Energy, Mines and Resources Canada
Énergie, Mines et Ressources Canada

Geological Survey of Canada
Commission géologique du Canada

LEGEND

Formal names capitalized

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT
- *Thick drift; alluvium; glaciofluvial and lacustrine deposits, till, colluvium, landslides*
- PRv — *"Valley basalt"; basaltic flows*

TERTIARY
MIOCENE AND PLIOCENE
- MPv — *"Plateau basalt"; basalt, olivine basalt; minor tuff*
- MPSv — *SKAGIT FORMATION: felsic, intermediate pyroclastics*

MIOCENE
- Mgd — *Granodiorite (MOUNT BARR BATHOLITH)*

LATE OLIGOCENE TO EARLY MIOCENE
- OMCv — *COQUIHALLA FORMATION: intermediate, felsic pyroclastics and flows*

OLIGOCENE
- Ogd — *Granodiorite (CHILLIWACK BATHOLITH)*

EOCENE
- Egd — *Granodiorite (NEEDLE PEAK, MOUNT OUTRAN PLUTONS)*

PRINCETON GROUP
- Epv — *Intermediate flows featuring characteristic hornblende needles, local mafic and felsic flows, volcaniclastics*
- Es — *Sandstone, conglomerate, argillite (includes ALLENBY FORMATION of PRINCETON GROUP)*

EARLY TERTIARY
- eTgd(i) — *Intrusions of granodioritic (gd) and intermediate (i) composition*

CRETACEOUS AND/OR TERTIARY
- KTc — *CUSTER GNEISS: pegmatitic granite gneiss; pelitic schist and amphibolite, minor marble and ultramafic rocks, probably derived mainly from lower Mesozoic and possibly Paleozoic and (?) Precambrian rocks, and metamorphosed in Late Cretaceous and early Tertiary time*
- Ms — *Garnet-biotite, staurolite, kyanite and sillimanite schist (in part, SETTLER SCHIST), local amphibolite, minor ultramafic rock and siliceous schist; south of Fraser River includes greenschist-grade sandstone, pelite and broken formation; metamorphosed in Cretaceous*
- MSL — *SLOLLICUN SCHIST: mainly greenschist-grade, mafic to intermediate volcanics, phyllite, minor volcanic- and carbonate-clast conglomerate; metamorphosed in Cretaceous*

CRETACEOUS
LATE CRETACEOUS
- lKgd,qm — *Granodiorite (gd), quartz monzonite (qm) (SCUZZY PLUTON)*

MIDDLE AND LATE CRETACEOUS
- mKg — *Mainly granite, in part miarolitic, locally porphyritic and locally fine grained (VERDE CREEK, CATHEDRAL LAKE, SUMMERS CREEK PLUTONS)*
- KSBf — *Felsic intrusions, probably sub-volcanic equivalents of SPENCES BRIDGE GROUP*

SPENCES BRIDGE GROUP
- KSB — *Intermediate, locally felsic and mafic volcanics, sandstone, shale, conglomerate*
- KSBSv — *SPIUS CREEK FORMATION of SPENCES BRIDGE GROUP: mafic volcanics*
- Ks — *Chert-grain sandstone and conglomerate*

LATE EARLY, EARLY LATE CRETACEOUS
PASAYTEN GROUP
- KPw,v — *(a) undifferentiated sandstone, conglomerate, argillite; (b) "Winthrop facies": (Pw) of PASAYTEN GROUP, arkose, conglomerate, argillite and minor red beds and tuff; (c); "Virginian Ridge facies" (Pv) of PASAYTEN GROUP, chert-grain sandstone, argillite): as mapped, Pasayten lies east of Chuwanten Fault, but is probably a non-marine facies equivalent of the upper part of the JACKASS MOUNTAIN GROUP*

EARLY AND MIDDLE CRETACEOUS
JACKASS MOUNTAIN GROUP
- Kj — *Sandstone, argillite, conglomerate; lies west of Chuwanten Fault; marine and non-marine; upper part is probably a facies equivalent of PASAYTEN GROUP*
- Kqd — *Quartz diorite (qd), diorite (d), granodiorite (gd), minor ultramafic rock (SPUZZUM PLUTON); local gneissic phases*
- Kgn — *Felsic and mafic gneiss (Breakenridge gneiss)*

JURASSIC(?) AND CRETACEOUS
- JKB — *BROKENBACK HILL FORMATION: intermediate pyroclastics and flows*
- JKPK — *PENINSULA FORMATION: sandstone, conglomerate; gradational upwards into BROKENBACK HILL FORMATION*

LATE JURASSIC AND EARLY CRETACEOUS
- JKgd — *Granodiorite and gneiss (EAGLE PLUTONIC COMPLEX)*
- JKd — *Diorite and amphibolite (EAGLE PLUTONIC COMPLEX)*
- JKg — *Muscovite-biotite granite and pegmatite (EAGLE PLUTONIC COMPLEX)*

LATE JURASSIC
- JLs — *Sandstone, conglomerate, argillite ("Thunder Lake sequence" of Manning Park area)*
- JK — *KENT FORMATION: conglomerate, sandstone, argillite*
- lJg — *Granite and granodiorite; in many places features pink feldspar megacrysts (OSPREY LAKE BATHOLITH)*
- JLb — *BILLHOOK CREEK FORMATION: intermediate volcaniclastics*

MIDDLE AND LATE JURASSIC
- JM — *MYSTERIOUS CREEK FORMATION: argillite, tuff*

EARLY AND MIDDLE JURASSIC
- JH — *HARRISON LAKE FORMATION: intermediate, locally felsic flows and pyroclastics; local argillite, conglomerate*

LADNER GROUP
- JL — *Argillite, slate, siltstone, tuff; as mapped, includes minor amounts of Upper Jurassic sandstone and conglomerate, possibly correlative with "Thunder Lake sequence"*
- JD — *DEWDNEY CREEK FORMATION of LADNER GROUP: sandstone, argillite; local mafic to intermediate volcanics*

MESOZOIC

TRIASSIC AND/OR JURASSIC
LATE TRIASSIC AND/OR EARLY JURASSIC
- TJgd — *Granodiorite (gd) (ALLISON LAKE, BROMLEY, CAHILL CREEK PLUTONS, part of MOUNT LYTTON COMPLEX)*
- TJd,gd — *Small dioritic plutons in NICOLA GROUP; diorite and amphibolite of MOUNT LYTTON COMPLEX: dioritic HEDLEY INTRUSIONS*
- TJs,d,gd,u — *Alkaline intrusions; syenite (s), diorite (d) (COPPER MOUNTAIN STOCK); syenidiorite (sd), gabbro (gb) and ultramafic rock (u) (TULAMEEN COMPLEX)*
- TJC — *CULTUS FORMATION: argillite, sandstone, minor carbonate*

LATE TRIASSIC
NICOLA GROUP
- TNv — *Volcanics, undifferentiated mafic to felsic volcanics and minor argillite*
- TNw — *Western volcanic facies of NICOLA GROUP; felsic to intermediate pyroclastics, argillite, local carbonate*
- TNc — *Central volcanic facies of NICOLA GROUP; intermediate, feldspar and feldspar augite porphyry pyroclastics and flows*
- TNe — *Eastern volcanic facies of NICOLA GROUP; mafic, augite and hornblende porphyry pyroclastics and flows*
- TNs — *Sedimentary facies of NICOLA GROUP; argillite, sandstone, tuff and local mainly carbonate clast breccia and conglomerate*
- TNm — *Amphibolite, foliated diorite, mylonite and chlorite schist, and minor marble derived from NICOLA GROUP*

TRIASSIC
- TCC — *CAMP COVE FORMATION: siliceous argillite, mafic volcanics*
- TSP — *SPIDER PEAK FORMATION: mafic volcanics*
- Gneiss — *Granite-gneiss of Hornet Creek*

PALEOZOIC AND/OR MESOZOIC
- PMc — *Carbonate in MOUNT LYTTON COMPLEX*
- PMC — *Cogburn schist; meta-chert, pelite, amphibolite, marble, ultramafic rock; possible correlative of HOZAMEEN/BRIDGE RIVER COMPLEXES: metamorphosed in Cretaceous*
- PMu — *Ultramafic rock, local gabbro*

PERMIAN TO JURASSIC
HOZAMEEN COMPLEX (PJH–PJHv)
- PJH — *Undifferentiated, chert, pelite, mafic volcanics, minor limestone, gabbro and ultramafic rock*
- PJHv — *Mafic volcanics*

BRIDGE RIVER COMPLEX
- PJBR — *Siliceous and chlorite schist, phyllite; correlative with HOZAMEEN COMPLEX but west of Fraser River*
- PJu — *Ultramafic rock and local gabbro, associated with HOZAMEEN and BRIDGE RIVER COMPLEXES*

ORDOVICIAN TO TRIASSIC
APEX MOUNTAIN COMPLEX
- OTsv — *Argillite, chert, mafic volcanics, minor carbonate and ultramafic rock (includes BRADSHAW, INDEPENDENCE, OLD TOM and SHOEMAKER FORMATIONS)*

PERMIAN
VEDDER COMPLEX
- Amphibolite — *Amphibolite, gneiss, minor ultramafic rock*

DEVONIAN TO PERMIAN
CHILLIWACK GROUP
- DPc — *Undifferentiated pelite, sandstone, minor conglomerate, mafic and felsic volcanics; Permian carbonate (Pc); Pennsylvanian carbonate (Pc)*

PALEOZOIC AND PROTEROZOIC

YELLOW ASTER COMPLEX
- PPY — *Metadiorite and gabbro (includes BAIRD DIORITE on Old Settler Mountain)*

- *Area of outcrop*
- *Geological boundary (defined, approximate, assumed)*
- *Bedding, tops known (inclined, vertical)*
- *Schistosity, gneissosity, cleavage foliation (inclined, vertical)*
- *Lineation, axis of minor fold, mineral/clast elongation (horizontal, inclined)*
- *Major fold axis (syncline, anticline, overturned fold; arrow indicates plunge)*
- *Lineament (from airphoto)*
- *Fault (defined and approximate; assumed and extension beneath drift)*
- *Normal fault (bar indicated downthrown side)*
- *Strike-slip fault (arrow indicates relative movement)*
- *Thrust fault and "layer parallel" fault; teeth on upper plate*

Geological mapping by J.W.H. Monger, Geological Survey of Canada (1984-86). In addition, this compilation includes material from numerous sources (published reports by G.S.C. and B.C. Geological Survey, theses mainly at the University of British Columbia, and recent mapping by G.E. Ray, B.C. Geological Survey, in the Coquihalla and Hedley areas

Geological cartography by the Geological Survey of Canada

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Mean magnetic declination 1989, 20°39' East, decreasing 8.3' annually. Readings vary from 20°09'E in the SE corner to 21°08'E in the NW corner of the map

Elevations in feet above mean sea level

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Canada

MAP 41-1989
SHEET 1
GEOLOGY

HOPE

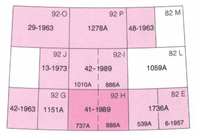
BRITISH COLUMBIA

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection

Projection transverse universelle de Mercator



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