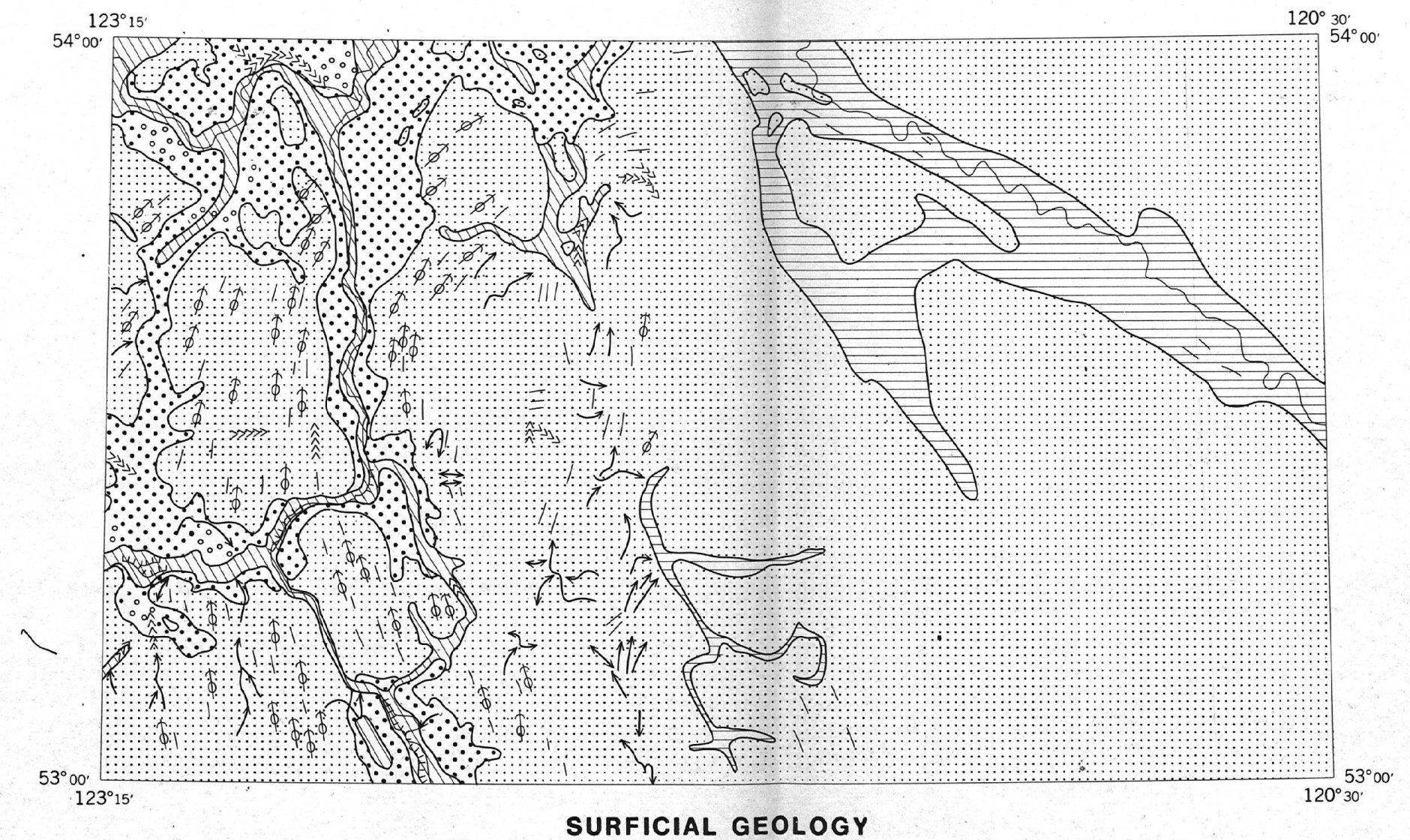


SURFICIAL GEOLOGY

Kilometres 0 20 40 60

Scale 1:1 000 000

BRITISH COLUMBIA SURFICIAL DEPOSITS

PROGLACIAL DEPOSITS

▨ LACUSTRINE DEPOSITS: Varved silt, clay, and sand, locally drumlinized and fluted through minor ice re-advance, fringed by beach deposits. Deposits up to 120 m thick along Nechako, >200 m thick along Blackwater.

▨ Meltwater or outwash channel deposits bounded by cutbanks or terraces

▤ UNDIVIDED GLACIOLACUSTRINE AND GLACIOFLUVIAL DEPOSITS: Sand, silt and clay with local accumulations up to 70 m thick along valley bottoms

GLACIAL DEPOSITS

▨ Undivided glacial till and ground moraine. Areas of low relief include abundant drumlins, rock drumlins, fluting, and esker complexes. Bedrock exposures predominate above 1700 m elevation

Outwash channel cutbank or terrace ....

Small meltwater or abandoned stream channel indicating direction of flow ....

Fluting or glacial striation ....

Drumlin, direction of flow known ....

Eskers and esker complexes ....

Kettled and pitted terrain ....

Note: Glacial deposits and features within NTS 93H are unmapped

Sources of information:

Geological Survey of Canada

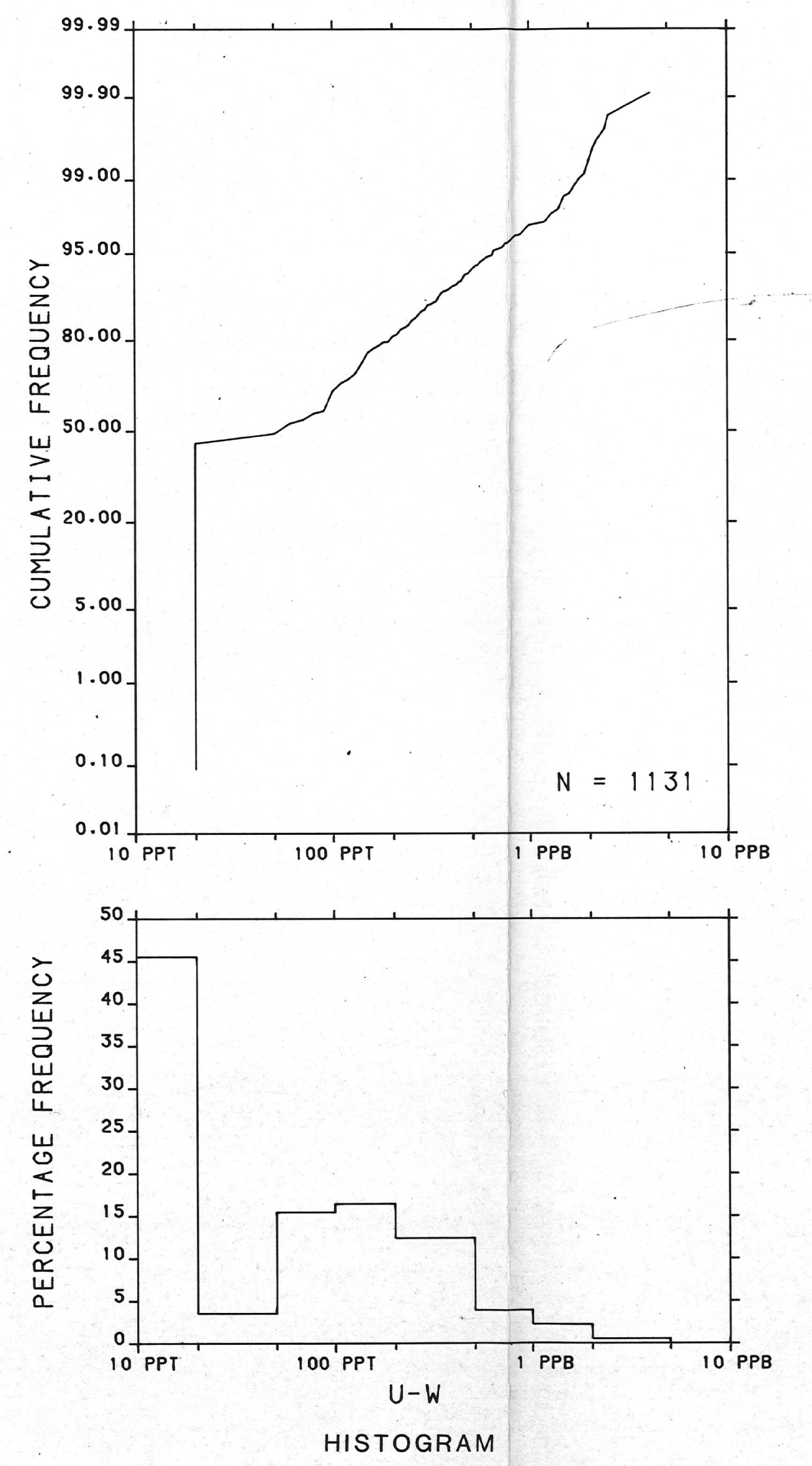
1938: Geology of Willow River Sheet
Map 335 A, West Half
Map 336 A, East Half

Tipper, H.W.

1971: Glacial Geomorphology and Pleistocene History
of Central British Columbia;
Geological Survey of Canada,
Bulletin 196. 89p. (esp. Map 1288A, scale 1:250 000)

Tipper, H.W., Campbell, R.B., Taylor, G.C. and Stott, D.F.

1979: Parsnip River,
British Columbia;
Geological Survey of Canada,
Map 1424A, scale 1:1 000 000

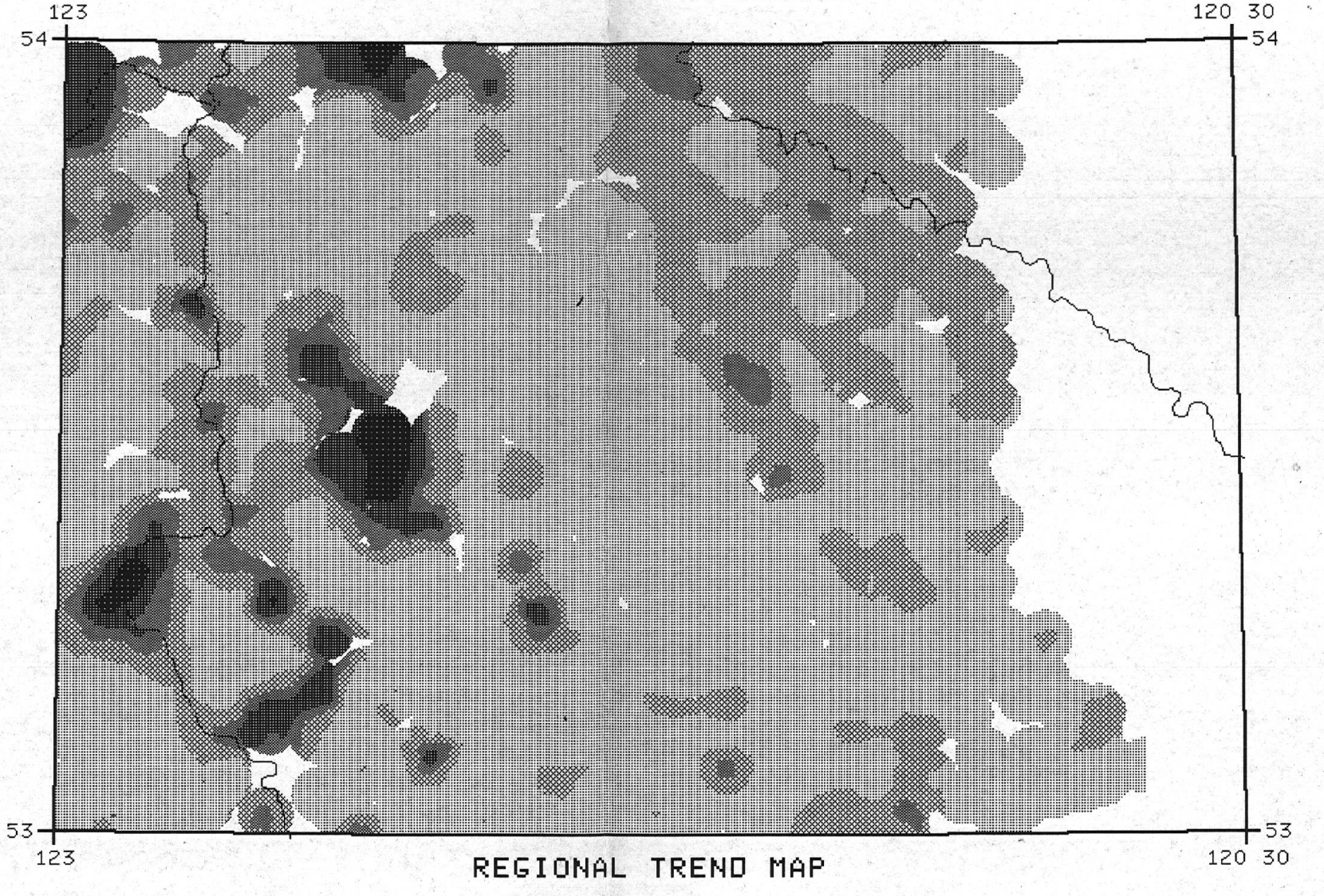


HISTOGRAM

UWAT

PPB	%TILE
4.10	MAX
1.40	98
0.65	95
0.36	90
0.13	70
0.02	MIN

1131 SAMPLES



REGIONAL TREND MAP

0 20 40 60

KILOMETERS- SCALE 1:1000000

Provincial Open File
BC RGS-12-1984 (93G E/2, 93H W/2)

LEGEND

(This legend to be used west of 122°00' only)

Note: This legend is common for Regional Geochemical 72-1984 Open File 1107

CENOZOIC
QUATERNARY
PLEISTOCENE AND RECENT
17 (TILL 44) TILL, GRAVEL, SAND, SILT, ALLUVIUM

TERTIARY
MIOCENE AND PLIOCENE
16 (BSLT 42) OLIVINE BASALT FLOWS, BRECCIA, AND TUFF
15 (SNDS 42) SANDSTONE, SHALE, CONGLOMERATE, DIATOMITE, LIGNITE

OLIGOCENE AND MIOCENE
14 (ANDS 42) *ENDAKO GROUP:* ANDESITE, BASALT, DACITE

PALEOCENE, EOCENE, OLIGOCENE
13 (CGLM 42) CONGLOMERATE, SANDSTONE, SHALE, TUFF, BRECCIA

MESOZOIC – CENOZOIC
UPPER CRETACEOUS AND LOWER TERTIARY
12 (RYLT 41) *OOTSA LAKE GROUP:* RHYOLITE, DACITE, TRACHYTE, SANDSTONE, SHALE, CONGLOMERATE

CRETACEOUS
11 (ANDS 36) ANDESITE, TUFF, BRECCIA, ARGILLITE, ARKOSE, CONGLOMERATE

LOWER CRETACEOUS
10 (CGLM 36) *SKEENA GROUP:* CONGLOMERATE, GREYWACKE, SHALE, COAL, VOLCANIC BRECCIA

JURASSIC
MIDDLE JURASSIC
9 (ANDS 34) *HAZELTON GROUP* (PART) UNDIVIDED: BASALT, ANDESITE, TUFF, BRECCIA, GREYWACKE, MUDSTONE, CONGLOMERATE

LOWER AND MIDDLE JURASSIC
8 (SHLE 34) SHALE, GREYWACKE, CONGLOMERATE

UPPER TRIASSIC AND LOWER JURASSIC
7 (ANDS 33) *TAKLA GROUP:* ANDESITE, BASALT, TUFF, BRECCIA, CONGLOMERATE, GREYWACKE, SHALE, LIMESTONE

TRIASSIC
UPPER TRIASSIC
6 (LMSN 32) LIMESTONE
5 (PLLT 32) BLACK PHYLLITE, SILTSTONE, LIMESTONE, QUARTZITE

PALEOZOIC
PENNSYLVANIAN AND PERMIAN
4 (CHRT 23) *CACHE CREEK GROUP:* RIBBON CHERT, BLACK ARGILLITE, LIMESTONE, GREENSTONE

MISSISSIPPIAN AND(?) YOUNGER
3 (BSLT 21) *SLIDE MOUNTAIN* GROUP: BASALT, BRECCIA, TUFF, CHERT, ARGILLITE, SANDSTONE, LIMESTONE, CONGLOMERATE

CAMBRIAN
LOWER CAMBRIAN
2 (LMSN 12) *MURAL FORMATION:* LIMESTONE (INCLUDES *MAHTO FORMATION* SILTSTONE, SANDSTONE)

PROTEROZOIC
HADRYNIAN
1 (SNDS 04) *KAZA GROUP:* SANDSTONE, CONGLOMERATE, GRIT, PHYLLITE, SCHIST, AMPHIBOLITE, MARBLE, GNEISS

PLUTONIC ROCKS

TERTIARY
D (GRDR 42) GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

LOWER CRETACEOUS
C (QTMZ 36) *NAVER INTRUSIONS:* QUARTZ MONZONITE, SYENITE, MONZONITE, GRANODIORITE, DIORITE

UPPER TRIASSIC
B (GRDR 32) TAKOMKANE BATHOLITH AND BODIES OF SIMILAR AGE AND LITHOLOGY: GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

PERMIAN AND/OR TRIASSIC
A (SRPN 31) TREMBLEUR INTRUSIONS AND SIMILAR BODIES: PERIDOTITE, DUNITE, PYROXENITE, SERPENTINITE

SYMBOLS

GEOLOGICAL BOUNDARY: MAPPED, ASSUMED ....

FAULT: MAPPED, ASSUMED ....

THRUST FAULT (TEETH ON HANGINGWALL): MAPPED, ASSUMED ....

ANTICLINAL AXIS ....

SYNCLINAL AXIS ....

STREAM SAMPLE SITE .... +

GEOLOGY AND MINERAL DEPOSITS

Generalized geology after Geological Survey of Canada Map 49–1960, Prince George, British Columbia, 1 inch to 4 miles, H. W. Tipper, 1959 and Geological Survey of Canada Map 1424A, Parsnip River, British Columbia, 1:1 000 000, compilation by H. W. Tipper, R. B. Campbell, G. C. Taylor, and D. F. Stott, 1979, used to determine dominant catchment basin rock type for grouping of geochemical data.

The four-letter mnemonic name indicates rock type and the two-digit number indicates age.

For location of the following specific information for this area refer to British Columbia Ministry of Energy, Mines and Petroleum Resources: Mineral Deposits, refer to Mineral Inventory Map (MI) 93G (PRINCE GEORGE); Assessment Reports, refer to Assessment Report Index Map (AR) 93G (PRINCE GEORGE); Bedrock Geologic Mapping Reports, refer to *Index to Bedrock Geological Mapping, 1983;* Mineral and Placer Claim Maps, contact Ministry of Energy, Mines and Petroleum Resources, Titles Branch, for current editions.

Geological Survey of Canada

Resource Geophysics and Geochemistry Division

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

CONTRACTORS

Sample collection by McElhanney Surveying and
Engineering Ltd., Vancouver
Sample preparation by Golder Associates, Ottawa

Sediment chemical analysis by Barringer Magenta Ltd.,
Rexdale, Ontario
Water chemical analyses by Barringer Magenta Laboratories
(Alberta) Ltd., Calgary

Copies of map material and listings of field observations and analytical data, from which the material was prepared, may be available at users expense by application to:

K.G. Campbell Corporation
880 Wellington St.
Bay 238
Ottawa, Ontario
K1R 6K7

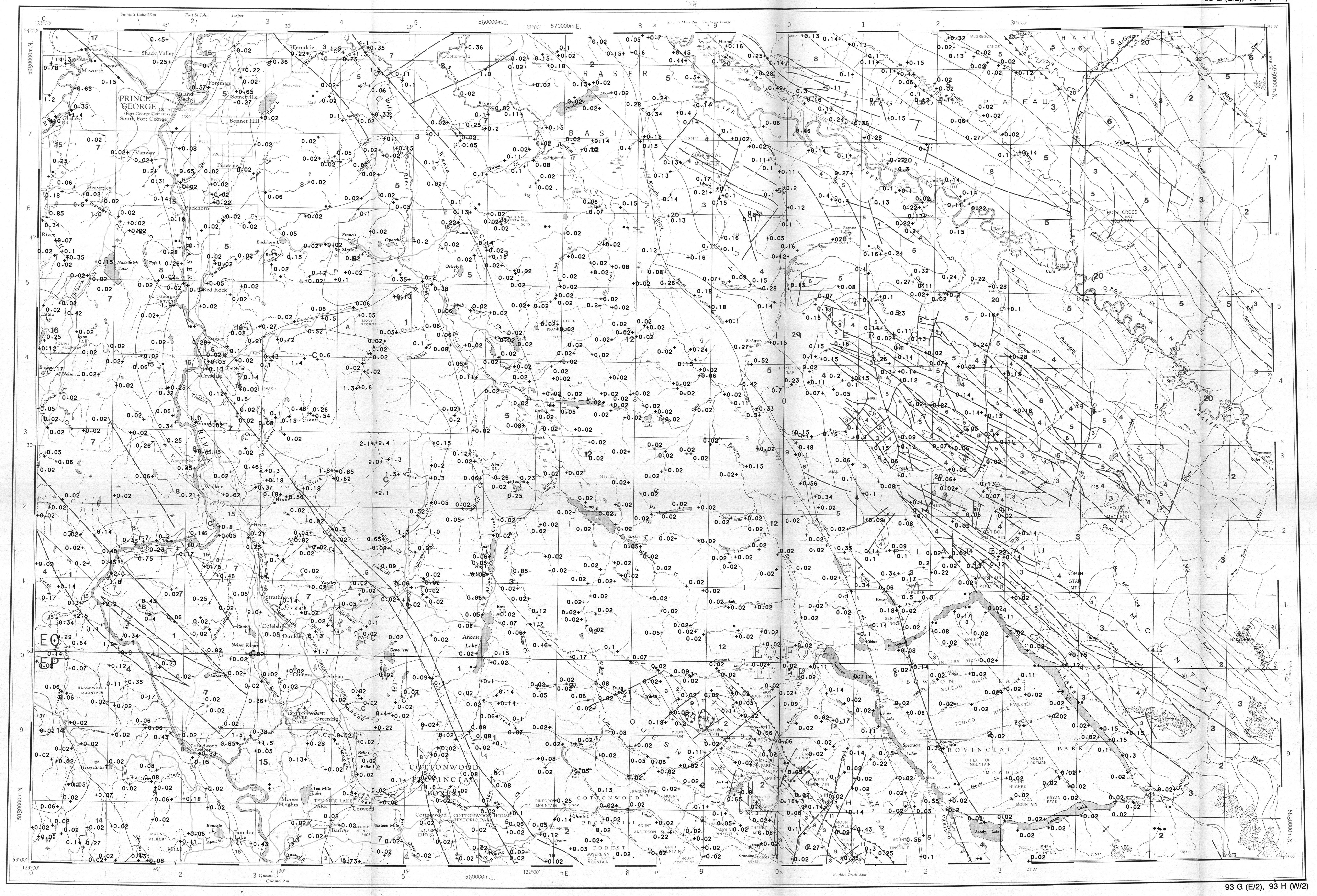
The data are also available in digital form.
For further information please contact:

The Director
Computer Science Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0E4

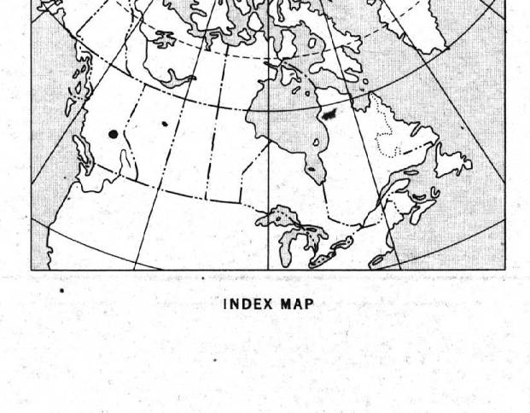
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

93 G (E/2), 93 H (W/2)



93 G (E/2), 93 H (W/2)



INDEX MAP

Elevation in feet above mean sea level

Mean magnetic declination 1985, 27°34' West, decreasing 9.9' annually. Readings vary from 26°41' in the SW corner to 28°27' in the NE corner of the map area

URANIUM in water (ppb)

GSC OPEN FILE 1107

REGIONAL GEOCHEMICAL RECONNAISSANCE MAP 72-1984

JOINT CANADA/BRITISH COLUMBIA PROGRAM

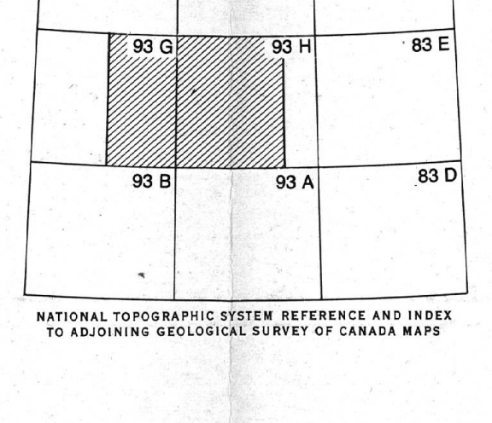
STREAM SEDIMENT AND WATER GEOCHEMICAL SURVEY
EAST-CENTRAL BRITISH COLUMBIA

Scale 1:250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection

Base map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1969, 1970



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

URANIUM in water (ppb)

GSC OPEN FILE 1107

EAST-CENTRAL BRITISH COLUMBIA

LEGEND

(This legend to be used east of 122°00' only.)

Note: This legend is common for Regional Geochemical 72-1984 Open File 1107

QUATERNARY
PLEISTOCENE AND RECENT
20 (TILL 44) TILL, GRAVEL, SAND, SILT, ALLUVIUM

CRETACEOUS OR TERTIARY
UPPER CRETACEOUS OR PALEOCENE
19 (CGLM 41) BOWRON RIVER COAL BEDS: CONGLOMERATE, BRECCIA, SANDSTONE, SHALE, COAL

UPPER JURASSIC AND LOWER CRETACEOUS
18 (SNDS 35) *NIKANASSIN FORMATION:* SANDSTONE, SILTY SHALE, SILTSTONE

JURASSIC
LOWER TO UPPER JURASSIC
17 (SHLE 34) *FERNIE GROUP:* SHALE, SILTY SHALE, SILTSTONE

TRIASSIC
UPPER TRIASSIC
16 (PLLT 32) PHYLLITE, ARGILLITE, MINOR LIMESTONE, QUARTZITE

MIDDLE AND UPPER TRIASSIC
15 (LMSN 32) *SPRAY RIVER GROUP, WHITEHORSE FORMATION:* LIMESTONE AND DOLOSTONE

LOWER AND MIDDLE TRIASSIC
14 (SLSN 32) *SULPHUR MOUNTAIN FORMATION:* SILTSTONE AND SILTY LIMESTONE

MISSISSIPPIAN AND PERMIAN
13 (LMSN 23) *RUNDLE GROUP, ISHBEL GROUP; BANFF FORMATION:* LIMESTONE, SANDSTONE, LIMY SHALE, DOLOSTONE, CHERT

MISSISSIPPIAN
LOWER MISSISSIPPIAN AND/OR YOUNGER
12 (BSLT 21) *SLIDE MOUNTAIN GROUP, ANTLER FORMATION:* PILLOW BASALT, BRECCIA, TUFF, MINOR DIORITE AND GABBRO, CHERT, ARGILLITE, LITHIC SANDSTONE

LOWER MISSISSIPPIAN AND/OR OLDER
11 (CGLM 21) *GUYET FORMATION, GREENBERRY FORMATION:* CONGLOMERATE, ARGILLITE, LITHIC SANDSTONE, CRINOIDAL LIMESTONE

DEVONIAN
UPPER AND MIDDLE DEVONIAN
10 (LMSN 18) *PALLISER, SOUTHESK, ALEXO, PERDRIX, MOUNT HAWK, FLUME FORMATIONS:* LIMESTONE, SHALE, SANDSTONE, SILTSTONE

LOWER DEVONIAN AND YOUNGER
9 (BSLT 18) *BLACK STUART FORMATION:* BASALT, CHERT, CHERT BRECCIA, DOLOMITE BRECCIA, UPPER UNIT CHERTY ARGILLITE, PHYLLITE, SANDY LIMESTONE

SILURIAN
LOWER SILURIAN
8 (DLMT 16) *NONDA FORMATION* ALL OR IN PART: DOLOMITE, LIMESTONE, QUARTZITE, SHALE, GREENSTONE FLOWS AND SILLS

ORDOVICIAN
LOWER AND MIDDLE ORDOVICIAN
7 (DLMT 14) *SKOKI, MONKMAN, CHUSHINA FORMATIONS:* DOLOMITE, LIMESTONE, SANDSTONE, SHALE, QUARTZITE

CAMBRIAN
6 (SHLE 12) *LYNX, DOME CREEK, ARCTOMYS, WATERFLOWL, HOTA–ADOLPHUS, TATEI–CHETANG, TITKANA FORMATIONS:* SHALE, SILTY LIMESTONE, DOLOMITE, SANDSTONE, SILTSTONE, ARGILLITE, PHYLLITE

LOWER CAMBRIAN AND HADRYNIAN
5 (QRTZ 11) *MAHTO, MURAL, MIDAS, McNAUGHTON, YANKS PEAK FORMATIONS:* QUARTZITE, LIMESTONE, SHALE, SILTSTONE, PHYLLITE, DOLOMITE, CONGLOMERATE

HADRYNIAN
4 (SHLE 04) *YANKEE BELLE, CUNNINGHAM FORMATIONS:* SHALE, LIMESTONE, SILTSTONE, DOLOMITE, PHYLLITE
3 (PLLT 04) *MIETTE GROUP; ISAAC FORMATION:* PHYLLITE, ARGILLITE, SCHIST, SANDSTONE, LIMESTONE, CONGLOMERATE
2 (FPCA 04) *KAZA GROUP, SNOWSHOE FORMATION, MIDDLE MIETTE GROUP:* FELDSPATHIC SANDSTONE, GRANULE CONGLOMERATE, SILTSTONE, ARGILLITE, PHYLLITE, SCHIST, LIMESTONE MARBLE
1 (ARGL 04) *LOWER MIETTE GROUP:* ARGILLITE, PHYLLITE, SANDSTONE, LIMESTONE

INTRUSIVE ROCKS

MISSISSIPPIAN OR YOUNGER
A (SRPN 21) SERPENTINITE

SYMBOLS

GEOLOGICAL BOUNDARY: MAPPED, ASSUMED ....

FAULT (DOT ON DOWNTHROWN SIDE): MAPPED, ASSUMED ....

THRUST FAULT (TEETH ON HANGINGWALL): MAPPED, ASSUMED ....

ANTICLINAL AXIS ....

SYNCLINAL AXIS ....

STREAM SAMPLE SITE .... +

GEOLOGY AND MINERAL DEPOSITS

Generalized geology after Geological Survey of Canada, Map 1356A to accompany Paper 72–35, *Geology of McBride Map Area,* British Columbia, by R. B. Campbell, E. W. Mountjoy, and F. G. Young; Geological Survey of Canada Map 1424A, Parsnip River, British Columbia, 1:1 000 000, compilation by H. W. Tipper, R. B. Campbell, G. C. Taylor, and D. F. Stott, 1979; Figure 2, Geological Map of the Cariboo River Area accompanying British Columbia Ministry of Energy, Mines and Petroleum Resources Bulletin 47, *Geology of the Cariboo River Area,* by A. Sutherland Brown, 1963; and Geological Survey of Canada Open File 781, *Bedrock Geology of Barkerville-Cariboo Area,* by L. C. Struick, 1981, used to determine dominant catchment basin rock type for grouping of geochemical data.

The four-letter mnemonic name indicates rock type and the two-digit number indicates age.

For location of the following specific information for this area refer to British Columbia Ministry of Energy, Mines and Petroleum Resources: Mineral Deposits, refer to Mineral Inventory Map (MI) 93H (McBRIDE); Assessment Reports, refer to Assessment Report Index Map (AR) 93H (McBRIDE); Bedrock Geological Mapping Reports, refer to *Index to Bedrock Geological Mapping, 1983;* Mineral and Placer Claim Maps, contact Ministry of Energy, Mines and Petroleum Resources, Titles Branch, for current editions.

This map forms one of a series of maps released by the Geological Survey of Canada, Open File 1107. The Open File consists of maps of various geochemical variables: 18 for stream sediment, 3 for stream water and 1 sample site location

URANIUM in water (ppb)

GSC OPEN FILE 1107

EAST-CENTRAL BRITISH COLUMBIA