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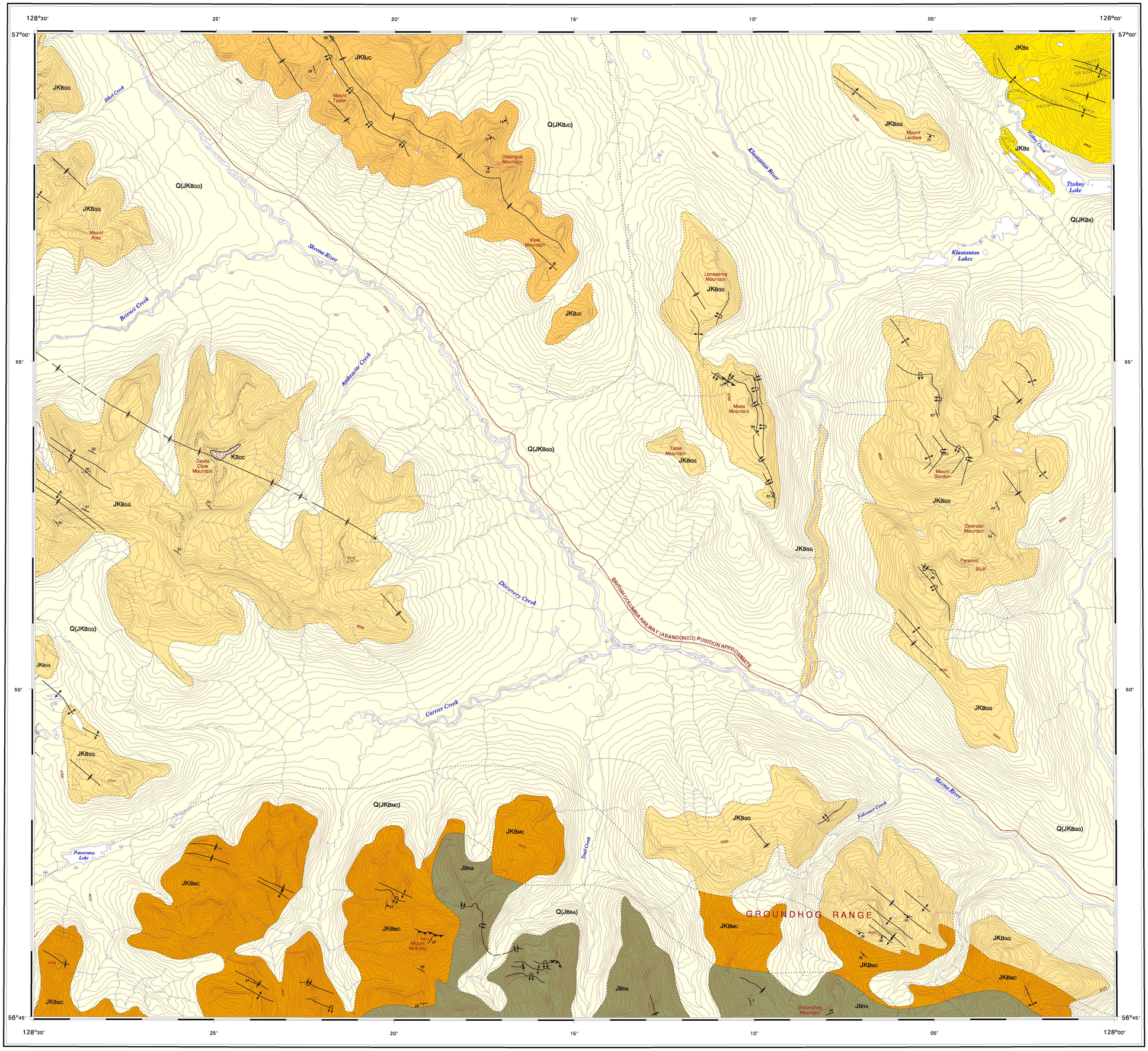
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



CENOZOIC

NEOGENE

PLEISTOCENE AND HOLOCENE

Q — *Glacial till, alluvium, colluvium; unit designators in parentheses are the inferred underlying bedrock units; includes substantial areas covered by vegetation.*

MESOZOIC

CRETACEOUS

LOWER CRETACEOUS

BOWSER LAKE GROUP

KBDC — *DEVILS CLAW FORMATION: conglomerate, sandstone, and siltstone; high proportion of pebble conglomerate (30–80%) in laterally continuous, grey-weathering sheets with large-scale crossbedding; conglomerate forms bases of fining-upward cycles with medium-grained sandstone, fine-grained sandstone, carbonaceous siltstone, and minor coal; sandstone is dark green- and grey-weathering with planar- and trough-crossbedding; fossil plants common; marine fossils absent.*

JURASSIC AND CRETACEOUS

UPPER JURASSIC AND LOWER CRETACEOUS

BOWSER LAKE GROUP

JKBJC — *JENKINS CREEK ASSEMBLAGE (nonmarine assemblage): mudstone, siltstone, fine-grained sandstone, medium-grained sandstone, and rare conglomerate and coal, commonly arranged in fining-upward cycles; sandstone is grey-, green-, and brown-weathering, and occurs as laterally continuous sheets, discontinuous sheets, and lenses; lenses are planar- and trough-crossbedded; fossil plants abundant, including in situ roots, and plants with delicate structure; marine fossils absent.*

JKBGG — *GROUNDHOG-GUNANOOT ASSEMBLAGE (deltaic assemblage): sandstone, siltstone, and carbonaceous and calcareous mudstone, with minor conglomerate and coal, locally arranged in fining-upward cycles; sandstone is fine- to medium-grained with planar bedding and planar-tabular crossbedding; large proportion of sandstone is thin- and thick-bedded, medium-grained, recessive drab green- or brown-weathering wacke; resistant and light grey-weathering arenite is less common and forms discontinuous sheets and lenses; finer grained strata are thinly bedded and locally include densely packed plant fossils; conglomerate sheets and lenses, which constitute 10% of the unit, are light grey-weathering, with large-scale crossbedding; plant fossils common and include in situ trees; marine fossils rare.*

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-weathered surfaces; 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; rare 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.*

JURASSIC

UPPER MIDDLE TO UPPER JURASSIC

BOWSER LAKE GROUP

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; contains abundant turbidite features (e.g. Bouma cycles, flame structures, flute-and-groove casts); conglomerate includes debris-flow deposits; marine fossils.*

Geological contact (defined, approximate, assumed or extrapolated under Quaternary)

Trace of individual beds from ground observation and airphoto interpretation

Fault, thrust (teeth on hanging wall: defined)

Anticline (trace of axial surface: defined upright or inclined, defined overturned)

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

Anticline, syncline (trace of axial surface: assumed or extrapolated under Quaternary)

Conglomerate

Bedding (upright, top unknown, overturned)

Cleavage (inclined)

Trail

Railway grade

DESCRIPTIVE NOTES

This map presents the bedrock geology of McEvoy Flats map area. It is a product of the project "Integrated Petroleum Resource Potential and Geoscience Studies of the Bowser and Sustut Basins", and is one of a suite of 1:50,000 scale maps of the coal-bearing units of the northern Bowser Basin. The area is underlain entirely by Late Jurassic to Early Cretaceous clastic rocks of the Bowser Basin.

Previous mapping identified and documented parts of the Groundhog coalfield (e.g. Malloch, 1913; Buckham and Latour, 1950), recognized the Bowser Basin as a regional sedimentary basin (GSC, 1957), and subdivided the Bowser Lake Group into regional units (Evenchick et al., 2000). Stratigraphic, biostratigraphic, and structural details of the Groundhog coalfield are provided by graduate studies of Moffat (1985), MacLeod (1991), and Cookenboo (1993), and in related papers (eg. Cookenboo and Bustin, 1989; MacLeod and Hills, 1990; Moffat et al., 1994; and references therein).

Strata of the Bowser Basin have been divided into lithofacies assemblages based on sedimentary character, and the depositional environment of each assemblage has been interpreted based on these characteristics (see legend). Lithofacies assemblages of the Bowser Lake Group interfinger laterally and vertically, with the result that near their mapped boundaries they contain components of neighbouring assemblages. Assumed contacts between lithofacies assemblages locally cross structural trends at a high angle. In most of these cases the positions of the contacts are poorly defined, and it is unclear whether they are lateral facies changes or faults. Descriptions and interpretations of Bowser Basin rocks relevant to this map, and the broader map context, may be found in Evenchick et al. (2005, 2006, 2008), and Evenchick and Thorkelson (2005). Information on fossils collected from Bowser Basin strata up to 1992 is given in Evenchick et al. (2001).

Contractional structures of the Skeena Fold Belt (Evenchick, 1991a, b) are the dominant structures of this map. In areas where the structural geometry is well displayed, axial surfaces of folds, thrust faults, and bedding traces outlining folds illustrate the structural geometry and large degree of horizontal shortening. These areas should be considered representative of bounding areas where no structural details are shown. Cross sections at 1:100,000 scale are presented on a previous compilation (Evenchick et al., 2000). The majority of structures in the Skeena Fold Belt trend northwest and many fold systems verge to the northeast.

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Geology by C.A. Evenchick (1992, 2004, 2006); P.S. Mustard (1992, 2004, 2006); C.J. Greig and S. Porter (1992); and M.E. McMechan (2004, 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

GEOLOGICAL SURVEY OF CANADA OPEN FILE 5734

BCMEM PETROLEUM GEOLOGY OPEN FILE 2008-5

GEOLOGY

McEVOY FLATS

BRITISH COLUMBIA

Scale 1:50 000/Échelle 1/50 000

kilometres 1 0 1 2 3 4 kilometres

Universal Transverse Mercator Projection
North American Datum 1927

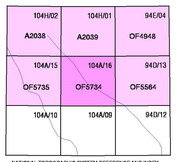
Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1927

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

Mean magnetic declination 2008, 21°33'E, decreasing 19.1' annually

Elevations in feet above mean sea level

Contour interval 100 feet



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

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5734
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2008

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2008: Geology, McEvoy Flats, British Columbia; Geological Survey of Canada, Open File 5734; BC Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Open File 2008-5, scale 1:50 000.

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