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GEOLOGICAL SURVEY OF CANADA — COMMISSION GÉOLOGIQUE DU CANADA

TGI³ Cordillera / GC³ Cordillière

REFERENCES

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1987: Geology of the Delphine Creek area, southeastern British Columbia: Implications for the Proterozoic and Paleozoic development of the Cordilleran divergent margin. Unpublished PhD thesis, University of Calgary, Alberta, Canada, 446p.

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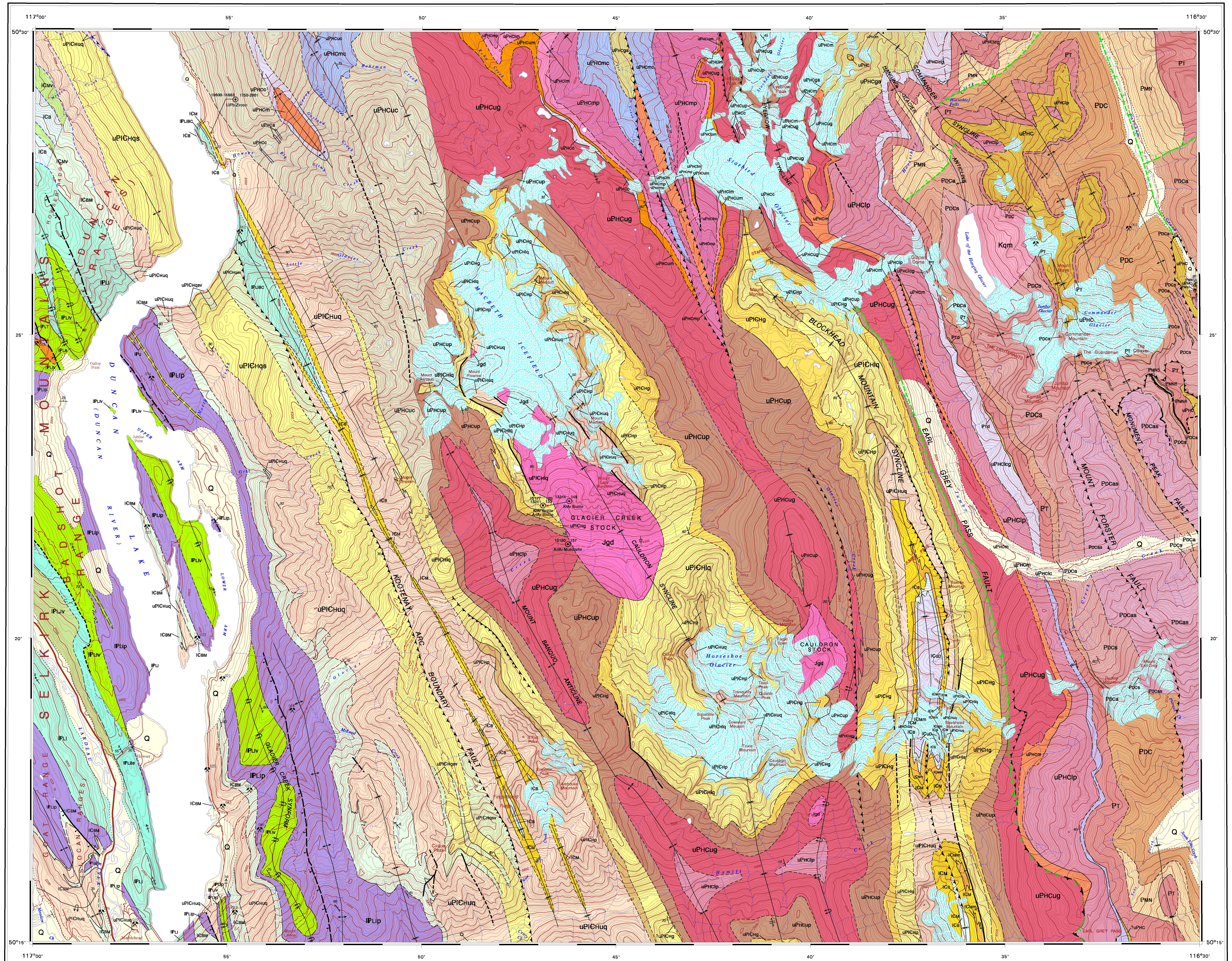
Canadian Geochronology Knowledgebase: http://gdr.nrcan.gc.ca/geochron/index_e.php

MINERAL OCCURRENCE INDEX

MINFILE NO	NAME	COMMODITY*
082KSE010	EASY M	ZN,PB
082KSE012	PRESIDENT (L.2006)	AG,ZN,CU
082KSE013	MAG	AG,PB,ZN,AU,CU
082KSE018	SURPRISE (L.6334)	AG,ZN,PB,AU,CU
082KSE019	DUNCAN (NO. 1)	ZN,PB
082KSE020	DUNCAN (NO. 2)	ZN,PB
082KSE021	DUNCAN (NO. 3)	ZN,PB
082KSE022	DUNCAN (NO. 4)	ZN,PB
082KSE023	DUNCAN (NO. 5 TO 8)	PB,ZN,CU,AG
082KSE061	SEC	WO,MO,CU
082KSE062	DUNCAN LAKE QUARTZITE	FS,DS,BS,QZ
082KSE074	DUNCAN LAKE	TC,MT
082KSE076	MARBLEHEAD MARBLE	MB,LS,DS,BS
082KSE079	HATSOFF	MO,ZN
082KSE083	ALIMONA QUARTZITE	FS,DS,BS,QZ
082KSE089	VIN	PB,ZN

* Abbreviations for commodities: AG – silver; AU – gold; BS – building stone; CU – copper; DS – dimension stone; FS – flagstone; LS – limestone; MB – marble; MO – molybdenum; MT – magnesite; PB – lead; QZ – quartzite; TC – talc; WO – tungsten; ZN – zinc

Source: British Columbia Ministry of Energy and Mines, MINFILE database available at: http://www.em.gov.bc.ca/Mining/Geolsurv/Minfile/



Compilers: R.I. Thompson and P. Dhesi

Geology by: J.T. Fyles, 1960-62; D.W. Klepacki, 1982-84; J.E. Reesor, 1953-57; M.J. Warren, 1991-94

Geological compilation by R.I. Thompson, 2002

Co-ordinated by R.I. Thompson through the auspices of the Targeted Geoscience Initiative 3 (TGI-3)

Digital cartography by P. Dhesi, Geological Survey of Canada, Pacific Division

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

OPEN FILE 6183

GEOLOGY

DUNCAN LAKE

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 1983

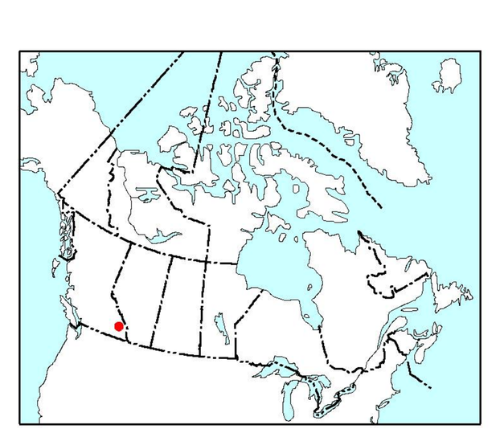
Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983

Digital base map from data compiled by Geomatics Canada, modified by the Geological Survey of Canada - Pacific Division

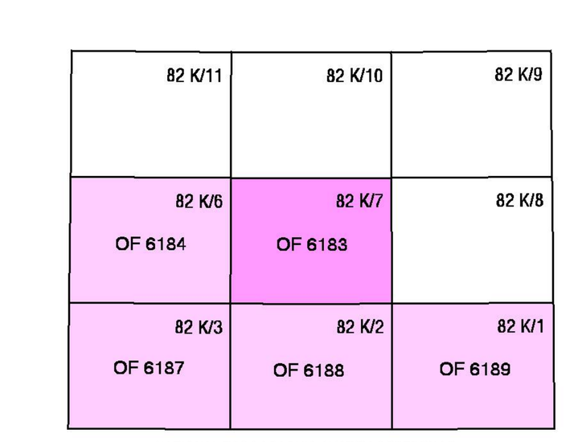
Mean magnetic declination 2009, 16°33'E, increasing 13' annually.

Elevations in feet above mean sea level
Contour interval 100 feet

Universal Transverse Mercator Grid
North American Datum 1983
Zone 11



LOCATION MAP



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

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6183
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2009

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Les dossiers publics sont des produits qui n'ont pas été soumis au processus officiel de publication de la CGC.

LEGEND

Cenozoic
QUATERNARY
PLEISTOCENE AND RECENT

- **Q** — *Unconsolidated sediments; glacial deposits, colluvium and alluvium; few if any outcrops; probable subcrop unit within parentheses*

CRETACEOUS

- **Kqm** — *Leucocratic quartz monzonite*

JURASSIC

- **Jgd** — *Quartz diorite, quartz monzonite*

LOWER CAMBRIAN TO ?LOWER ORDOVICIAN
LARDEAU GROUP
BROADVIEW FORMATION

- **IPLBs** — *Grey and green phyllitic grit and phyllite*
- **IPLJv** — *JOWETT FORMATION: Green phyllite, limy green phyllite, greenstone*
- **IPLA** — *AJAX FORMATION: Massive grey quartzite*
- **IPLT** — *TRIUNE FORMATION: Grey to black siliceous phyllite*
- **IPLI** — *INDEX FORMATION: Grey and light green phyllite; minor phyllitic limestone and quartz grit (unit 3 of Fyles, 1964)*
  - **IPLIp** — *Grey schist: Fine-grained grey mica schist and garnet mica schist (unit 3a of Fyles, 1964)*
  - **IPLIv** — *Green phyllite, limy green phyllite, chlorite-actinolite schist, garnet mica schist, greenstone (units 3d and 3c of Fyles, 1964)*
  - **IPu** — *Ultramafic to mafic dykes or sills (Intrude lower portion of Index Formation)*

LOWER CAMBRIAN

- **lЄBM** — *BADSHOT-MOHICAN FORMATION undivided: Marble, phyllite, muscovite-quartz schist*
- **lЄMv** — *Green phyllite, minor grey phyllite and limestone*

late Neoproterozoic to Lower Cambrian

- **uPlЄHuq** — *Upper quartzite: Upper part equivalent to MARSH ADAMS FORMATION (Fyles, 1964): intercalated grey and tan quartzite, micaceous quartzite and pelitic schist. Lower part equivalent to MT. GAINER FORMATION (Fyles and Eastwood, 1962; Read and Wheeler, 1976): Discontinuous white quartzite*
- **uPlЄHqs** — *Lower clastic-volcanic unit: Laterally discontinuous, intercalated green, dark grey and white quartzite, dark grey schist, feldspathic grit, and minor pebble conglomerate*
  - **uPlЄHqsv** — *Metabasite unit: Metabasite and biotite-chlorite schist, minor dolostone and grit*

STRATA EAST OF KOOTENAY ARC BOUNDARY FAULT

LARDEAU GROUP

- **IPLIBC** — *INDEX FORMATION (Birnam Creek syncline) Black phyllite and quartzite, minor dark grey marble*

LOWER CAMBRIAN

- **lЄuD** — *UPPER DONALD FORMATION (Blockhead Mountain syncline): Thinly interbedded silver muscovite schist or phyllite, light green chlorite schist or phyllite, tan calcareous or dolomitic schist*
- **lЄB** — *BADSHOT FORMATION: Tan or grey marble, dolomitic marble and minor calcareous or dolomitic schist*
- **lЄM** — *MOHICAN FORMATION: Thinly interbedded tan dolomitic schist and dolostone, minor impure quartzite, light green phyllite and quartzose schist*
  - **lЄMm** — *Sandstone member: Three laterally continuous, thickly cross-bedded coarse quartz arenite intervals, up to 10 m thick each, separated by thinner intervals of rusty-weathering schist (Blockhead Mountain syncline)*

upper Neoproterozoic to Lower Cambrian
HAMILL GROUP

- **uPlЄHuq** — *Upper quartzite: Thin to medium bedded and cross-bedded white quartzite; minor dark quartzite and pelite (lower part); interbedded pink and green quartzite and dark pelite (upper part); rusty pelite separates lower from upper parts in Blockhead Mountain syncline*
- **uPlЄHp** — *Middle Pelite: Rusty-weathering dolomitic schist, black pelite, dolostone and blue quartz pebble conglomerate, minor dolostone breccia and cobble conglomerate, cross-bedded orthoquartzite (Blockhead Mountain syncline); fine-grained rusty-weathering pelitic schist, green chlorite schist and minor dolomitic schist (Mt. Cauldron syncline)*
- **uPlЄHlq** — *Lower quartzite: Thickly bedded to massive orthoquartzite, coarse quartz arenite and grit, locally feldspathic grit and pebble conglomerate; tabular cross beds common*
- **uPlЄHg** — *Basal Grit: White and light grey tabular and trough cross-bedded quartz and arkosic sandstone, grit and conglomerate containing abundant blue and purple quartz, and minor interbedded tan dolostone or dolarenite, black pelite and dark green chlorite schist (Blockhead Mountain and Mt. Cauldron synclines); light grey micaceous quartzite, grey phyllite or schist and tan dolostone (Eyebrow syncline, 82 K/7)*

Neoproterozoic
WINDERMERE SUPERGROUP
HORSETHIEF CREEK GROUP

- **uPHC** — *Shale, argillite, sandstone and grit, (and metamorphosed equivalents); limestone; conglomerate; volcanic and metavolcanic rocks; quartzite*
  - **uPHCup** — *Upper Pelite: Thinly interbedded graded micaceous quartzite and grey slate, phyllite or muscovite schist, minor grit and pebble conglomerate, minor dolostone and coarse dolomitic sandstone toward top*
  - **uPHCug** — *Upper Grit: Thinly to thickly bedded fining- and thinning-upward succession of feldspathic grit and pebble conglomerate and interbedded pelite and micaceous quartzite*
  - **uPHCa** — *Garnet amphibolite, apparently concordant with sedimentary contacts*
  - **uPHCuc** — *Pelitic schist, calc-silicate schist, tourmaline-muscovite schist, graded quartzite, grit, calcareous grit and marble, locally intruded by felsic dykes or sills (west of Four Squatters anticline only)*
  - **uPHCc** — *Dark grey to black marble and siliceous marble or dark calcareous schist; medium grey siliceous marble or dolostone and dolomitic coarse sandstone and pebble conglomerate (stratigraphic position uncertain)*
  - **uPHCm** — *Marker Unit (Undivided): Thinly bedded tan dolomitic siltstone (upper part) and competent, homogeneous green argillite or green micaceous quartzite (lower part)*
  - **uPHCum** — *Upper Marker Unit: Rhythmically interbedded dolomitic siltstone, cream dolostone and green phyllite or slate with minor lenses of carbonate conglomerate; locally capped by black pelite and/or marble*
  - **uPHClm** — *Lower Marker Unit: Competent homogeneous green argillite, siltstone or schist and minor dolomitic siltstone*
  - **uPHCmp** — *Middle Pelite: Brown-weathering pelite, siltstone or quartz schist, minor grit*
  - **uPHCmc** — *Middle Carbonate: Thickly interbedded and laterally continuous intervals of light to medium grey marble, siliceous marble and dark grey calcareous grit; thickens to north and west*
  - **uPHClp** — *Lower Pelite: Brown-weathering thinly interbedded slate to schist, siltstone or quartzite, dolomitic siltstone or schist, minor grit lenses*
  - **uPHClc** — *Lower Carbonate: Light grey marble and dark calcareous slate or schist*
  - **uPHCga** — *Lower Clastic: Thickly interbedded, laterally discontinuous intervals of light feldspathic grit or pebble conglomerate and darker calcareous grits and marble conglomerate (eastern exposures); interbedded green and grey slate, phyllite or schist, minor grit and pebble conglomerate and siliceous marble (western exposures); proportion of argillite increases to west and north*
  - **uPHClcg** — *Lower Calcareous Clastic: Calcareous and dolomitic grit, conglomerate, coarse sandstone, slate and siliceous marble containing abundant blue and white quartz and feldspar (mappable arkosic grit and conglomerate lenses in Horsethief Creek valley shown as dotted contact)*
- **PT** — *TOBY FORMATION: Homogeneous cream dolostone*
  - **PTd** — *Diamictite, dolostone and slate; diamictite comprises well-rounded to angular pebbles to boulders primarily of quartzite, marble and dolostone in red argillaceous, grey calcareous or tan sandy matrix; upper part interbedded with and capped by feldspathic grit (Horsethief Creek valley) or by homogeneous cream dolostone (Toby and Jumbo Creeks)*
- **PMN** — *MOUNT NELSON FORMATION (Lower part only): Primarily white quartzite and tan micaceous quartzite, minor brown dolostone (included with Windermere Supergroup based on Root, 1978)*
  - **PMN6** — *Purple and pale brown argillaceous and silty dolomite; minor purple siltstone and argillite; comprises mainly argillite on Sultana Peak*
  - **PMN5** — *Alternating horizons of light gray and cream-gray cryptalgal dolomite and orange-brown argillaceous dolomite*
  - **PMN4** — *Brownish-and yellowish-orange cryptalgal laminate and domal stromatolite dolomite; purple and green siltstone and argillite*
  - **PMN1** — *White quartzite; minor dolomite sandstone, argillite, and argillaceous dolomite*

Mesoproterozoic
PURCELL SUPERGROUP

- **PDC** — *DUTCH CREEK FORMATION: Argillite, siltstone, minor dolostone*
  - **PDCa** — *Gray, black, and green argillite and siltstone-argillite couplets*
  - **PDCs** — *Pale green and brown sandstone overlain by green and gray argillite and dolomitic sandstone and capped with gray and brown dolomite; comprises mainly sandstone immediately west of F32 fault*
  - **PDCas** — *Gray and green argillite, silty argillite, argillaceuos siltstone; minor interbeds of sandstone and argillaceous dolomite*

SYMBOLS

- *Foliation (1st generation): inclined, horizontal, vertical* (45)
- *Foliation (2nd generation): inclined, horizontal, vertical* (45)
- *Bedding: inclined, horizontal, vertical* (45)
- *Layering granitoid rocks: inclined, vertical* (45)
- *Fold hinge: crenulation lineation* (45)
- *Geochronology sample (http://gdr.nrcan.gc.ca/geochron/index_e.php)* — database no., age, isotopic sys., mineral
- *Mineral Occurrence* — database no.
- *Geological boundary (from Fyles, 1964; Warren, 1997; Klepacki, 1985): defined, approximate, assumed*
- *Geological boundary (interpreted by compiler): defined, approximate, assumed*
- *Geological boundary: arbitrary*
- *Facies boundary*
- *Quaternary limit*
- *Fault, contraction (teeth indicate upthrust side): defined, approximate, assumed*
- *Fault, contraction (teeth indicate upthrust side); interpreted by compiler: defined, approximate, assumed*
- *Fault, extension (solid circles on downthrown side): defined, approximate, assumed*
- *Fault, combination Neoproterozoic to Early Paleozoic extension fault reactivated as Mesozoic contraction fault*
- *Fault, extension Neoproterozoic to Early Paleozoic (solid circles indicate downthrown side): defined, approximate, assumed*
- *Fault, unclassified: defined, approximate, assumed*
- *Anticline: upright, overturned, plunging*
- *Syncline: upright, overturned, plunging*

Recommended citation:
Thompson, R.I. and Dhesi, P. (compilers)
2009: Geology, Duncan Lake, British Columbia; Geological Survey of Canada, Open File 6183, scale 1:50 000.

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