal-rich springs. Below the orifices of these springs red, brown, and sometimes white precipitates are formed. These are probably derived as the result of the oxidation of sulphide mineralization. The creeks in the southwest corner of the map-area and those draining north into Kathleen Lakes are underlain in part by massive quartzite similar to the host rocks in which most of the lead-zinc-silver veins in the Keno Hill - Galena Hill area occur. The anomalous creeks in the rest of the area drain phyllitic rocks and greenstones. Further investigations are warranted to determine whether or not the anomalies are related to mineralization of economic interest.

Little sampling was done in the northwest part of the area, underlain by dolomite. However, the stream sediments from the creeks draining this formation in the Scougale Lake area have higher than background amounts of lead.

The heavy metal content of the stream and spring sediment and precipitates shown on this map should be compared with the heavy metal content of the stream waters shown on Map 24-1964.

Aho, A. E.: Mineral potential of the Mayo district; Western Miner, vol. 37, No. 10, pp. 80-88 (1964).

Boyle, R. W.: Geology, geochemistry, and origin of the lead-zinc-silver deposits of the Keno Hill - Galena Hill area, Yukon Territory; Geol. Surv. Can., Bull. 111 (1965).

Cockfield, W. E.: Silver-lead deposits of Davidson Mountains, Mayo district, Yukon Territory; Geol. Surv. Can., Summ. Rept. 1921, pt. A, pp. 1A-6A (1922).

Green, L. H.: McQuesten Lake and Scougale Creek map-areas, Yukon Territory; Geol. Surv. Can., Paper 58-4 (1958).

Green, L. H., and McTaggart, K. C.: Structural studies in the Mayo District, Yukon Territory; Proc. Geol. Assoc. Canada, vol. 12, pp. 119-124.

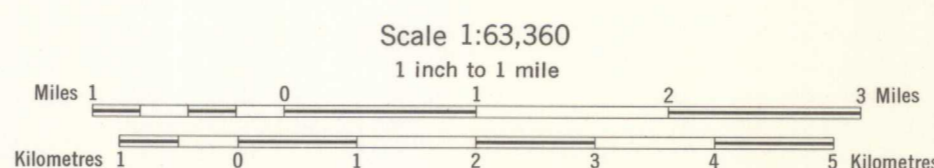
Green, L. H., and Roddick, J. A.: Dawson, Larsen Creek, Nash Creek map-areas, Yukon Territory; Geol. Surv. Can., Paper 62-7 (1962).

Smith, A. Y.: Cold extractable "heavy metal" in soil and alluvium; Geol. Surv. Can., Paper 63-49 (1964).

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DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA

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MAP 25-1964  
HEAVY METAL CONTENT OF STREAM AND SPRING SEDIMENTS  
**RACKLA RIVER**  
YUKON TERRITORY



106 D/1  
RACKLA RIVER  
YUKON TERRITORY  
MAP 25-1964

9961 I - B4V

5.1.11 Rackla River  
A1 Geol. Map 25.1964  
Scale 1" to 1 mile

9961 I - B4V  
9961 I - B4V  
9961 I - B4V