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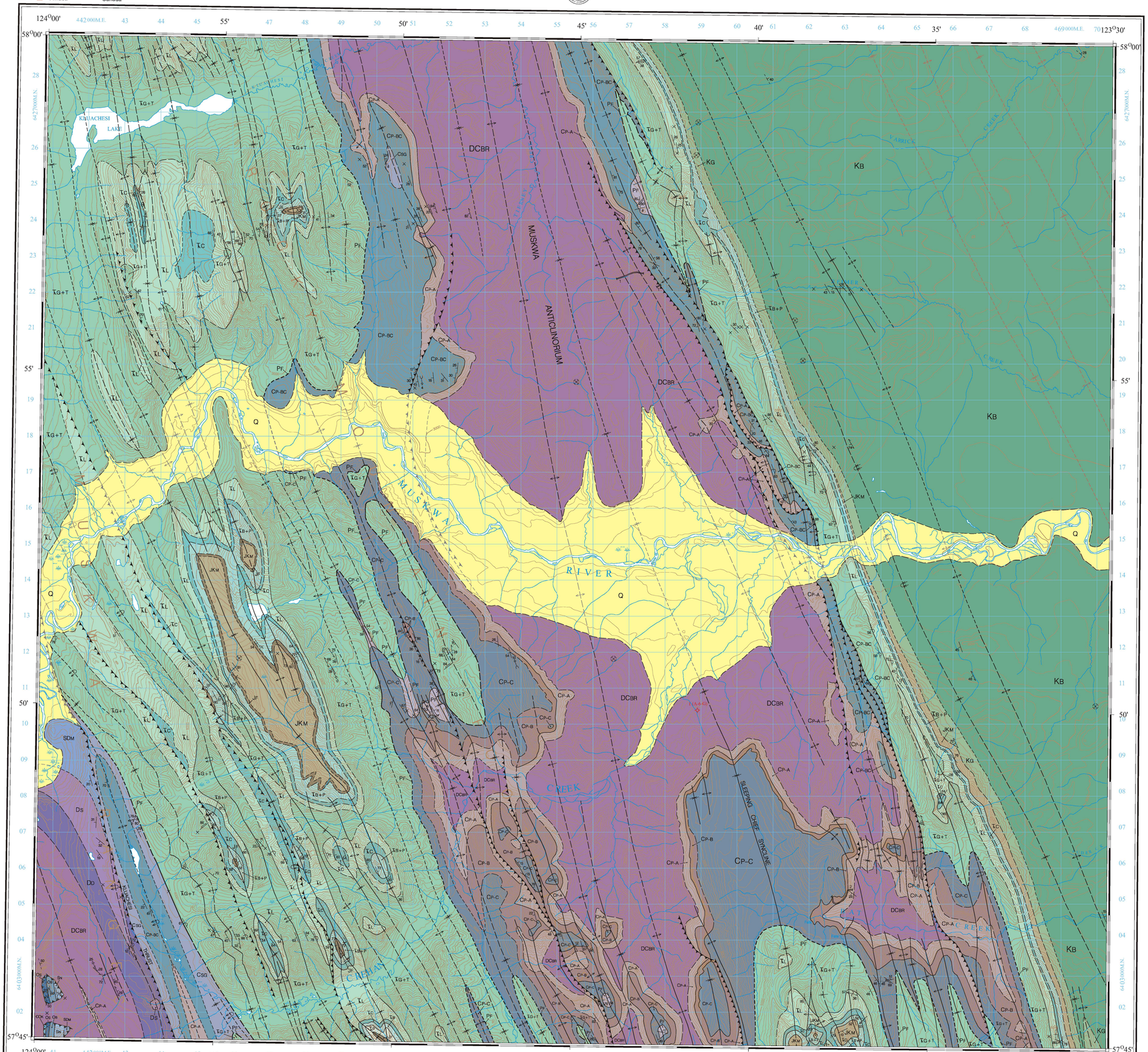
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



LEGEND

QUATERNARY

Q — FLUVIOGLACIOFLUVIAL AND FLUVIAL DEPOSITS: Unconsolidated and semi-consolidated gravel and sand; proglacial outwash terraces preserved locally on north bank of Muskwa River (Bednarski, 2000).

MESOZOIC

CRETACEOUS

LOWER CRETACEOUS

FORT ST JOHN GROUP

Kb — BUCKINGHORSE FORMATION: Dark grey to black shale, silty mudstone, minor fine-grained sandstone, and siltstone; discontinuous layers of sideritic concretions are common; the middle part of the unit contains few concretions.

BULLHEAD GROUP

Kg — GETHING FORMATION: Rusty weathering quartz arenite in thick units, interbedded with thick units of dark grey to black shale and siltstone; trace fossils and bioturbation common; minor coal; includes the underlying Cadomin Formation if present.

JURASSIC AND CRETACEOUS

MINNES GROUP

JKM — MONTEITH FORMATION: Resistant, white or grey quartz arenite; fine- to coarse-grained; minor dark grey or black shale and argillaceous quartz arenite; rare chert pebble conglomerate. Includes the underlying Fernie Formation where it is too thin to show at the map scale, and may include the overlying Gething Formation and/or Cadomin Formation.

JURASSIC

JF — FERNIE FORMATION: Medium to dark grey siltstone and shale; interbedded with light to dark grey or black sandstone, siltstone, and limestone; calcareous in lower part; concretions locally present.

TRIASSIC

SCHOOLER CREEK GROUP

TB+P — BALDONNEL AND PARDONET FORMATIONS: Undivided fossiliferous limestone of the Baldonnel and Pardonet Formations.

TP — PARDONET FORMATION: Recessive, dark grey to brownish-grey weathering, thin-bedded, fossiliferous limestone; locally argillaceous or silty; abundant Monotid bivalves are characteristic in eastern exposures; ichthyosaur bones locally preserved.

TB — BALDONNEL FORMATION: Resistant, grey, massive, fossiliferous limestone and dolostone; minor shale, siltstone, and fine-grained quartz arenite.

TC — CHARLIE LAKE FORMATION: Recessive, orange-brown to yellow weathering, calcareous or dolomitic siltstone, dolostone, and silty dolostone or limestone; minor shale, quartz arenite, and intraformational breccia.

TL — LIARD FORMATION: White, buff, and light brown weathering, thick-bedded, fine- to very fine-grained quartz arenite, interbedded with calcareous quartz arenite, siltstone, and limestone; sandstone massive to crossbedded.

DIABER GROUP

TG+T — GRAYLING AND TOAD FORMATIONS: Grey to brownish grey weathering, calcareous shale interbedded with brown weathering, silty, fine-grained limestone; shale is more calcareous in upper part and more phosphatic in lower part.

PALEOZOIC

PERMIAN

ISHBEL GROUP

PF — FANTASQUE FORMATION: Dark grey to white weathering, dark grey, well bedded, spiculitic chert; rhythmically interbedded with minor shale and siliceous siltstone; basal phosphatic breccia or sandstone; 5-20m thick.

LOWER CARBONIFEROUS

STODDART GROUP

CSG — STODDART GROUP: Includes Golata Formation: black shale and argillaceous limestone; Kiskatenaw Formation: brown weathering calcareous sandstone with abundant crossbeds, shale and limestone interbeds; Taylor Flat Formation: rhythmically bedded carbonate, argillaceous shale and marl; locally Golata, Taylor Flat or entire Group is absent.

RUNDLE GROUP

CP-BC — PROPHET FORMATION MEMBERS B AND C: Undivided chert and cherty limestone.

CP-C — PROPHET MEMBER C: Grey, cherty, skeletal limestone, rhythmically interbedded with marlstone and shale; locally abundant chert as bands, nodules, and selective silicification; proportion of chert increases up section and towards the northwest; medium-bedded, beds massive; may locally include Stoddart Group.

CP-B — PROPHET MEMBER B: Resistant, white to dark grey, bedded and nodular calcareous chert; subordinate to minor skeletal limestone, spiculite, and dark grey shale; proportion of limestone increases up section; medium- to thick-bedded; bed contacts irregular to highly undulatory.

CP-A — PROPHET MEMBER A: Dark grey to black, spiculitic chert interbedded with subordinate dark grey shale, mudstone, and cherty skeletal limestone; proportion of shale decreases up section; thin-bedded and planar laminated; bedding commonly rhythmic.

DEVONIAN AND CARBONIFEROUS

DCBR — BESA RIVER FORMATION: Medium grey to black shale and mudstone; variably calcareous, buff weathering where calcareous; rhythmically interbedded with minor buff weathering argillaceous dolostone, limestone, spiculite, and black, bedded chert that increase in proportion up section; scattered siderite nodules and pyrite lenses; includes the Exshaw Formation on the east side of the Muskwa Anticlinorium.

DEVONIAN

DD — DUNEDIN FORMATION: Medium grey to bluish-grey weathering, dark grey, fossiliferous lime mudstone and skeletal grainstone.

DS — STONE FORMATION: Very light grey weathering, thick-bedded, finely crystalline dolostone; floating quartz sand grains common; fenestrae, broken mud laminae, and stratiform breccia locally present.

SILURIAN AND DEVONIAN

SDM — MUNCHO-McCONNELL FORMATION: Light brown to yellowish-brown weathering, sandy to argillaceous dolostone overlain by medium and dark grey weathering, very thick-bedded dolostone; local thin beds of quartz arenite in upper part; rare, thin brown shale partings.

SILURIAN

SN — NONDA FORMATION: Very dark grey to black, very thick-bedded, siliceous dolostone with chert nodules and subordinate quartz arenite; high diversity and abundance of corals; stromatoporoid bioherms locally present.

ORDOVICIAN

OB — BEAVERFOOT FORMATION: Grey dolostone and limestone; dolomitization discordant to bedding; chert nodules and silicified fossil debris locally present; sandstone layers locally abundant, particularly at the base of the unit.

OS — SKOKI FORMATION: Light to medium brown and grey, thick-bedded dolostone with variable quartz sand content; commonly crossbedded; fossiliferous; locally bioturbated.

CAMBRIAN AND ORDOVICIAN

KECHIKA GROUP

COK — KECHIKA GROUP: Orange to brown weathering, thin-bedded, silty limestone with mudstone laminae and shale or slate; abundant bioturbation; chert nodules locally present.

MAP SYMBOLS

Outcrop stations

Outcrop; remote observation

Bedding (inclined, vertical, horizontal, overturned, estimated)

Crossbedding (dip direction and dip; uncorrected)

Joint (inclined)

Cleavage (inclined)

Cleavage-bedding intersection lineation

Minor fold axis

Geological contact (defined, approximate, assumed)

Anticline (defined, approximate, assumed)

Anticline (interpreted from seismic data)

Syncline (defined, approximate, assumed)

Syncline (interpreted from seismic data)

Overturned anticline (defined, approximate, assumed)

Overturned syncline (defined, approximate, assumed)

Anticlinal kink fold - (defined, approximate, assumed) (See schematic cross-section)

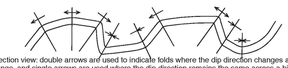
Synclinal kink fold- (defined, approximate, assumed) (See schematic cross-section)

Fault, thrust (defined, approximate, assumed)

Measured section (details listed below)

Wells (dry and abandoned)

FOLD SYMBOLOGY



Cross-section view: double arrows are used to indicate folds where the dip direction changes across the hinge, and single arrows are used where the dip direction remains the same across a hinge (Stockmal et al., 2002).

LIST OF WELLS

	UWID	FULL NAME	SPUD DATE	SURFACE LOCATION (Easting, Northing)
1	200A006G094G1300	HB PAN AM MUSKWA A-6-G	10 Jan 1960	458899, 6410388

STRATIGRAPHIC SECTIONS

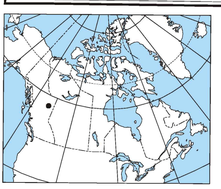
SECTION	NOTES
1. 98RAH8	Type section of Besa River Fm (Bamber et al., 1968): this study - B.C. Richards (1998, unpublished data); also examined by Bamber and Mamet (1978)
2. 90RAH3	Type section of Prophet Fm (Sutherland, 1958): this study - B.C. Richards (1990, unpublished data); previously examined by Bamber and Mamet (1978)

NOTES:

1. Bedding orientations are shown at station locations; crossbedding, cleavage and joint orientations are shown slightly offset from stations for clarity when accompanied by bedding measurements.
2. Map symbols are shown in grey where buried beneath thick Quaternary glacio-fluvial deposits.
3. Cross-cutting relationships in the faulted Prophet Formation on the east side of the Muskwa Anticlinorium indicate that the west-dipping faults formed after the east-dipping faults. Based on the map pattern, the origin of the faults that dip to the east is open to interpretation. They may have formed either as west-vergent thrust faults that developed after folding of the Muskwa Anticlinorium or as east-vergent thrusts that were subsequently folded into their current geometry.

References:

1. Bamber, E.W., and Mamet, B.L.
   1978: Carboniferous biostratigraphy and correlation, northeastern British Columbia and southwestern District of Mackenzie; Geological Survey of Canada, Bulletin 266, 65p.
2. Bamber, E.W., Taylor, G.C., and Procter, R.M.
   1968: Carboniferous and Permian stratigraphy of northeastern British Columbia; Geological Survey of Canada, Paper 68-15, 25 p.
3. Bednarski, J.M.
   2000: Surficial Geology, Trutch, British Columbia (NTS 94G); Geological Survey of Canada, Open File 3885, scale 1:250 000.
4. Stockmal, G.S., Kubli, T.E., Currie, L.D., and McDonough, M.R.
   2002: Map symbology and analysis of box and polyclinal folds, with examples from the Rocky Mountain Foothills of northeastern British Columbia and the Liard Ranges of southeastern Yukon Territory and southwestern Northwest Territories; Canadian Journal of Earth Sciences, vol. 39, p.145-155.
5. Sutherland, P.K.
   1958: Carboniferous stratigraphy and rugose coral faunas of northeastern British Columbia; Geological Survey of Canada, Memoir 295, 177p.



INDEX MAP

CANADA

NATMAP CARTNAT
Canada's National Geoscience Mapping Program
Le Programme national de cartographie géoscientifique du Canada

GEOLOGY

KLUACHESI LAKE (94G/13)

PEACE RIVER DISTRICT

BRITISH COLUMBIA

Scale 1:50 000 Echelle 1/50 000

Kilometres 1 0 1 2 3 Kilomètres

Universal Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada 2003

Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983
© Sa Majesté la Reine du chef du Canada 2003

OPEN FILE DOSSIER PUBLIC 1677 GEOLOGICAL SURVEY OF CANADA COMMISSION GÉOLOGIQUE DU CANADA 2003	Open files are products that have not gone through the GSC formal publication process. Les dossiers publics sont des produits qui n'ont pas été soumis au processus officiel de publication de la CGC.

Compilation by K.M. Fallas and R.B. MacNaughton based on fieldwork and studies of vertical air photographs 2000-2002.

THIS MAP IS A PRODUCT OF THE CENTRAL FORELAND NATMAP PROJECT

Geology from fieldwork by K.M. Fallas and R.B. MacNaughton 2000-2001; with contributions from: G.S. Stockmal, L.S. Lane, A.K. Khudoley, T.E. Kubli, M.P. Cecile, and B.C. Richards.

Geological cartography by K.M. Fallas and S. J. Hinds

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

Base map at the same scale published Surveys and Mapping Branch in 1971

CONTOUR INTERVAL 100 FEET

Elevations in Feet above Mean Sea Level
North American Datum 1983
Transverse Mercator Projection

94K/1 Mount Sylvia	94J/4 Gathto Creek		94J/3 Tenaka Creek
94F/16 no title	94G/13 Kluachesi Lake GSC OF 1677		94G/14 Bunch Creek
94F/9 Mount Justin	94G/12W Richards Creek GSC OF 4237	94G/12E GSC OF 3733	94G/11 Minaker River GSC OF 3735

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

UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

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2003: Geology, Kluachesi Lake (94G/13), Peace River District - British Columbia; Geological Survey of Canada, Open File 1677, scale 1:50 000.