

DESCRIPTIVE NOTES

GEOLOGICAL

The underlying consolidated rocks are quartzites, greenstone sills, and sericite, chlorite, and graphitic schists. These form the southerly dipping limb of a large anticline with its axis along the McQuesten-Ladue River Valley.

The area has been severely glaciated in the lower levels and is in the permafrost region. The ore veins are brecciated fault and fracture fillings. Ore shoots are restricted to quartzite and greenstone layers. The veins are of two types: (a) early quartz, pyrite, arsenopyrite veins that strike N30°E. to N80°E., and (b) later siderite, galena, sphalerite, freibergite veins that strike north to N45°E. In places type (a) veins carry type (b) minerals.

The upper parts of nearly all veins have been highly oxidized. The principal minerals in the oxidized zone are limonite, manganese oxides, cerussite, anglesite, and malachite.

GEOCHEMICAL

The field and laboratory methods used were those described by Huff, L.C. (A Sensitive Field Test for Heavy Metals in Water; Econ. Geol. Vol. 43, pp. 675-684, 1948), and Sandell, E.B. (Colorimetric Determination of Traces of Metals, Inter-Science Publishers, Inc., New York, N.Y., 1944).

The results are expressed as total heavy metal (zinc, lead, copper) in parts per million. The principal metal in the water is zinc but in a few streams lead and copper were detected. The temperature of the water varies from 1°C to 10°C. The pH of nearly all samples was 5.

Geochemical field work indicates that some ore veins produce anomalies in the heavy metal content of the streams in their vicinity. Examples are the streams in Faro Gulch and Silver Basin. Other ore veins do not produce anomalies in the heavy metal content of nearby streams. An example is the failure of the Calumet-Hector, Elsa, and No Cash veins to produce anomalies in the streams draining the northwestern slope of Galena Hill.

Several large anomalies occur in streams where ore veins are not known. Attention is called to the following streams: Parent Creek, Allen Creek, the stream draining the northern slope of Beauvette Hill, and the western tributary of the stream in Gambler Gulch. The latter stream derives its heavy metal content from a series of springs charged with sulphates, iron, manganese, zinc, and copper and the Ladue-Sadie Friendship vein is not the source of the metal as far as could be determined from a detailed surface investigation.

LEGEND

- Concentration of heavy metal, 0.010 or greater ppm. . . . . 0.030 ●
- Concentration of heavy metal, less than 0.010 ppm. . . . . 0.005 ○
- Approximate location of known ore veins . . . . . 10
- Mining properties . . . . . 10

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| 1 Onek                             | 14 Silver Basin                                 |
| 2 Bellekeno                        | 15 Caribou                                      |
| 3 Mount Keno                       | 16 Moth   |
| 4 Croesus No. 1                    | 17 Vanguard                                     |
| 5 Klondyke Keno                    | 18 Mackeno                                      |
| 6 Ladue-Sadie Friendship           | 19 Yukeno                                       |
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| 8 Shamrock                         | 21 No Cash                                      |
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| 10 Porcupine and Comstock-Keno     | 23 Elsa (United Keno Hill Mines Ltd.)           |
| 11 No. 9, Main Fracture, and Nabob | 24 Arctic and Mastiff                           |
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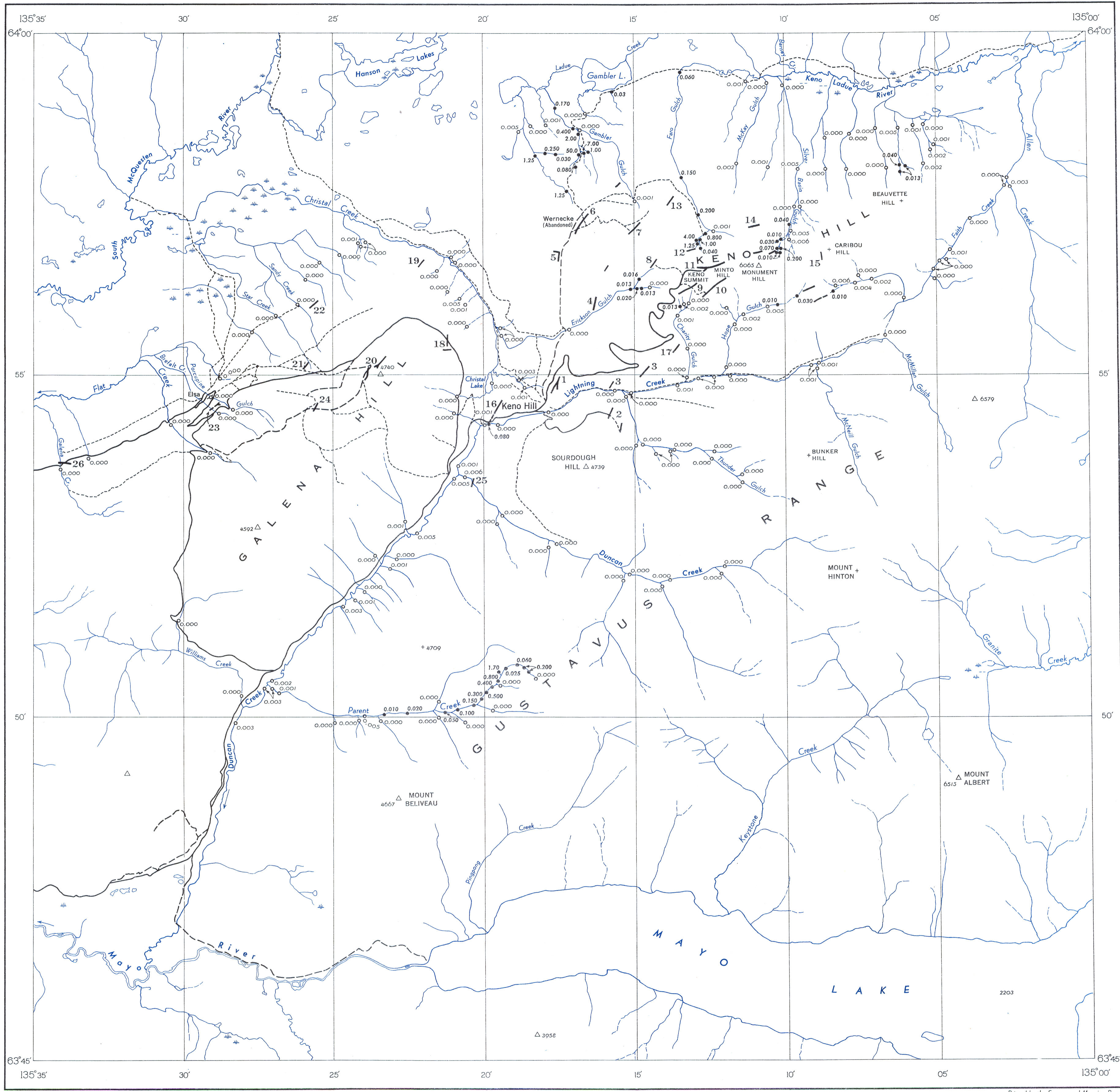
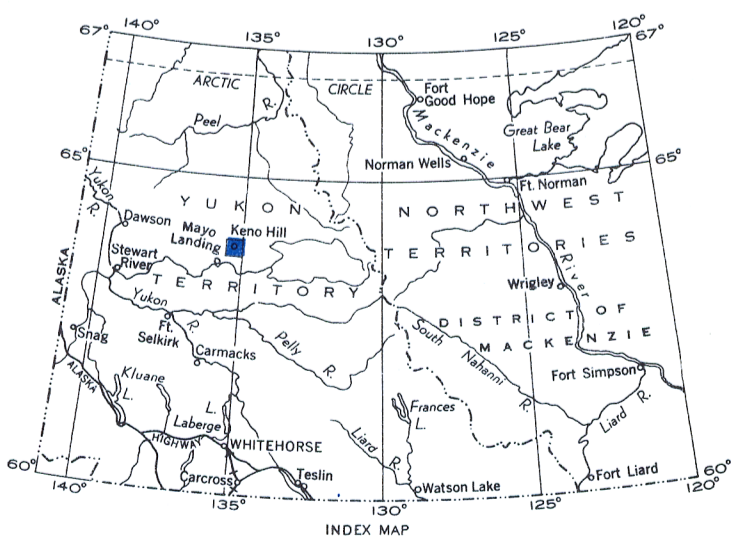
Field work by R. W. Boyle, C. T. Illsley and R. N. Green, July, August, 1954

- Main road . . . . .
- Other roads . . . . .
- Trail . . . . .
- Stream (position approximate) . . . . .
- Marsh . . . . .
- Triangulation station . . . . . Δ
- Height in feet above mean sea-level . . . . . 4667

Approximate magnetic declination, 34° 27' East

Cartography by the Geological Cartography Division, 1955

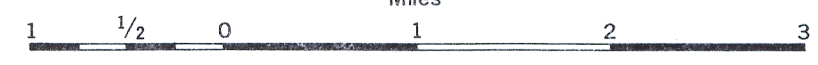
Air photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario



PRELIMINARY MAP 54-18

A Geochemical Investigation of the Heavy Metal Content of the Streams in the Keno Hill - Galena Hill Area, Yukon Territory

Scale: One Inch to One Mile =  $\frac{1}{63,360}$  Miles



Geographical names subject to revision

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