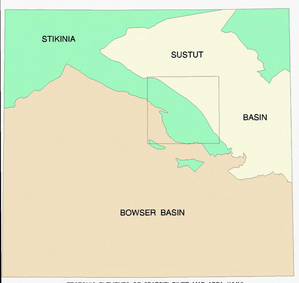

TECTONIC ELEMENTS OF SPATSIZI RIVER MAP AREA (104H)
AND LOCATION OF 104H/10

REFERENCE MAP FOR 104H/10

Sources of information for this compilation are geological mapping by:
1. Thorkelson 1986, 1987; 2. Evenchick 1985, 1986, 1988 (with P.S. Mustard), 1989; 3. Gabrielse and Tipper 1979, 1981, 1983 (1984); 4. Thomson et al. (1986); 5. Eisbacher (1974). Dates in brackets are years of publications. Other dates are years of fieldwork from which fieldnotes are the source of information.

Previous geological maps of the region are by E.F. Roots (Geological Survey of Canada, 1957), G. Eisbacher (1974), H. Gabrielse and H.W. Tipper (1984), R.C. Thompson et al. (1986) and D.J. Thorkelson (1992).

Geology of the surrounding region (104H) and descriptive notes are given by Evenchick and Thorkelson (1993).

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Eisbacher, G.H.
1974: Sedimentary history and tectonic evolution of the Sustut and Sifton basins, north-central British Columbia; Geological Survey of Canada, Paper 73-31, 57 p.

Evenchick, C.A. and Thorkelson, D.J.
1993: Geology, Spatsizi River, British Columbia (104H); Geological Survey of Canada, Open File 2719, scale 1:250,000.

Gabrielse, H. and Tipper, H.W.
1984: Bedrock geology of Spatsizi map area (104H); Geological Survey of Canada, Open File 1005.

Geological Survey of Canada
1957: Stikine River area, Cassiar District, British Columbia; Geological Survey of Canada, Map 9-1957.

Thomson, R.C., Smith, P.L., and Tipper, H.W.
1986: Lower to Middle Jurassic (Pliensbachian to Bajocian) stratigraphy of the northern Spatsizi area, north-central British Columbia; Canadian Journal of Earth Sciences, v. 23, p. 1963-1973.

Thorkelson, D.J.
1992: Volcanic and tectonic evolution of the Hazelton Group in Spatsizi River (104H) map area, north-central British Columbia; unpublished PhD thesis, Carleton University, Ottawa, Canada.

Copies of this map may be obtained
from the Geological Survey of Canada
601 Booth Street, Ottawa, Ontario K1A 0E8
3303-33rd Street N.W., Calgary, Alberta T2L 2A7
100 West Pender Street, Vancouver, B.C. V6B 1R8

LOCATION MAP

OPEN FILE 2961

GEOLOGY

COLD FISH LAKE

BRITISH COLUMBIA

Scale 1:50 000 - Échelle 1/50 000

Kilometres 1 0 1 2 3 4 Kilometres

Transverse Mercator Projection
Projection transverse de Mercator

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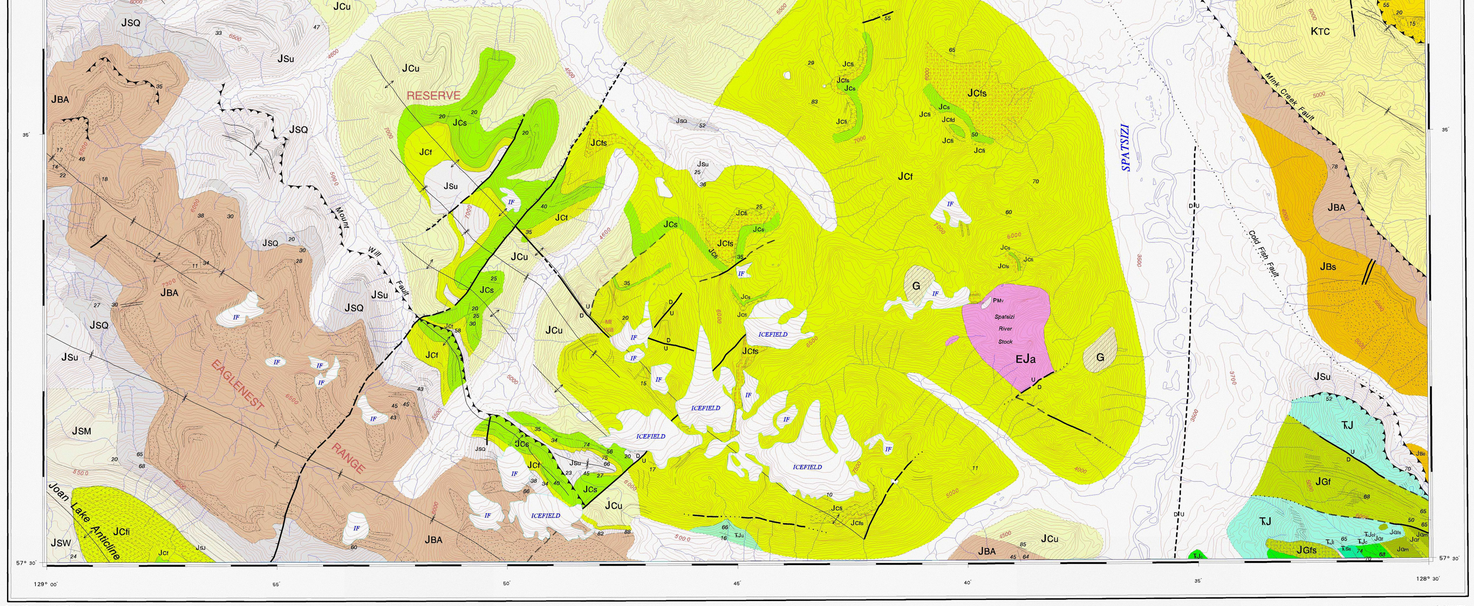
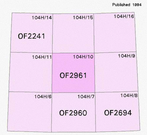


Published 1994



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

CENOZOIC

Q — *Glacial till, alluvium*

TERTIARY
PLIOCENE

PMv — *MAITLAND VOLCANICS: Olivine basalt necks and flows (columnar, and rare pillows and breccia), 5.7 to 4.9 Ma (K-Ar)*

MESOZOIC

CRETACEOUS
MID TO UPPER CRETACEOUS
SUSTUT GROUP (KTC - KBP)
CAMPANIAN AND MAASTRICTIAN

KBP — *BROTHERS PEAK FORMATION: sandstone, siltstone, conglomerate and tuff*

APTIAN OR ALBIAN TO SANTONIAN

KTC — *TANGO CREEK FORMATION: micaceous sandstone, siltstone, mudstone and minor quartz grit and pebble conglomerate*

JURASSIC
MIDDLE TO UPPER JURASSIC
BOWSER LAKE GROUP (JBA, JBs, JBdr)

JBdr — *Rusty weathering chert pebble conglomerate, with lesser sandstone, siltstone (deltaic facies)*

JBs — *Sandstone sheets and siltstone, minor conglomerate, marine fossils (shelf facies)*

JBu — *undivided Bowser Lake Group*

JBA — *ASHMAN FORMATION: siltstone, chert pebble conglomerate, sandstone, orange weathering claystone beds in siltstone, (slope and submarine canyon facies)*

LOWER AND MIDDLE JURASSIC
HAZELTON GROUP (JS, JC, JG)
PLIENSBACHIAN TO BAJOCIAN
SPATSIZI FORMATION (JSQ, JSM, JSW, JSJ, JSu)

JSQ — *QUOCK MEMBER: siliceous, well bedded, tuffaceous(?) siltstone, siltstone, limy siltstone, black, cream, rusty and pink weathering*

JSM — *MELISSON MEMBER: siliceous and calcareous siltstone and fine grained sandstone*

JSu — *undivided Spatsizi Formation*

JSW — *WOLF DEN MEMBER: shale, dark grey to black weathering, with minor calcareous concretionary beds*

JSJ — *JOAN MEMBER: siltstone, with minor mudstone, limestone, and local basal conglomerate*

LOWER JURASSIC
LOWER PLIENSBACHIAN
COLD FISH VOLCANICS (JCs, JCf, JCm, JCe, JCfs, JCl)

JCs — *Subaerial mafic lava flows interbedded with felsic airfall tuff and nonwelded ignimbrite, minor felsic sills, welded ignimbrite, conglomerate, sandstone, shale and subaqueous mafic lava*

JCm — *Marine mafic lava, minor sandstone, shale, limestone, tuff and subaerial mafic lava*

JCf — *Felsic volcanic rocks including sills, dykes, welded and nonwelded ignimbrite, airfall tuff, breccia, and lava, minor mafic lava and epiclastic rocks. JCfi welded ignimbrite; minor nonwelded ignimbrite and felsic sills. JCfs felsic sills; minor felsic lava and ignimbrite. JCfd felsic dykes*

JCu — *undivided Cold Fish Volcanics*

JCe — *Epiclastic and bioclastic rocks: lahar, breccia, conglomerate, sandstone, siltstone, shale and limestone, minor tuff and lava. JCes shale, siltstone and limestone*

JCl — *Limestone, minor siltstone and shale*

HETTANGIAN AND/OR LOWER SINEMURIAN
GRIFFITH CREEK VOLCANICS (JGm, JGf)

JGm — *Mafic lava flows mainly with phenocrysts of plagioclase and augite or hornblende, minor welded ignimbrite and felsic sills, some hosting grains of feldspar, biotite, quartz or hornblende*

JGf — *Felsic to intermediate sills, ignimbrite and airfall tuff, some units rich in plagioclase, biotite, hornblende or quartz, minor epiclastic rocks and mafic lava. JGfs felsic to intermediate sills, biotite phyric*

EARLY JURASSIC
SPATSIZI RIVER STOCK

EJa — *Fine grained alkali feldspar granite, 190.0 +/- 7.1 Ma (UPb)*

UPPER TRIASSIC TO LOWER JURASSIC
UPPER JURASSIC TO HETTANGIAN AND/OR LOWER SINEMURIAN

TJc — *Conglomerate, sandstone, shale, mafic to intermediate volcanic breccia, and olistostrome. Conglomerate clasts are mainly hornblende and plagioclase porphyry andesite, but include augite phyric mafic lava, and other volcanic rocks, and felsic to intermediate granitoid. TJcl conglomerate containing abundant clasts of Norian limestone, and varicoloured chert. Older than Griffith Creek volcanics*

TJu — *undivided TJc, TJe and JS, Sitlovi Group, TJu, and Griffith Creek volcanics*

TJl — *Light grey micrite*

TRIASSIC
UPPER TRIASSIC
CARNIAN(?) TO NORIAN
STUHINI GROUP (TSs, TSv)

TSs — *Mudstone, shale, sandstone and olistostrome, minor conglomerate and mafic lava*

Geological boundary (defined, approximate, assumed or inferred under Q)

Trace of individual beds from ground observation and asphoto interpretation

Fault, unknown displacement (defined, approximate, assumed or inferred under Q)

Thrust fault (defined, approximate, assumed or inferred under Q) Ornament on hanging wall side

Normal fault (defined, approximate, assumed or inferred under Q) Ornament on downthrown side

Steeply dipping fault, dip unknown (defined, approximate, assumed or inferred under Q) (U on upthrown side, D on downthrown side)

Anticline, trace of axial surface (defined, approximate or inferred under Q, overturned)

Syncline, trace of axial surface (defined, approximate or inferred under Q, overturned)

Open, inclined anticline, syncline (long arrow points in direction of dip of axial surface)

Mafic dykes

Bedding (horizontal, inclined, vertical, overturned)

Cleavage (inclined)

Gossan — G

Conglomerate

Geology by C.A. Evenchick (1985-1989), D.J. Thorkelson (1986, 1987), P.S. Mustard (1988), H. Gabrielse and H.W. Tipper (1979, 1981, 1983), R.C. Thomson (1983) and G.H. Eisbacher.

Map compilation by C.A. Evenchick and D.J. Thorkelson.

Digital base map from Geomatics Canada published at the same scale. Generalized and modified by the Geological Survey of Canada.

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario K1A 0E9.

Digital geological cartography by S. Churchill, R. Cooking, D. Dunn and C. Evenchick.

Magnetic declination 1994, 26° 26.5' East, decreasing 10.65' annually. Readings vary from 26° 33' East in the NW corner to 26° 20' East in the SE corner of the map

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Elevations in feet above mean sea level

Contour interval 100 feet

OPEN FILE
DOSSIER PUBLIC
2961
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
1994

Recommended citation:
Evenchick, C.A. and Thorkelson, D.J.
1994: Geology, Cold Fish Lake, British Columbia (104H/10); Geological Survey of Canada, Open File 2961, scale 1:50 000

Canada