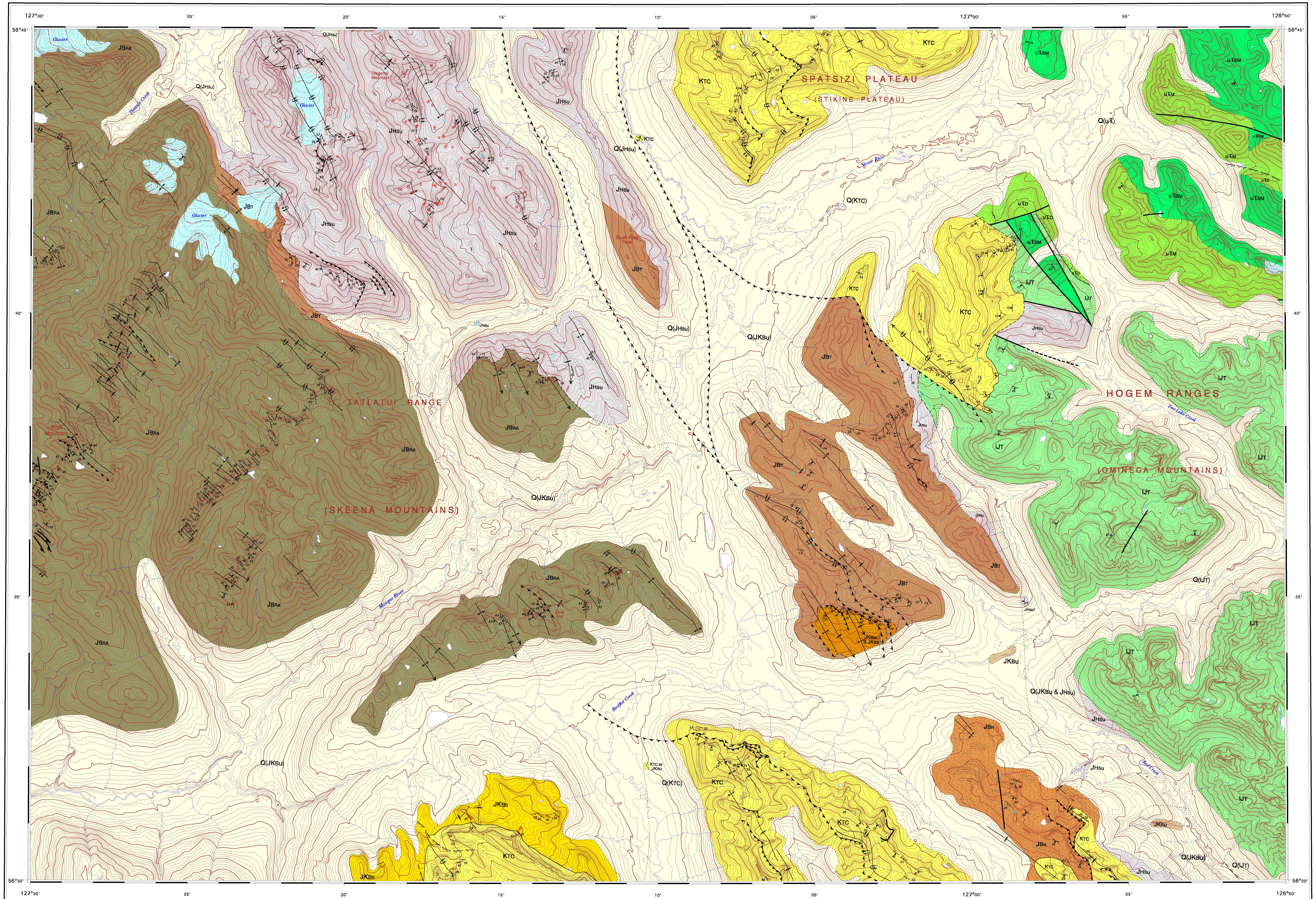
Natural Resources Canada / Ressources naturelles Canada
GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA



LEGEND

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT

Q — *Glacial till, alluvium, and colluvium; unit designators in parentheses are the inferred underlying bedrock units.*

MESOZOIC

CRETACEOUS
UPPER LOWER AND UPPER CRETACEOUS
SUSTUT GROUP
APTIAN OR ALBIAN TO CAMPANIAN

KTC — *TANGO CREEK FORMATION: micaceous sandstone, siltstone, mudstone, and minor quartz grit and pebble conglomerate; sandstone is grey- and green-weathering, occurring as laterally continuous sheets and as lenses; siltstone and mudstone are grey-, black-, and maroon-weathering.*

JURASSIC AND CRETACEOUS
UPPER JURASSIC AND LOWER CRETACEOUS
BOWSER LAKE GROUP

JKBU — *Undivided Bowser Lake Group.*

JKBS — *SKELHORNE ASSEMBLAGE (deltaic assemblage): thinly intermixed and varicoloured siltstone, sandstone, and conglomerate (with or without coal), commonly 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; conglomerate units, up to 50 m thick, cap cycles up to 70 m thick, and tops locally have megaripples; plant and marine fossils are common, and trace fossils including* Skolithus *and* Diplocraterion *are present, as are tree fragments several metres long.*

JKBMC — *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 thickness upsection.*

JURASSIC
UPPER JURASSIC
BOWSER LAKE GROUP

JBN — *NETALZUL FORMATION: feldspar-hornblende-porphyritic andesite flow, breccia, and tuff; intercalated volcaniclastic sedimentary rocks, including volcanic debris-flow conglomerate.*

JBT — *TODAGIN ASSEMBLAGE (slope assemblage): siltstone, fine-grained sandstone, and conglomerate; mainly laminated siltstone and/or fine-grained sandstone, which is dark grey- to black-weathering and includes thin, orange-weathering claystone beds and syndepositional faults and folds; chert-pebble conglomerate occurs as lenses; marine fossils. Locally contains sections characteristic of* JBRA *not separated at this scale of mapping.*

JBRA — *RITCHIE-ALGER ASSEMBLAGE (submarine fan assemblage): sandstone, siltstone, and rare conglomerate; approximately equal proportions of sheet-like intervals, up to 50 m thick, dominated either by siltstone, shale, and very fine-grained sandstone, or by medium-grained sandstone; siltstone and/or fine-grained sandstone is dark grey- and black-weathering, sandstone is medium- and light-grey-weathering; abundant turbidite features (e.g. Bouma cycles, flame structures, flute-and-groove casts); conglomerate includes debris-flow deposits; marine fossils. Locally contains sections characteristic of* JBT *not separated at this scale of mapping.*

MIDDLE JURASSIC
HAZELTON GROUP

JHSU — *Undivided clastic rocks of Spatsizi Formation; dominated by siltstone and shale, including siliceous well bedded tuffaceous(?) siltstone, limy siltstone, calcareous to siliceous organic shale, calcareous to siliceous siltstone, fine-grained sandstone; minor constituents are mudstone, limestone, and conglomerate.*

LOWER JURASSIC
HAZELTON GROUP

lJT — *Telkwa Formation: calcalkaline basalt, andesite, dacite and rhyolite flow, breccia, tuff, volcanic debris-flow conglomerate, conglomerate, sandstone, and siltstone.*

TRIASSIC
UPPER TRIASSIC
TAKLA GROUP

uTM — *Moosevale Formation: andesitic and basaltic volcanic conglomerate, breccia, sandstone, tuff, and argillite.*

uTD — *Dewar Formation: tuff, sandstone, argillite; minor limestone and breccia.*

uTSM — *Savage Mountain Formation: augite porphyry basalt flow, breccia, pillow basalt, tuff and interbedded bladed feldspar porphyry.*

Geological contact (defined, approximate, assumed or inferred beneath unit Q)

Trace of individual beds from ground observation and airphoto interpretation

Fault, unknown displacement (defined, assumed or inferred beneath unit Q)

Fault, thrust (defined, approximate, assumed or inferred beneath unit Q); symbol on hanging-wall side

Fault, reverse (defined, approximate); symbol on hanging-wall side

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

Syncline, trace of axial surface (defined, overturned); arrow on line indicates direction of plunge

Landslide scarp

Conglomerate

Bedding (upright, top unknown, vertical, horizontal, overturned) 20 15 10

Cleavage (inclined) 35

Fold axis (z-fold) 11

Intersection of bedding and cleavage (inclined) 30

Fossil locality

Outcrop examined; bedding attitude not determined (selected locations shown)

DESCRIPTIVE NOTES

This map overlaps the boundaries of volcanic arc rocks of Stikinia, the clastic Bowser Basin, and the clastic Sustut Basin. The primary intent of the map is to show the distribution and stratigraphic and structural relationships of Bowser and Sustut basin rocks. The Triassic to Early Jurassic rocks of Stikinia (from Richards, 1976) are included to provide context and illustrate basement structures. Descriptions and interpretations of Bowser and Sustut basin rocks may be found in Eisbacher (1974), Jakobs (1993), Evenchick *et al.* (2003), and Evenchick and Thorkelson (2005). The broader map context of these units is provided by Evenchick *et al.* (2006). Information on fossils collected from Bowser and Sustut basin strata up to 1992 is given in Evenchick *et al.* (2001).

Sources of information are mapping by C.A. Evenchick, S. Porter, and G. Jakobs in 1992; by C.A. Evenchick, F. Ferri, M. McMechan, P.S. Mustard, and T. Hadlari in 2003; and by C.A. Evenchick, P.S. Mustard, and M. McMechan in 2006. Previous mapping by Eisbacher (1974) and Richards (1976) is incorporated.

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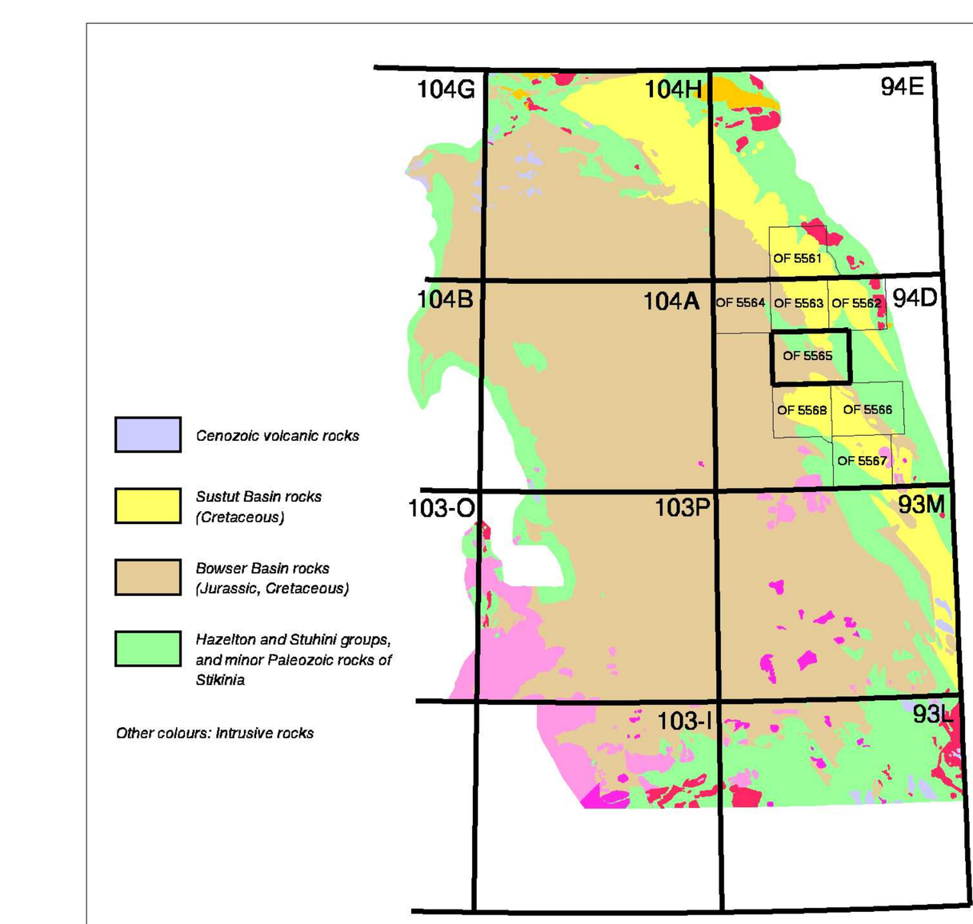
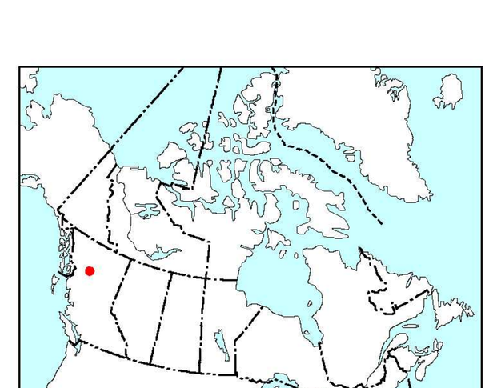


Generalized geology of Bowser and Sustut basins and location of this map



LOCATION MAP

Geology by C.A. Evenchick, S. Porter, G. Jakobs (1992), C.A. Evenchick, F. Ferri, M. McMechan, P.S. Mustard, T. Hadlari (2003), C.A. Evenchick, P.S. Mustard, M. McMechan (2006)

Digital geological cartography by C.L. Wagner, Data Dissemination Division (DDD)

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

GSC OPEN FILE 5565

BCMEM PETROLEUM GEOLOGY OPEN FILE 2007-5

GEOLOGY

SOUTH PASS PEAK AND WESTERN MOOSEVALE CREEK

BRITISH COLUMBIA

Scale 1:50 000/Échelle 1/50 000

kilometres 1 0 1 2 3 4 kilomètres

Universal Transverse Mercator Projection
North American Datum 1927

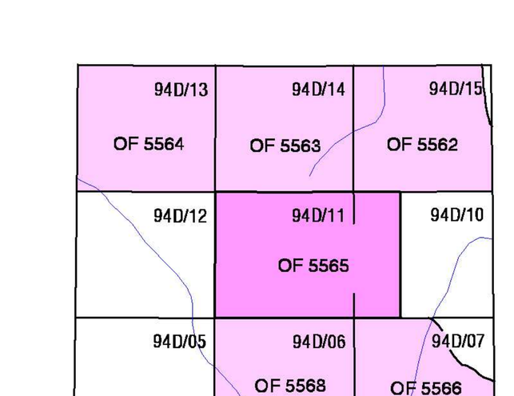
Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1927

Digital base map from data compiled by Geomatics Canada, converted to NAD27 by DDD

Mean magnetic declination 2007, 21°45'E, decreasing 18.9' annually

Elevations in metres above mean sea level

Contour interval 20 metres



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

OPEN FILE
DOSSIER PUBLIC
5565
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2007

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Evenchick, C.A., Ferri, F., McMechan, M.E., Mustard, P.S., Hadlari, T., Jakobs, G., and Porter, S.
2007: Geology, South Pass Peak and western Moosevale Creek, British Columbia; Geological Survey of Canada, Open File 5565; BC Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Open File 2007-5, scale 1:50 000.

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