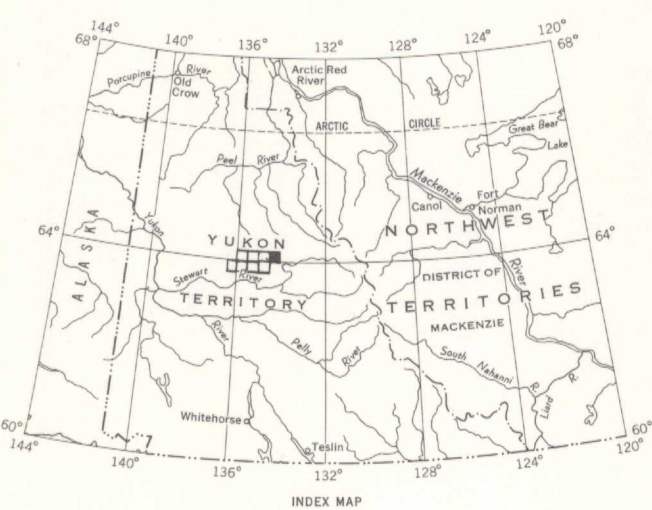


LEGEND

- Concentration of heavy metal, 0.001 or greater ppm in stream waters in spring waters
- Concentration of heavy metal, 0.000 ppm in stream waters in spring waters
- Field work by C. F. Gleeson, W. M. Tupper, A. Suparman, K. Domal, M. Shafiqullah, J. A. Colwell, J. R. Deighton, C. H. Yurchak, J. K. Worth, H. R. James, A. G. Troup, G. Wind, L. Hogg, and F. R. Campbell
- 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 metamorphosed sedimentary rocks, mainly quartzites, phyllites, chlorite, sericite, and graphitic 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 metamorphosed 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 (1955), Green and McTaggart (1960), Green and Roddick (1962), Aho (1964), and Boyle (1965).

Geochemical

The data on the map are based on samples of stream and spring waters that were tested at the sample site using the method described by Boyle, Illsley, and Green (1955).

The values are expressed as total heavy metal (principally zinc, copper, and lead) in parts per million. Most of the heavy metal in the water is zinc. The pH of the waters varies from 4.8 to 8.5, but most of the values are between 5.5 and 7.5. The temperature of the waters varies from 0° to 10° C.

Helicopters were used to set-out 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 is not as complete as in the adjoining areas.

Many of the creeks in the area sampled are anomalous and have metal dispersion trains that are frequently greater than 2 miles and in some instances over 6 miles long. Most of the water anomalies have corresponding sediment anomalies (see Map 25-1964). Metal bearing springs are in part responsible for some of the high values found in the stream waters. Red, brown, and sometimes white precipitates are found in the vicinity of many of the anomalous springs. The metal in the water and precipitates is probably derived from sulphide mineralization. The anomalous creeks in the southwest corner of the 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 silver-lead-zinc deposits of Keno Hill - Galena Hill occur. In the rest of the area the anomalous creeks are associated with phyllitic rocks and greenstones. Further investigations are required in order to determine whether or not the anomalies in this area are related to mineralization of economic importance.

The heavy metal content of the waters shown on this map should be compared with the heavy metal content of the stream and spring sediments and precipitates shown on Map 25-1964.

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

Boyle, R. W., Illsley, C. T., and Green, R. N.: Geochemical investigation of the heavy metal content of streams and spring waters in the Keno Hill - Galena Hill area, Yukon Territory; Geol. Surv. Can., Bull. 32 (1955).

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).

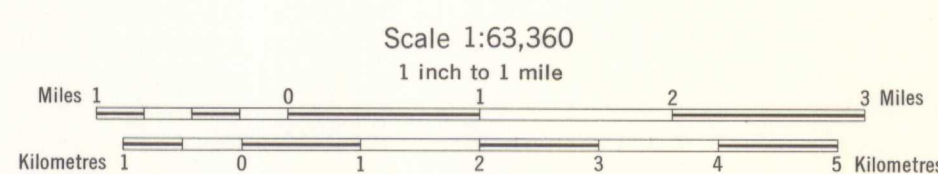
Green, L. H.: McQuesten Lake and Scougale Creek map-areas, Yukon Territory; Geol. Surv. Can., Paper 58-4 (1958).

Green, L. H., and McTaggart, K. C.: Structural studies in the Mayo district, Yukon Territory; Proc. Geol. Assoc. Canada, vol. 12, pp. 119-134 (1960).

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

PUBLISHED, 1965. COPIES OF THIS MAP MAY BE OBTAINED FROM THE DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA. PRINTED BY THE SURVEYS AND MAPPING BRANCH

MAP 24-1964
HEAVY METAL CONTENT OF STREAM AND SPRING WATERS
RACKLA RIVER
YUKON TERRITORY



106 P₁
RACKLA RIVER
YUKON TERRITORY
MAP 24-1964

5961 1- Bdd
5. 1. 11 Rackla River
A1 Geol. Map 24, 1964
Scale 1" to 1 mile