

**BRITISH COLUMBIA SURFICIAL DEPOSITS**

**PROGLACIAL DEPOSITS**

LACUSTRINE DEPOSITS: Varied silt, clay, and sand, locally drumlined 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 of flow

UNDIVIDED 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

**PH**

8.6 MAX

7.6 6S

7.2 40

6.8 23

6.4 7

4.2 MIN

1131 SAMPLES

**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

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

**LEGEND**  
(This legend to be used west of 122°00' on W)

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

- CENOZOIC**
- QUATERNARY**
- PLEISTOCENE AND RECENT
- [17] TILL (4) TILL, GRAVEL, SAND, SILT, ALLUVIUM
- TERTIARY**
- MIOCENE AND PLEISTOCENE
- [16] ISLANDS 40 OLIVINE BASALT FLUVE, BRECCIA, AND TUFF
- [15] ISLANDS 42 SANDSTONE, SHALE, CONGLOMERATE, DIATOMITE, LIGNITE
- OLIGOCENE AND MIOCENE
- [14] ISLANDS 42 ENDOKO GROUP, ANDESITE, BASALT, DACITE
- PALEOCENE, EOCENE, OLIODENSE
- [13] ISLANDS 40 CONGLOMERATE, SANDSTONE, SHALE, TUFF, BRECCIA
- MESOZOIC - CENOZOIC**
- UPPER CRETACEOUS AND LOWER JURASSIC
- [12] ISLANDS 41 COTEAU LAKE GROUP, RHYOLITE, DACITE, TRACHYTE, SANDSTONE, SHALE, CONGLOMERATE
- CRETACEOUS**
- [11] ISLANDS 39 ANDESITE, TUFF, BRECCIA, ARGILLITE, ARKOSE, CONGLOMERATE
- LOWER CRETACEOUS
- [10] ISLANDS 39 SERRANA GROUP, CONGLOMERATE, GREYWACKE, SHALE, COAL, VOLCANIC BRECCIA
- JURASSIC**
- MIDDLE JURASSIC
- [9] ISLANDS 38 HAZLETON GROUP (PART UNDIVIDED): BASALT, ANDESITE, TUFF, BRECCIA, GREYWACKE, MUDSTONE, CONGLOMERATE
- LOWER AND MIDDLE JURASSIC
- [8] ISLANDS 38 SHALE, GREYWACKE, CONGLOMERATE
- UPPER TRIASSIC AND LOWER JURASSIC
- [7] ISLANDS 38 KAZA GROUP, ANDESITE, BASALT, TUFF, BRECCIA, CONGLOMERATE, GREYWACKE, SHALE, LIMESTONE
- TRIASSIC**
- UPPER TRIASSIC
- [6] ISLANDS 38 LIMESTONE
- [5] ISLANDS 38 BLACK PHYLITE, SILTSTONE, LIMESTONE, QUARTZITE
- PALEOZOIC**
- PENNSYLVANIAN AND PERMIAN
- [4] ISLANDS 38 CACHÉ CREEK GROUP, RIBBON CHERT, BLACK ARGILLITE, LIMESTONE, GREENSTONE
- MISSISSIPPIAN AND/ OR YOUNGER
- [3] ISLANDS 38 SLEDE MOUNTAIN GROUP, BASALT, BRECCIA, TUFF, CHERT, ARGILLITE, SANDSTONE, LIMESTONE, CONGLOMERATE
- CAMBRIAN**
- LOWER CAMBRIAN
- [2] ISLANDS 38 MURAL FORMATION, LIMESTONE (INCLUDES MANTO FORMATION SILTSTONE, SANDSTONE)
- PROTEROZOIC**
- HADRYNIAN
- [1] ISLANDS 38 KAZA GROUP, SANDSTONE, CONGLOMERATE, GRIT, PHYLITE, SCHIST, AMPHIBOLITE, MARBLE, GNEISS
- PLUTONIC ROCKS**
- TERTIARY**
- [9] ISLANDS 42 GRANDIORITE, QUARTZ DIORITE, QUARTZ MONZONITE
- LOWER CRETACEOUS
- [8] ISLANDS 38 MAYER INTRUSIONS, QUARTZ MONZONITE, SYENITE, MONZONITE, GRANDIORITE, DIORITE
- UPPER TRIASSIC
- [7] ISLANDS 38 TROCHANEER BATHOLITH AND BODIES OF SIMILAR AGE AND LITHOLOGY: GRANDIORITE, QUARTZ DIORITE, QUARTZ MONZONITE
- PERMIAN AND/ OR TRIASSIC
- [6] ISLANDS 38 THUNDERBOLT INTRUSIONS AND SIMILAR BODIES: PEGMATITE, 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

**GEOLGY AND MINERAL DEPOSITS**

Generalized geology after Geological Survey of Canada Map 49-1960, Prince George, British Columbia, 1:500 000, and Geological Survey of Canada Map 155A, Terrace 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 correct catchment basin rock type for purposes 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 (MIS); PRINCE GEORGE; Assessment Reports, refer to Assessment Report Index Map (ARI); BCG PRINCE GEORGE; Bedrock Geologic Mapping Reports, refer to Index to Bedrock Geologic Mapping Reports (IBGMR); Mineral and Plant Claim Maps, contact Ministry of Energy, Mines and Petroleum Resources, Title 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 McElhaney 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

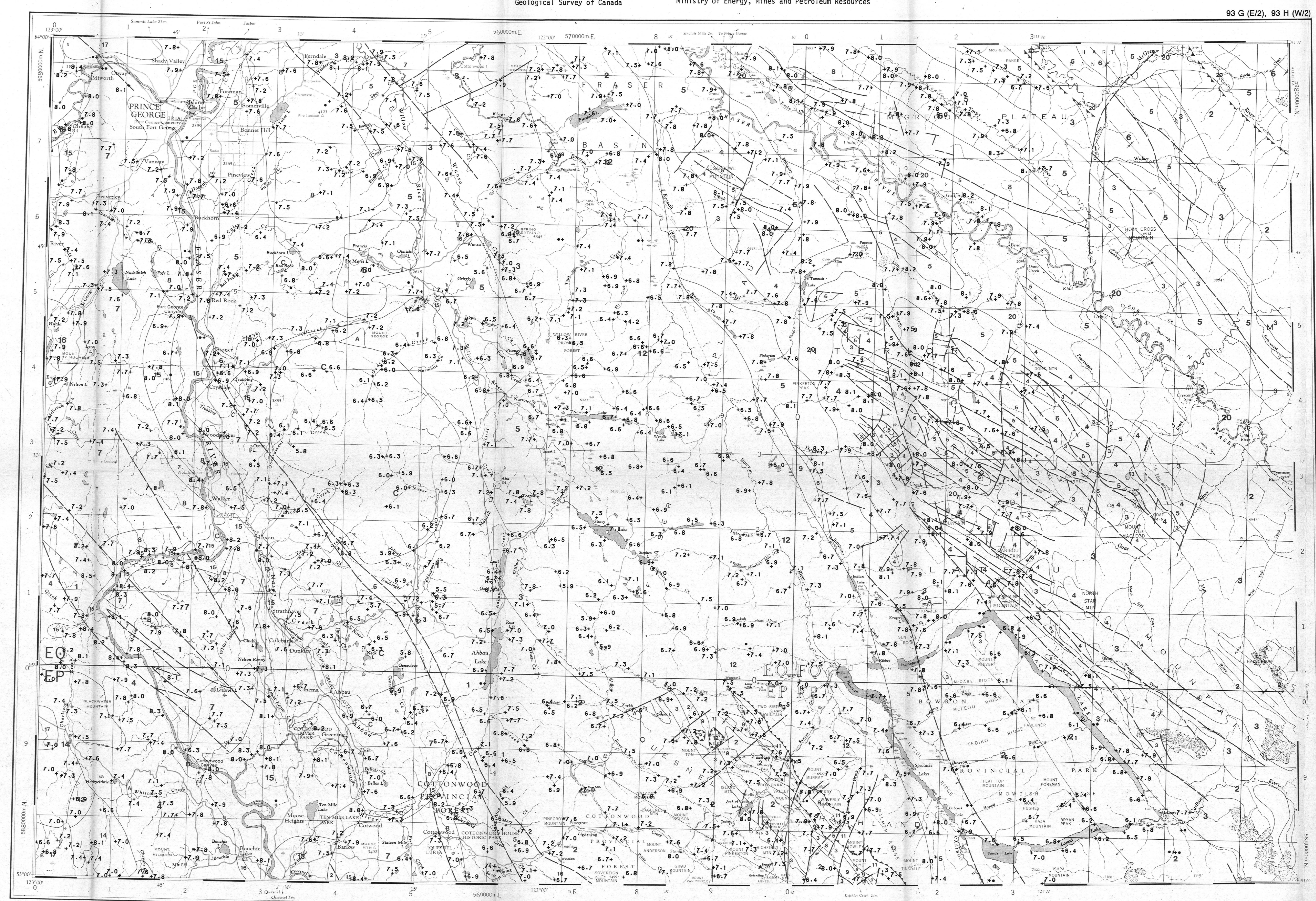
Copies of map material and listings of field observations and analytical data, from which the material was prepared, may be available at users expense by application to:

K.G. Campbell Corporation  
880 Wellington St.  
Box 235  
Ottawa, Ontario  
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The data are also available in digital form.  
For further information please contact:

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Canada  
Department of Energy, Mines and Resources  
Geological Survey of Canada  
Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources



**pH in water**  
GSC OPEN FILE 1107

Unit from maps published at the same scale by the Surveys and Mapping Branch in 1969, 1970

Scale 1:250 000

Mean magnetic declination 1985, 27°34' West, decreasing 9.3' annually. Readings vary from 26°41' in the SW corner to 28°27' in the NE corner of the map area

Elevation in feet above mean sea level

UNIT FROM MAPS PUBLISHED AT THE SAME SCALE BY THE SURVEYS AND MAPPING BRANCH IN 1969, 1970

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

Scale 1:250 000

UNIT FROM MAPS PUBLISHED AT THE SAME SCALE BY THE SURVEYS AND MAPPING BRANCH IN 1969, 1970

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

**pH in water**  
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 (4) TILL, GRAVEL, SAND, SILT, ALLUVIUM
- CRETACEOUS OR TERTIARY**
- UPPER CRETACEOUS OR PALEOCENE
- [19] ISLANDS 41 BORDEN RIVER COAL-BEDS, CONGLOMERATE, BRECCIA, SANDSTONE, SHALE, COAL
- UPPER JURASSIC AND LOWER CRETACEOUS**
- [18] ISLANDS 39 MARGARIVIA FORMATION, SANDSTONE, SILTY SHALE, SILTSTONE
- JURASSIC**
- LOWER TO UPPER JURASSIC
- [7] ISLANDS 39 SPYAY RIVER GROUP, SHALE, SILTY SHALE, SILTSTONE
- TRIASSIC**
- UPPER TRIASSIC
- [16] ISLANDS 39 SPYAY RIVER GROUP, WHITEHORSE FORMATION, LIMESTONE AND DOLOMITE
- MIDDLE AND UPPER TRIASSIC
- [15] ISLANDS 39 SPYAY RIVER GROUP, WHITEHORSE FORMATION, LIMESTONE AND DOLOMITE
- LOWER AND MIDDLE TRIASSIC
- [14] ISLANDS 39 SLEDE MOUNTAIN FORMATION, SANDSTONE AND SILTY LIMESTONE
- MISSISSIPPIAN AND PERMIAN**
- [13] ISLANDS 39 KUNDA GROUP, ISHEL GROUP, BANFF FORMATION, LIMESTONE, SANDSTONE, LIMY SHALE, DOLOMITE, CHERT
- MISSISSIPPIAN**
- LOWER MISSISSIPPIAN AND/ OR YOUNGER
- [12] ISLANDS 39 SLEDE MOUNTAIN GROUP, JANTER FORMATION, FLOW BASALT, BRECCIA, TUFF, MINOR DIORITE AND GABBRO, CHERT, ARGILLITE, LITHIC SANDSTONE
- LOWER MISSISSIPPIAN AND/ OR OLDER
- [11] ISLANDS 39 BUYET FORMATION, GREENBERY FORMATION, CONGLOMERATE, ARGILLITE, LITHIC SANDSTONE, CRINOIDAL LIMESTONE
- DEVONIAN**
- UPPER AND MIDDLE DEVONIAN
- [10] ISLANDS 39 FALLSBERG, SOUTHERN ALEXO, FREDRICK MOUNT, FLUME FORMATIONS, LIMESTONE, SHALE, SANDSTONE, SILTSTONE
- LOWER DEVONIAN AND YOUNGER
- [9] ISLANDS 39 BLACK STUART FORMATION, BASALT, CHERT, CHERT BRECCIA, DOLOMITE, BRECCIA, UPPER UNIT CHERTY ARGILLITE, PHYLITE, SANDY LIMESTONE
- SILURIAN**
- LOWER SILURIAN
- [8] ISLANDS 39 MONZA FORMATION, ALL OR IN PART DOLOMITE, LIMESTONE, QUARTZITE, SHALE, GREENSTONE, FLOES AND BELLS
- ORDOVICIAN**
- LOWER AND MIDDLE ORDOVICIAN
- [7] ISLANDS 39 BLACK STUART FORMATION, SANDSTONE, SHALE, QUARTZITE
- CAMBRIAN**
- ISLANDS 39 LYAK, DOME CREEK, ARCTOMYS, WATERFLOE, NOKA-ADOLPHE, TATE-CHETANG, TITANUM FORMATIONS, SHALE, SILTY LIMESTONE, DOLOMITE, SANDSTONE, SILTSTONE, ARGILLITE, PHYLITE
- LOWER CAMBRIAN AND HADRYNIAN
- [5] ISLANDS 39 MANTO, MURAL, MUDAS, MARGARIVIA, YANKEE PEAK FORMATIONS, QUARTZITE, LIMESTONE, SHALE, SILTSTONE, PHYLITE, LIMESTONE, CONGLOMERATE
- HADRYNIAN**
- [4] ISLANDS 39 YANKEE BELLE, CUNNINGHAM FORMATIONS, SHALE, LIMESTONE, SILTSTONE, DOLOMITE, PHYLITE
- [3] ISLANDS 39 MLETTE GROUP, ISAC FORMATION, PHYLITE, ARGILLITE, SCHIST, SANDSTONE, LIMESTONE, CONGLOMERATE
- [2] ISLANDS 39 KAZA GROUP, SAWDASH FORMATION, MIDDLE MLETTE GROUP, FELDSPATHIC SANDSTONE, GRANULITE, CONGLOMERATE, SILTSTONE, ARGILLITE, PHYLITE, SCHIST, LIMESTONE, MARBLE
- [1] ISLANDS 39 LOWER MLETTE GROUP, ARGILLITE, PHYLITE, SANDSTONE, LIMESTONE
- INTRUSIVE ROCKS**
- MISSISSIPPIAN OR YOUNGER
- [A] ISLANDS 39 SERPENTINITE

**SYMBOLS**

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FAULT (DOT ON DOWNSIDE SIDE): MAPPED, ASSUMED

THRUST FAULT (TEETH ON HANGINGWALL): MAPPED, ASSUMED

ANTICLINAL AXIS

SYNCLINAL AXIS

STREAM SAMPLE SITE

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Generalized geology after Geological Survey of Canada, Map 155A to accompany Paper 72-35, Geology of Middle and Lower British Columbia, by R. B. Campbell, E. W. Mackenzie, and F. C. Young, Geological Survey of Canada, Ottawa, 1970, scale 1:500 000, and Geological Survey of Canada Map 155A, Terrace 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 correct catchment basin rock type for purposes of geochemical data.

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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:

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

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