

PRELIMINARY SERIES



LEGEND

Concentration of tungsten, less than 4 ppm
in stream sediments x in spring sediments 4

Concentration of tungsten, 4 to 8 ppm
in stream sediments * in spring sediments 14

Concentration of tungsten, 9 ppm or greater
in stream sediments + in spring sediments 24

Location of known mineral occurrences
(Symbols indicate principal metals) 20

Mining properties (see index below) 10

Metal Symbols

| | | | |
|-----------|----|------------------------------------|----|
| Arsenic | As | Molybdenum | Mo |
| Antimony | Sb | Nickel | Ni |
| Barium | Ba | Silver | Ag |
| Copper | Cu | Tungsten | W |
| Gold | Au | Tin | Sn |
| Manganese | Mn | Zinc | Zn |
| Lead | Pb | Cobalt (limonite, pyrite, etc.) | G |

Note: An (S) after the symbol indicates that the mineralization was observed in float. A (?) after the symbol indicates that the location is approximate or uncertain.

Index to Mining Properties and Prospects

1. Anasoda Co. (Canada), Ltd.
2. Great Northern Development Corp., Ltd.
3. Tatagouche Exploration Co., Ltd. (Oreva Brook)
4. Anasoda Co. (Canada), Ltd. (Rocky Turn Group)
5. Anasoda Co. (Canada), Ltd. (Armstrong 'A' deposit)
6. Anasoda Co. (Canada), Ltd. (Armstrong 'B' deposit)
7. Quebec Harpoon River Mines, Ltd. (Harvey and Shaft deposits)
8. Millstream iron deposit
9. Berastford copper deposit
10. Sigouin River Mines, Ltd.
11. Koyne mine
12. East Venores, Ltd.

Field work by: W. M. Tupper, M. Zankin, G. Friedrich, M. Carter, E. Dyrano, M. Shafiqullah, E. Boersma, D. Pockly, L. W. Lefroy, P. Martz, W. Warren, W. Taylor, R. Cormier, and E. T. Laver

Analyses by: G. J. MacGillivray and S. J. Henden

Geological cartography by: the Geological Survey of Canada, 1965

Base-map compiled and drawn by: the Surveys and Mapping Branch, 1954, 1956

Approximate magnetic declination: 24°03' West, decreasing 1.1" annually

DESCRIPTIVE NOTES

Geological

South of a line following the Millstream River and westward through Tatagouche Lake, the area is underlain mainly by the Ordovician Tatagouche Group comprising a series of complexly folded and sheared metamorphic, meta-volcanic, and metabasic intrusives. These are intruded south of Bathurst by a granitic mass.

North of the Millstream River the rocks are mainly of Ordovician, Silurian, and Devonian age. The Silurian Group, of probable Ordovician age, is composed of meta-sediments and some metavolcanics which are intruded by a granitic stock in the vicinity of Antlers Lake. The Silurian and Devonian rocks comprise both sedimentary and volcanic rocks that are faulted to pieces, gently folded, and on the whole are less metamorphosed than the older rocks in the district. In the Nicholas Doye area the Silurian rocks are intruded by a granitic stock that has an associated metamorphic aureole in which the rocks are mainly hornfels and slates. Another granitic stock intrudes Silurian volcanic rocks along South Benjamin River.

East of Nopisiguit River the area is underlain by the Pennsylvanian Bathurst Formation. These rocks are mainly siltstones, sandstones, grites, and conglomerates that dip gently eastward.

Fluvial conglomerates and sandstones (Bathurst Formation), possibly of Triassic age, underlie Heron Island and fringe the coast in the Jacquet River area.

Glacial till, sand, and gravel mantle the whole district, and recent post-glacial sands and clays cover much of the area around Bathurst Harbour and occur in the shore section at Jacquet River.

The principal mineral deposits in the area are massive, vein, and disseminated deposits containing essentially iron, zinc, lead, and copper sulphides. Molybdenite occurrences are associated with the Bathurst, Nicholas Doye, and Antlers Lake granitic bodies. Small quantities of scheelite occur in some of the shaly zones in the thermal aureole of the Nicholas Doye granitic stock.

The text of the paper accompanying this map should be consulted for further details on the geology and economic geology of the district.

Geochemical

The analyses recorded on this map were done on samples of sediment collected from the channels of rivers and streams and from rivulets flowing from springs. Where possible the active channels were sampled, but in a few cases the residual sediment of dried-up streams was used. In meandering areas and in streams where beaver workings are present the sediment contained abundant decomposed organic matter.

The sediment was dried, sieved to 40 mesh, ground to -100 mesh, and analysed for tungsten by the dilute method outlined by North (1956). The values are expressed in parts per million. The subdivisions used on the map are arbitrary and based on experience in the district. The lowest subdivision can be taken to represent the background.

All streams and rivers were traversed on foot, and the stream sediments were collected where possible, at intervals of 1,000 feet.

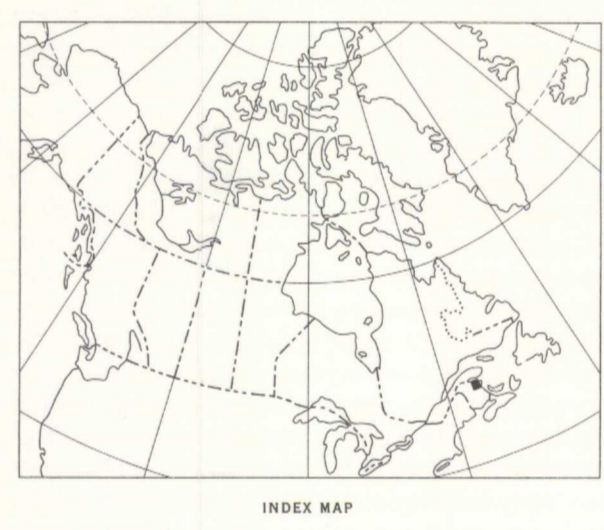
The tungsten content of the stream sediments ranges from less than 4 to 120 ppm. The background for the district is less than 4 ppm.

Only a few streams have higher than normal amounts of tungsten in the stream sediments. These include Bathurst and Rocky Brook and a number of other streams draining the area underlain by the Nicholas Doye granites and its contact aureole, the lower reaches of Grants and Hache Brooks, Lake Brook, and the east and west forks of the upper reaches of the Bellefleur River. A number of other slightly anomalous stretches of streams also occur throughout the district, but these are generally isolated and do not seem to fit any pattern.

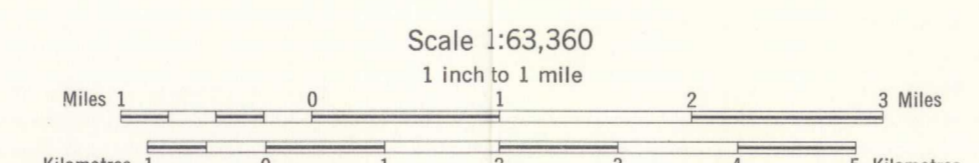
There is a correlation of tungsten and molybdenum in the stream sediments of some areas but not in others. Tungsten and arsenic also exhibit a correlation in some streams. Highly magnesian sediments frequently contain higher than normal amounts of tungsten, a feature that should be considered in assessing the anomalies on the map.

The tungsten contents of the stream and spring sediments shown on this map should be compared with those for heavy metals in water on Map 32-1961, and also with the contents of individual elements in stream sediments on Maps 31-1963 to 41-1963 inclusive.

North, A.A. Geochemical field methods for the determination of tungsten and molybdenum in soils, Analyst, vol. 81, pp. 660-668 (1956).



MAP 40-1965
PAPER 65-42
TUNGSTEN CONTENT OF STREAM AND SPRING SEDIMENTS
BATHURST-JACQUET RIVER DISTRICT
NEW BRUNSWICK



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BATHURST-JACQUET RIVER DISTRICT
NEW BRUNSWICK

| | | |
|--------|--------|--------|
| 21 000 | 21 100 | 21 200 |
| 21 300 | 21 400 | 21 500 |
| 21 600 | 21 700 | 21 800 |

40-1965