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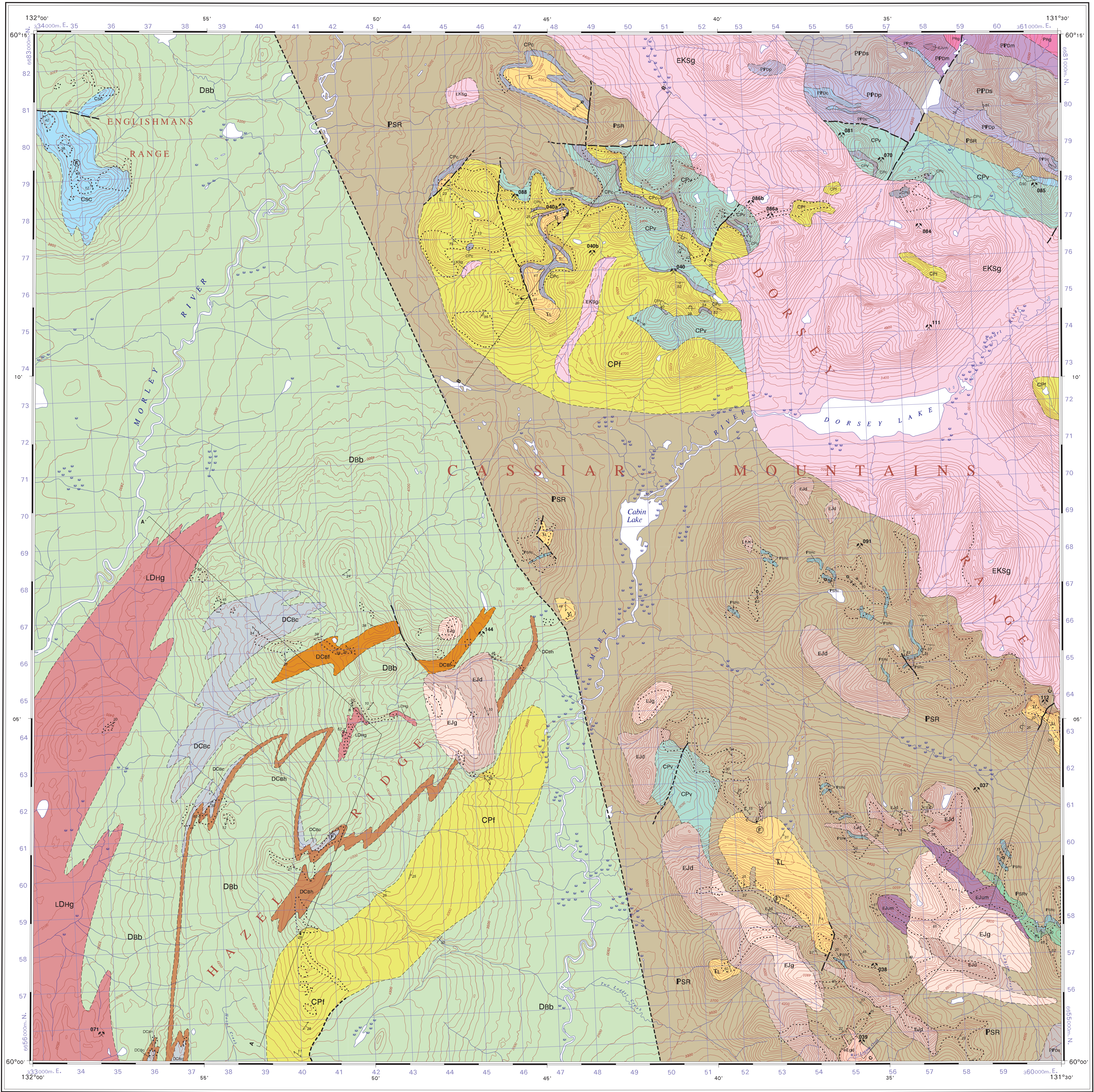
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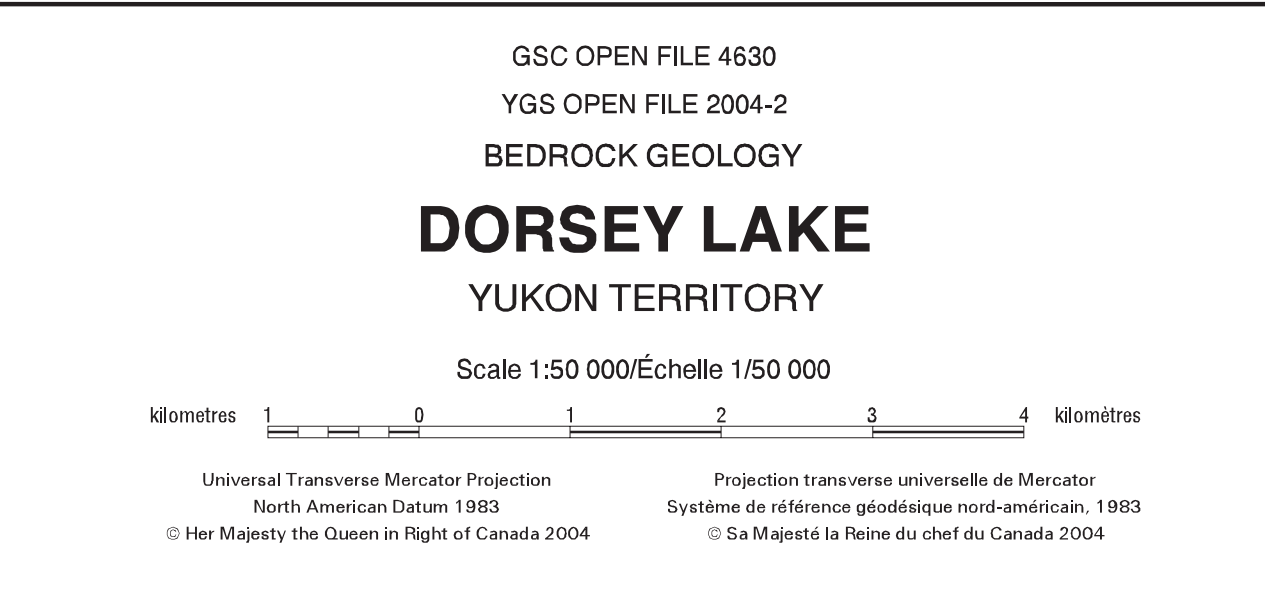
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GSC OPEN FILE 4630
YGS OPEN FILE 2004-2
BEDROCK GEOLOGY
DORSEY LAKE
YUKON TERRITORY
Scale 1:50 000/Echelle 1/50 000
Digital cartography by P. Dhesi, Geological Survey of Canada, Pacific Division
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada
Projection: Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada 2004



Digital base map from data compiled by Geomatics Canada, modified by the Geospatial Information Division
Universal Transverse Mercator Grid Zone 9
Mean magnetic declination 2003, 25° 20' E, decreasing 17.7' annually
Elevations in feet above mean sea level
Contour interval 100 feet

105 07	105 08	105 09
CP	CPV	CPV
105 10	105 11	105 12
CPV	CPV	CPV
105 13	105 14	105 15
CPV	CPV	CPV
105 16	105 17	105 18
CPV	CPV	CPV
105 19	105 20	105 21
CPV	CPV	CPV

OVERLAP ASSEMBLAGES

LAYERED ROCKS

- TL: Lower to middle Triassic: Black slate and phyllonite; limy metasediments and pebble conglomerate; minor dark grey limestone
- PERMAN OR OLDER KUMT GROUP: Upper Permian member: Brown-weathering indurated metasediments and sandstone, interbedded chert, meta-silt, quartzite and light grey marble
- CPc: Beige-weathering marble, locally silicified; rare chloritic interbeds
- CPV: Volcanic fragment member: Undifferentiated meta-tuff and volcanic breccia of intermediate composition; minor chloritic meta-sandstone and meta-siltstone "out-falls"
- CSC: Middle Mississippian to lower Pennsylvanian: Sore Creek Limestone: Thin-to thick-bedded light grey weathering commonly blocky limestone and dolomitic marble; minor maroon and green phyllite and green bedded chert

YUKON-TANANA TERRANE

LOWER CARBONIFEROUS AND OLDER BIG SALMON COMPLEX

- DCc: Cabin Lake unit: Fine-layered, diagenetic-phylic meta-tuff (intermediate composition) with bands of quartz-rich phyllite and meta-grit; minor carbonate
- LDHg: Hazel Flutes: granitic gneiss, alaskite to meta-diorite (U-Pb zircon ages: 335 ± 4 and 362.3 ± 7 Ma; Mihalynuk et al., 1998, 2000)
- DCbc: Buff-weathering limestone and marble
- DCb: Mount Hazel Metachert: Laminated quartzite, locally rich in pink pediments and hematite (Conkrite chert of Mihalynuk et al., 1998, 2000)
- DBb: Smart River Greenstone: Chloritic metabasalt and meta-tuff of intermediate to mafic composition; minor volcanic meta-sandstone

fault, sense of motion unclear

- PERMAN Prg: Rain Storm: Coarse-grained monzonite, granodiorite (U-Pb zircon 258 ± 2 Ma, J.K. Morones, pers. comm., 2002) (replaces Dorsey Complex)
- LOWER CARBONIFEROUS AND OLDER SWIFT RIVER GROUP: Dark-coloured quartz-gabbro gneiss; meta-sandstone; minor phyllite argillite, quartzite, conglomerates, limestone and chloritic meta-tuff (U-Pb zircon dates as young as 422 Ma; Gleason et al., 2001); carbonaceous siltstone, grey chert and volcanic breccia (intermediate composition)
- PSRC: Light grey to beige limestone and marble lenses, not stratigraphic
- PSRV: Chloritic andesitic intrusions, breccia and tuff; green siliceous argillite

CARBONIFEROUS AND OLDER DORSEY COMPLEX

- PPDp: Upper Dorsey unit: Red-brown weathering phyllite, grey pelitic and quartzite, grey metachert and quartz-carbonate schist (U-Pb zircon, 325.6 ± 2.7 Ma; Roots and Heaman, 2001), highly foliated meta-plutonic rocks
- PPDc: Beige weathering marble and limestone, brown calc-alicite
- PPDs: Biotite ± garnet schist, metagrit, minor marble
- PPDm: Lower Dorsey unit: Hornblende schist and gneiss, locally contains felsic leucosome (U-Pb zircon dates: 373 ± 14 Ma; Roots et al., 2003); amphibolite

PALEOGENE INTRUSIVE ROCKS

- Egpd: Logging stock: Hornblende granodiorite, monzonite (U-Pb zircon - 58.6 ± 1.5 Ma; Mihalynuk and Heaman, 2003)
- EKg: Early Cretaceous: Biotite granite, granodiorite, leucogranite monzonite, alaskite
- EKsg: Seagull Batholith
- EJg: Early Jurassic: Non-holitized, K-feldspar porphyritic granodiorite, monzonite, minor diorite, gabbro
- EJd: Hornblende diorite and quartz diorite; minor biotite hornblende quartz monzonite
- EJum: Ultramafic: Gabbro, serpentinite and dunite

SYN- AND POST-OROGENIC INTRUSIVE ROCKS

LEGEND

SYMBOLS

Bedding: inclined, upright, overturned
Dominant foliation (transposition foliation; commonly parallel to compositional layering): inclined, vertical, (2nd stage) inclined, (2nd stage) vertical
Igneous layering
Compositional layering
Crenulation lineation
Elongation or mineral lineation
Intersection lineation, with vergence: M fold
Folds, with vergence: M fold
Cleavage
U/Pb zircon date, age in Ma
Fossil locality
Geological contact: defined, approximate, assumed
Limit of outcrop
Normal fault: defined, approximate, inferred
Solid circle on downthrown side
Thrust fault: defined, approximate, inferred
Upright folds: antiform, synform
Overturned folds: antiform, synform
Cross-section line
Yukon MINFILE (105B) occurrence

ACCESS

The southwest corner of Dorsey Lake map area lies 10 km east of Morley River Lodge on the Alaska Highway (km 1248), the nearest permanent settlement. An unimproved road extends from the Alaska Highway at km 1210, about 20 km to the inaccessible point of the Logjam occurrence (Yukon Mile 1028), and a track continues a further 6 km to the camp below the Logjam site. Most other trails shown on this map and topographic maps were made in the late 1970s and are not passable today.

PHYSIOGRAPHY

The west half of the map area is part of the Hazlet Plateau (Mathews, 1968). Extensive tundra and meadows cover the rolling Hazlet Ridge. Broad, low-angle valleys of Dorsey beds are controlled by white tundra. To the east, angular and rugged terrain of the Dorsey Group is evident. The Hazlet Plateau is a composite of massive granitic, diorite and gabbro bodies of the Logjam Group. Of intermediate age are massive hornblende diorite plutons, intruded locally by tonalite to monzonite dikes and veins. The Hazlet Plateau is a composite of massive granitic, diorite and gabbro bodies of the Logjam Group. The Hazlet Plateau is a composite of massive granitic, diorite and gabbro bodies of the Logjam Group. The Hazlet Plateau is a composite of massive granitic, diorite and gabbro bodies of the Logjam Group.

PREVIOUS WORK

Reconnaissance by Poole et al. (1966) and more detailed studies (Abbott, 1981; Stevens and Harris, 1956, 2000) preceded this revision mapping. The current map is part of a regional initiative to assess the mineral potential of Yukon-Tanana Terrane (Roots et al., 2000; Corns and the Yukon-Tanana Terrane Group, 2001).

REGIONAL GEOLOGY

The legend notes in this area originated as continental shelf sediments overlain by volcanic successions. Now called Yukon-Tanana Terrane, they locally over-ride the western edge of ancient North America beginning in Middle Jurassic time.

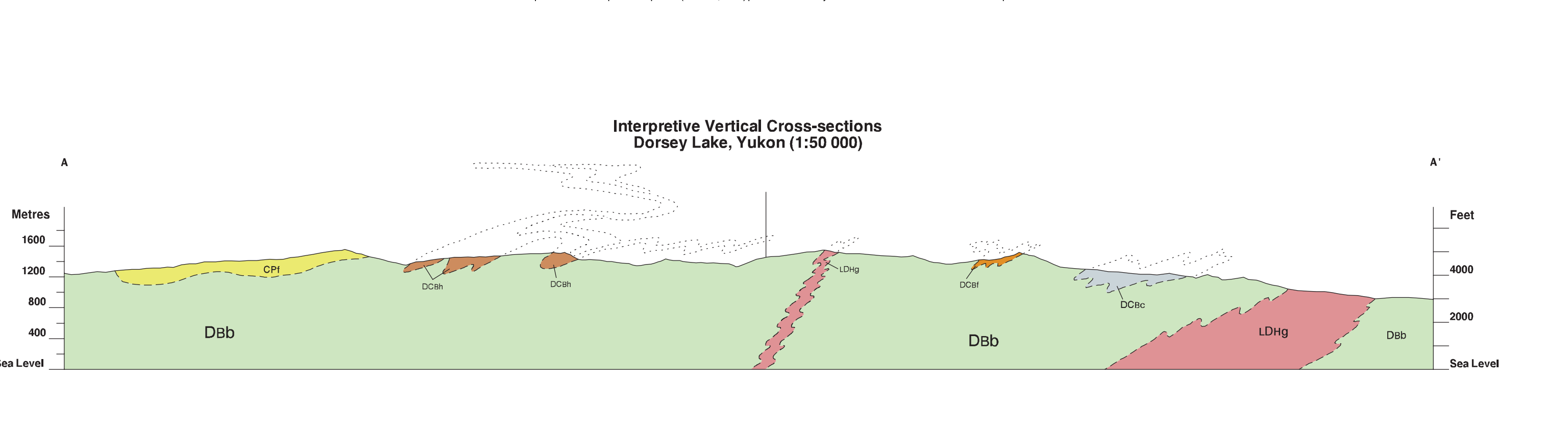
Yukon-Tanana Terrane

Three elements are present in the map area. The west half comprises the Big Salmon Complex; the east half a separate, in part contemporaneous succession of the Dorsey Complex and Swift River Group. Unconformably overlying both these elements are less metamorphosed Krumm Group and Trosser sediments that are here interpreted as overlap assemblages. The unconformable contact between Big Salmon Complex and Swift River Group is inferred to be an east-side down-thrust fault.

Big Salmon Complex (Mulligan, 1983) consists of related plutonic and siliceous rocks, and includes late Devonian to mid-Mississippian stratigraphy described as alaskite (Mihalynuk et al., 1998, 2000). High concentrations in metavolcanic flows (Smart River greenstone) reveal an arc composition (Mihalynuk et al., in prep.). Isolated outcrops of the early stage of Morley River Group are present in the Hazlet region. A related tonalite-diorite body (Hazel orogenites'; Mihalynuk et al., 1998, 2000) separates Dorsey zircon dates suggest multiple phases of activity.

The Hazlet Metachert has elevated Mn and Ba, suggesting a hydrothermal origin (Mihalynuk et al., 1998). It and the Hazlet marble have been dated in local outcrops across the map area to the south (Mihalynuk et al., 2001a). A gabbro core fragment was collected from the mid-section of Hazlet Ridge (Poulsen et al., 1998) and the same unit is dated from the south of the map area (Alaska Highway at Logjam Creek) but neither provides definitive age information. The Cabin Lake unit may be equivalent to the ca. 325 Ma Mount Francis metachert (18 km southeast of the map area; Mihalynuk et al., 2000) and not related to the Dorsey Complex.

Dorsey Complex and Swift River Group. The northeast corner of the map area is underlain by mafic schist and gneiss, phyllite and banded marble of the Dorsey Complex. Its mineral assemblages reflect a medium to high pressure and temperature regime (Stevens, 1986) prior to intrusion by the Permian horn stock, Swift River Group.



Mineral Occurrences 105B/4
Yukon MINFILE (DeKlerk, 2003)

No.	Name	Minerals, type
105B 037	Smart	Ag, Au, v. quartz
105B 038	Logjam	W, Mo, porphyry
105B 040	JC	Sn skarn
105B 070	Can	Sn skarn
105B 071	Televisión	Sn skarn
105B 081	Doral	Sn skarn
105B 084	DU	Sn vein
105B 085	Tin	Sn skarn
105B 086	Cusp	Sn vein
105B 088	Smith	Sn, unknown
105B 091	Kilbuck	unknown
105B 111	Dorsey	unknown
105B 112	Hollister	W skarn
105B 144	Cabin Lake	Cu-Zn stratiform

Note: sub-occurrences A-B are showings linked to main occurrence by the original file.

Yukon Geological Survey
Energy, Mines and Resources
Yukon Government
Open File 2004-2
Bedrock geology, Dorsey Lake (NTS 105B/4)
Yukon Territory
(1:50,000 scale)

OPEN FILE DOSSIER PUBLIC 4630

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