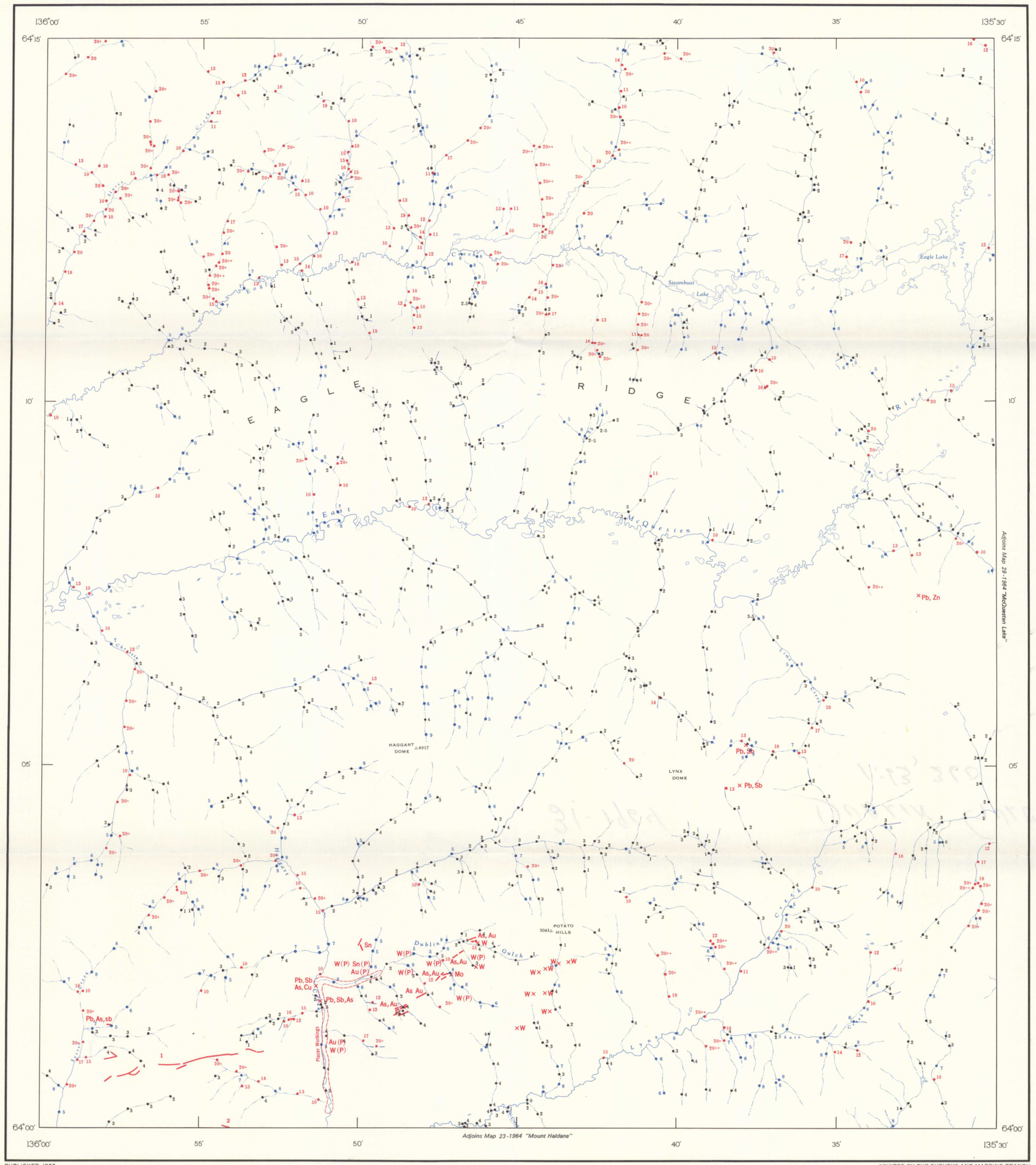
GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

PRELIMINARY SERIES

106 D/4



LEGEND

Concentration of heavy metal, 10 or greater ppm in stream sediments . . . . 15● , in spring sediments . . . . . 15▲

Concentration of heavy metal, 5 to 9 ppm in stream sediments . . . . 7● , in spring sediments . . . . . 7▲

Concentration of heavy metal, 0 to 4 ppm in stream sediments . . . . 2● , in spring sediments . . . . . 2▲

Location of known veins . . . . . — —

Mineral occurrence . . . . . Au ×

Mineral deposit 1

Mineral Symbols

Arsenic	As	Silver	Ag
Antimony	Sb	Tungsten (lode)	W
Copper	Cu	Tungsten (placer)	W(P)
Gold (lode)	Au	Tin (lode)	Sn
Gold (placer)	Au(P)	Tin (placer)	Sn(P)
Lead	Pb	Zinc	Zn
Molybdenum	Mo		

Index to Mineral Properties

1. Peso Silver (Pb, As, Sb, Cu, Ag, Zn, Bi)
2. Rex (Pb, Sb, Zn, Cu, Ag)

Field work by C. F. Gleeson, W. M. Tupper, A. Suparman, K. Domai, 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 . . . . .

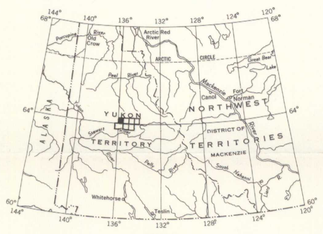
Marsh . . . . .

Horizontal control point . . . . . △

Elevation in feet above mean sea-level 4887

Base-map produced by the Surveys and Mapping Branch, 1958

Approximate magnetic declination, 33° 42' East, decreasing 4.2' annually



INDEX MAP

DESCRIPTIVE NOTES

Geological

The Dublin Gulch area is underlain by a series of metamorphosed sedimentary rocks, mainly quartzites, phyllites, slates, limestones, and sericite and chlorite schists. Stocks and sills of granite and a few small diorite, gabbro, and quartz-feldspar porphyry sills and dykes intrude the metasedimentary rocks.

The area has undergone several stages of glaciation. Glacial deposits occupy the major valleys and some of the hill slopes below an elevation of 3,000 feet. Permafrost underlies much of the area.

Easterly striking vein faults are mineralized with siderite, jamesonite, boulangerite, pyrite, arsenopyrite, galena, tetrahedrite, and chalcopyrite. The veins are oxidized and commonly contain the following secondary minerals: limonite, bindheimite, beudantite, scorodite, anglesite, and malachite.

Quartz-arsenopyrite-gold veins with a general northeast strike are present along and near the contacts of the granitic stocks. Near the surface these are oxidized with the development of abundant limonite and scorodite. Scheelite is found in quartz stringers and in skarn rocks close to the granitic intrusions. In places the granitic rocks also contain minor amounts of disseminated molybdenite. Two cassiterite-tourmaline veins occur on top of the hill on the right limit of Dublin Gulch near its mouth.

Placer gold has been recovered from Dublin Gulch and Haggart Creek since 1898. In addition, the placers contain considerable amounts of scheelite and small amounts of cassiterite, wolframite, native bismuth, and jamesonite.

Further details on the geology and mineralization of the area can be obtained from the reports by Bostock (1943), Green and Roddick (1962), Aho (1964), Boyle (1965), and Poole (1965a, 1965b).

Geochemical

The data on the map are based on samples of sediment collected from the channels of the streams, and the sediments and precipitates in the vicinity of springs. Where possible the active channel was sampled. As the field work progressed it was found that moss on the creek banks below the water line had trapped considerable amounts of sediment. This kind of sample proved to be adequate, and in many instances this was the type of stream sediment sample 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 tests is zinc.

The creeks not accessible by road were reached by helicopter. An attempt was made to maintain a sample interval of 1,500 feet along all creeks.

The results show that silt anomalies are coincident with most of the water anomalies (see Map 30-1964). The lead-antimony-arsenic deposits generally produce anomalies, but some are weak and have relatively short trains. The gold-arsenopyrite veins and scheelite occurrences also produce weak anomalies, and in some instances there is no associated anomaly in the stream sediment. The quantitative laboratory work done to date on arsenic, antimony, and tungsten shows that these deposits contribute considerable amounts of these metals to the stream systems.

The anomalous tributaries of Lynx Creek should be carefully investigated as should also the anomalies in the creeks draining the area east of the upper part of Lynx Creek. Quartzites underlie the area drained by the anomalous tributaries of Lynx Creek, and the area to the east is underlain in part by hornfels in contact with a granitic stock. The anomalous tributaries of Eagle Creek and Sluice Creek should also be investigated. Little or no prospecting has been done in this area which is underlain by a belt of quartzite, slate, and limestone that strikes northwest across this part of the map-area. In addition, follow up work to explain the anomalies on the right fork of Christie Creek and the left fork of upper Haggart Creek should be done. Metal rich springs are in part responsible for the anomalies in these creeks.

The heavy metal content of the stream and spring sediments and precipitates on this map should be compared with the heavy metal content of the water shown on Map 30-1964.

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

Bostock, H. S.: Upper McQuesten River, Yukon Territory; Geol. Surv. Can., Prelim. Map 43-9 (1943).

Boyle, R. W., Illsley, C. T., and Green, R. N.: Geochemical investigations of the heavy metal content of stream 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).

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

Poole, W. H.: Reports of activities: field, 1964; Geol. Surv. Can., Paper 65-1 (1965a).

_____: Mount Haldane, Dublin Gulch map-areas, Yukon Territory; Geol. Surv. Can., Prelim. map sheets (in press).

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

PUBLISHED, 1965
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MAP 31-1964

HEAVY METAL CONTENT OF STREAM AND SPRING SEDIMENTS

DUBLIN GULCH

YUKON TERRITORY

Scale 1:63,360

1 inch to 1 mile

Miles 1 0 1 2 3 Miles

Kilometres 1 0 1 2 3 4 5 Kilometres

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DUBLIN GULCH
YUKON TERRITORY
MAP 31-1964