MAP 2032A

**GEOLOGY** 

**TUATON LAKE** 

**BRITISH COLUMBIA** 

Scale 1:50 000/Échelle 1/50 000

Projection transverse universelle de Mercator

Système de référence géodésique nord-américain. 1927

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Universal Transverse Mercator Projection

North American Datum 1927

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LEGEND LOWER AND LOWER MIDDLE JURASSIC HAZELTON GROUP (units JHGf-JHSQ) QUATERNARY PLIENSBACHIAN TO BAJOCIAN PLEISTOCENE AND RECENT SPATSIZI FORMATION (units JHsu and JHsq) Glacial till, alluvium, and colluvium; unit designators in parentheses are the inferred QUOCK MEMBER: siliceous, well bedded, (?)tuffaceous siltstone, siltstone, and limy underlying bedrock units. siltstone; black-, cream-, rusty-, and pink-weathering. PLEISTOCENE Undivided Spatsizi Formation: siltstone, siliceous siltstone, calcareous siltstone, Basaltic intrusion (basanite); 1.30 Ma (K-Ar; Thorkelson, 1992). mudstone, fine-grained sandstone. LOWER JURASSIC HETTANGIAN CRETACEOUS GRIFFITH CREEK VOLCANICS (units JHgf and JHgm) UPPER LOWER AND UPPER CRETACEOUS Mafic lava flows, mainly with phenocrysts of plagioclase and augite or hornblende, SUSTUT GROUP (units KTC and KBP) minor welded ignimbrite and felsic sills, some hosting grains of feldspar, biotite, CAMPANIAN AND MAASTRICHTIAN quartz, or hornblende. BROTHERS PEAK FORMATION: sandstone, siltstone, conglomerate, and tuff; KBP sandstone and siltstone are cream- and grey-weathering, tuff is cream-weathering; Felsic to intermediate sills, ignimbrite, and air-fall tuff, some of the units rich in conglomerate in laterally continuous sheets is most common near base. plagioclase, biotite, hornblende, or quartz, minor epiclastic rocks and mafic lava. JHgfs: felsic to intermediate sills, biotite-phyric. APTIAN OR ALBIAN TO CAMPANIAN TANGO CREEK FORMATION: micaceous sandstone, siltstone, mudstone, and UPPER TRIASSIC TO LOWER JURASSIC KTC minor quartz grit and pebble conglomerate; sandstone is grey- and green-weathering, (?)CARNIAN AND (?)NORIAN TO HETTANGIAN AND/OR LOWER SINEMURIAN occurring as laterally continuous sheets and as lenses; siltstone and mudstone are Conglomerate, sandstone, shale, mafic to intermediate volcanic breccia, and grey-, black-, and maroon-weathering. olistostrome; conglomerate clasts are mainly hornblende and plagioclase porphyry andesite, but include augite-phyric mafic lava and other volcanic rocks and felsic to JURASSIC AND CRETACEOUS intermediate granitoid rocks; TJcl: conglomerate containing abundant clasts of Norian UPPER JURASSIC AND LOWER CRETACEOUS limestone, and varicoloured chert; older than Griffith Creek volcanics. BOWSER LAKE GROUP (units JKBu and JKBs) SKELHORNE ASSEMBLAGE (deltaic assemblage): thinly intermixed and JKBs varicoloured siltstone, sandstone, and conglomerate (with or without coal), commonly Undivided Stuhini Group, unit TJc, and Griffith Creek volcanics. arranged in coarsening- and thickening-upward cycles; common features of sandstone are parallel bedding, crossbedding, ripples, burrows, bivalve coquina, and brown-, green-, and grey-weathering; conglomerate is rusty- and grey-weathering, but constitutes a lower proportion (15–30%) of the unit than in the Eaglenest assemblage; TJI Light grey micrite. conglomerate units, up to 50 m thick, cap cycles up to 70 m thick, and tops locally have megaripples; plant and marine fossils are ubiquitous, and trace fossils including Skolithus and Diplocraterion are present, as are tree fragments several metres long. Undivided Stuhini Group, unit TJc, and Griffith Creek volcanics; may include Cold Fish Volcanics (see Evenchick and Thorkelson, 1993). Undivided Bowser Lake Group. UPPER TRIASSIC UPPER MIDDLE TO UPPER JURASSIC (?)CARNIAN TO NORIAN BOWSER LAKE GROUP (units JBT-JBE) STUHINI GROUP (units uTss and uTsv) EAGLENEST ASSEMBLAGE (deltaic assemblage): conglomerate, sandstone, Mafic lava flows, mainly aphyric to augite-phyric; minor conglomerate, sandstone, siltstone, mudstone, and rare coal, arranged in coarsening- and fining-upward cycles mudstone, limestone, and olistostrome. of mudstone to pebble or cobble conglomerate; prominently rusty-weathering and 30 to 80% conglomerate; sheets of conglomerate, up to 50 m thick, include planar beds, tabular-planar cross-stratification and trough cross-stratification, with sets locally up to tens of metres thick; sandstone is green-, brown-, and grey-weathering, and has Mudstone, shale, sandstone and olistostrome; minor conglomerate and mafic lava. planar cross-stratification and hummocky cross-stratification; sparse marine fossils, but abundant plant fossils, including silicified tree fragments. MUSKABOO CREEK ASSEMBLAGE (shelf assemblage): sandstone, siltstone, and conglomerate; primary lithofacies is sandstone, forming laterally continuous thin- to

thick-bedded sheets; less common are siltstone interbedded with sandstone, and lenses of conglomerate; sandstone is green-, brown-, and grey-weathering, thin- to thick-bedded, and locally arranged in coarsening-upward cycles; includes burrows, bivalve coquina, and other marine fossils, common ripple marks and crossbedding, and local hummocky cross-stratification; conglomerate increases in proportion and

TODAGIN ASSEMBLAGE (slope assemblage): siltstone, fine-grained sandstone, and conglomerate; mainly laminated siltstone and/or fine-grained sandstone, which is

57°28'45"N

57°28'15"N

128°16'45"W

128°07'00"W

dark grey- to black-weathering and includes thin, orange-weathering claystone beds and syndepositional faults and folds; chert-pebble conglomerate occurs as lenses;

thickness upsection.

Fault, unknown displacement (defined, approximate) .

unit Q); symbol on hanging-wall side

unit Q); symbol on downthrown side .

Anticline, trace of axial surface (defined); arrow on line indicates direction of plunge .

Bedding (inclined, vertical, overturned)

128°17'30"W

128°17'30"W

128°07'45"W

57°22'00"N -

Published 2004

104 H/9

104 H/8

104 H/1

2031A

2032A

2039A

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

2030A

2033A

2038A

104 H/7

104 H/2

Digital base map produced by vectorization of paper copy base

map from Geomatics Canada, modified by ESS Info

Mean magnetic declination 2004, 23°38'E,

decreasing 15.3' annually

Elevations in feet above mean sea level

Contour interval 100 feet

57°28'45"N -

Cleavage (inclined) Fossil location

Radiometric age (in Ma)

D on downthrown side .

Thrust fault (defined, approximate, assumed or inferred beneath

Normal fault (defined, approximate, assumed or inferred beneath

assumed or inferred beneath unit Q); U on upthrown side,

Syncline, trace of axial surface (defined, overturned, approximate overturned); arrow on line indicates direction of plunge Open, inclined syncline, trace of axial surface (approximate); long arrow points in direction of dip of axial surface

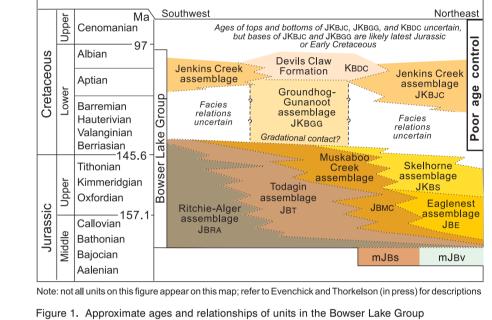
Cross-section location. The cross-sections for this map area are shown in Figure 172 of GSC Bulletin 577 (Evenchick and Thorkelson, in press)

Figure 3. Detail of areas with a high density of fossil locations

Steeply dipping fault, dip unknown (defined, approximate,

Geological boundary (defined, approximate, assumed or inferred beneath

Trace of individual beds from ground observation and airphoto interpretation



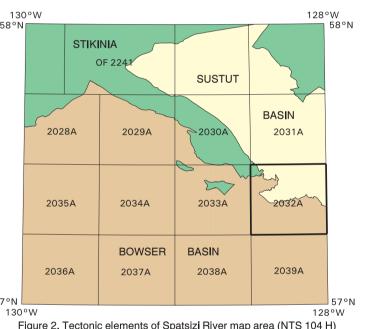
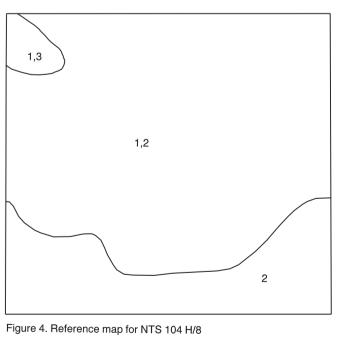


Figure 2. Tectonic elements of Spatsizi River map area (NTS 104 H) and location of NTS 104 H/8 (Map 2032A)



Sources of information are geological mapping by 1) H.W. Tipper and H. Gabrielse, 1979, 1981, 1983; 2) C.A. Evenchick, 1985–1988; and 3) D.J. Thorkelson, 1986,1987. Previous geological map of the region is by Geological Survey of Canada (1957). The northeast corner was mapped by Eisbacher (1974) in a reconnaissance of the Sustut Basin. Geology of the surrounding region (NTS 104 H) and descriptive notes are given by Evenchick and Thorkelson (in

## REFERENCES

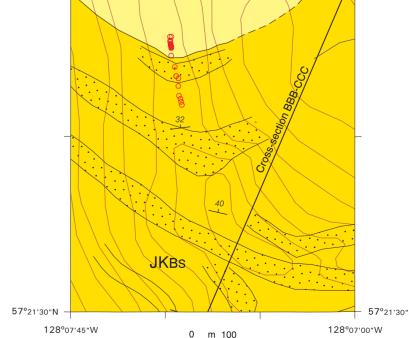
Sedimentary history and tectonic evolution of the Sustut and Sifton basins, north-central British Columbia; Geological Survey of Canada, Paper 73-31, 57 p. Evenchick, C.A. and Thorkelson, D.J.

1993: Geology, Tuaton Lake, British Columbia (104 H/8); Geological Survey of Canada, Open File 2694, scale 1:50 000. In press: Geology of the Spatsizi River map area, north-central British Columbia; Geological Survey of Canada, Bulletin 577.

Gabrielse, H. and Tipper, H.W. 1984: Bedrock geology of Spatsizi map area (104 H); Geological Survey of Canada, Open File 1005, scale 1:125 000.

Geological Survey of Canada 1957: Stikine River area, Cassiar District, British Columbia; Geological Survey of Canada, Map 9-1957, scale 1:253 440. Thorkelson, D.J.

1992: Volcanic and tectonic evolution of the Hazelton Group in Spatsizi River (104 H) map area, north-central British Columbia; Ph.D. thesis, Carleton University, Ottawa, Ontario, 299 p.



0 m 100 Inset 2

LOCATION MAP

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

101-605 Robson Street, Vancouver, B.C. V6B 5J3

Geology by C.A. Evenchick and D.J. Thorkelson

Digital geological cartography by C.L. Wagner and R. Cocking,

Earth Sciences Sector Information Division (ESS Info),

D. Dunn, D. McKee, and C. Evenchick,

Geological Survey of Canada

Any revisions or additional geological information known to the user

would be welcomed by the Geological Survey of Canada