





GEOLOGICAL SURVEY BRANCH

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GEOLOGY OF GODWIN CREEK (NTS 104N/09E)

Geology by Mitchell G. Mihalynuk, JoAnne L. Nelson, Martin de Keijzer, Richard M. Friedman, Charles F. Roots and Tom P. Gleeson Digital cartography by Parm Dhesi (Geological Survey of Canada), and Mitchell G. Mihalynuk Digital base map compiled by the Province of British Columbia, Ministry of Environment Land and Parks, modified by the Geological Survey of Canada TRIM 59E,60,69E,70,79SE,80S

Scale 1:50 000 _4 Kilometres Universal Transverse Mercator Projection North American Datum 1983 Magnetic declination 2001, 25°41.9E, decreasing 19.6 annually. Centre of the map

LEGEND

Elevations in metres above mean sea level

QUATERNARY

Tuya Basalt: olivine basalt, tuff

LATE SYN - TO POST - ACCRETIONARY INTRUSIONS

EARLY JURASSIC

EJCt

Slaughterhouse quartz diorite and tonalite; weakly foliated to non-foliated; circa 170

circa 170 Ma Polyphase intrusive body (circa 184 Ma): salmon pink syenite, quartz syenite, hornblende diorite, quartz diorite, biotite hornblende quartz monzonite and monzonite

> $Cocconino\ biotite-hornblende\ quartz\ diorite/tonalite,\ foliated,\ pre-\ to\ syntectonic?;$ circa 196 Ma.

Slaughterhouse granite; weakly foliated to non-foliated with discrete shear bands;

ATLIN COMPLEX - EXOTIC OCEANIC CRUSTAL ASSEMBLAGE

CARBONIFEROUS TO JURASSIC

BIG SALMON COMPLEX -

Permian Teslin Formation limestone, Tethyan fusulinids

Carboniferous to Permian Kedahda Formation hemipelagite: chert, argillite, slate, quartzite; wacke interbedded with chert near Teslin Fault; hornfels near plutons

PERICRATONIC SEDIMENTS AND OVERLYING ARC COMPLEX

PRE-DEVONIAN TO CARBONIFEROUS

Devonian - Mississippian Big Salmon Complex (undivided) Strongly pyritic metarhyolite, dacite, andesite tuff and minor marble; circa 335 Ma in

Marble, limestone, dolomite

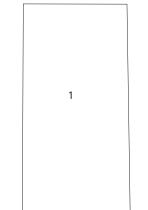
Metabasalt, tuff, tuffite; locally augite-phyric

SYMBOLS

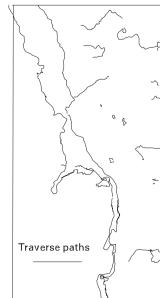
Bedding, tops known Bedding, overturned, tops known Foliation generation unknown . Cleavage foliation, inclined (1st phase, 2nd phase, 3rd phase) Cleavage foliation, vertical (1st phase) Fold axis surface Dyke: inclined, vertical Lineation (1st phase, 2nd phase, 3rd phase) Clast elongation Fold unspecified (1st phase, 2nd phase, 3rd phase, 4th phase) Crenulation cleavage/intesection lineation; fold unspecified (1st phase, 2nd phase, 3rd phase) Mineral lineation: horizontal, plunging Shear band cleavage, dextral, sinistral, top up, top down, unspecified Axial cleavage (2nd phase fold unspecified inclined, 3rd phase fold unspecified inclined, vertical) Limit of Mapping Fault: defined, approximate, assumed Topographic contour (20m interval)

Isotopic age date sample site, U-Pb zircon (age in Ma)

COMPILATION SOURCES:



RELIABILITY DIAGRAM



1. Aitken, J.D. (1959): Atlin Map-area, British Columbia (104N); Geological Survey of Canada Memoir 307, 89 pages

Sources of Isotopic Age Data ^a Mihalynuk, M.G., Nelson, J. and Friedman, R.M. (1998): Regional Geology and Mineralization of the Big Salmon Complex (104N NE and 1040 NW); *in* Geological Fieldwork 1997, *B.C.* Ministry of Employment and Investment, Paper 1998-1, pages 157-170.

b Unpublished data from Richard M. Friedman, 1998, 1999, 2000, Geochronology Lab, University of British Columbia ° Mihalynuk, M.G., Nelson, J.L., Roots, C.F., Friedman, R.M. and de Keijzer, M. (2000): Ancient Pacific Margin Part III: Regional Geology and Mineralization of the Big Salmon Complex (NTS 104N/9E,16 & 104O/12,13,14W); in Mines, Paper 2000-1, pages 27-46.

d Unpublished data from Larry M. Heaman, 2000, University of Alberta

For information on the extensive surficial deposits

1040-05

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE



104N 104O

20 km east

LOCATION MAP