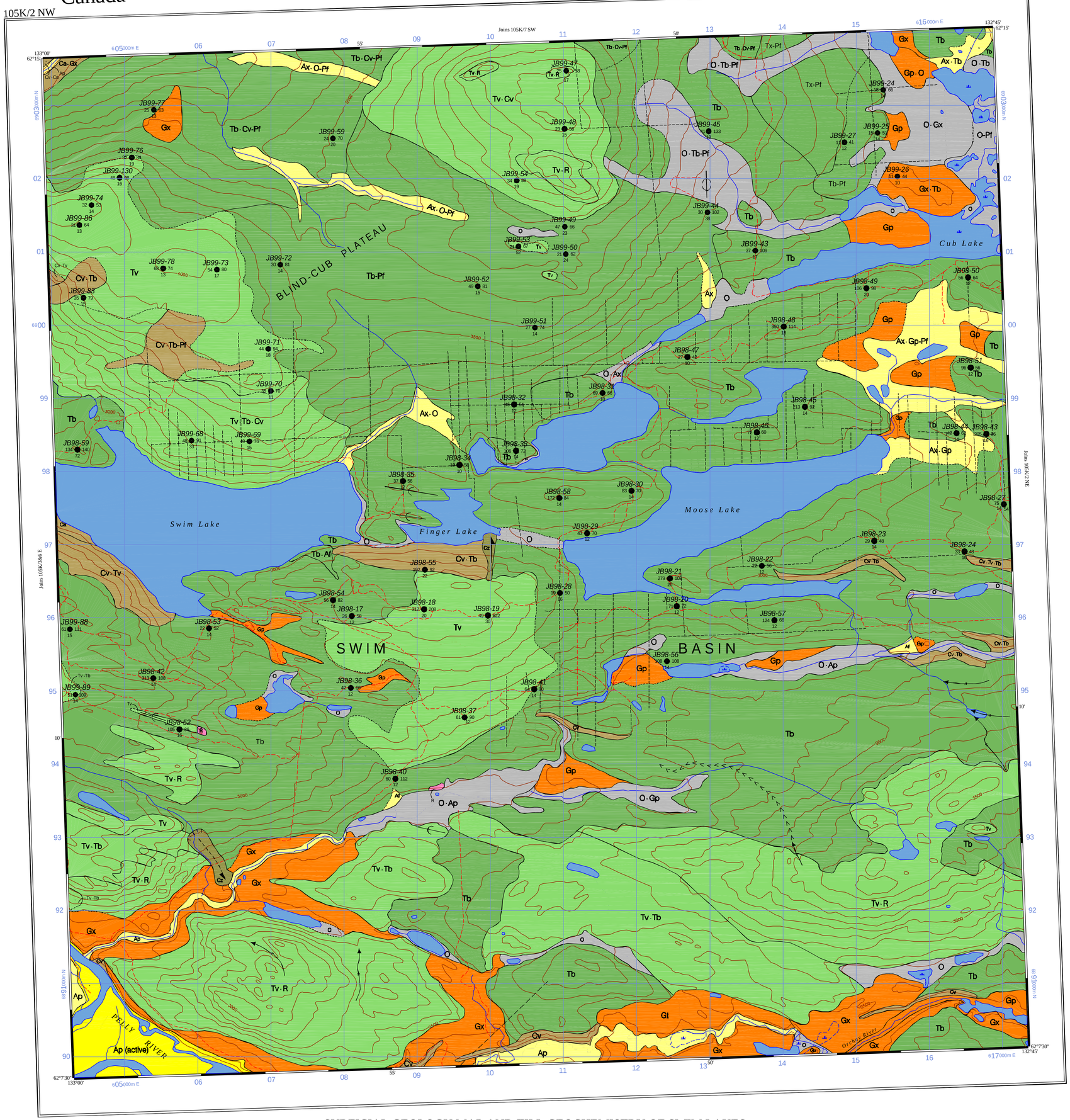
Canada

Government

105K/2 NW



LEGEND

QUATERNARY

HOLOCENE

ORGANIC DEPOSITS ; peat and woody material; occurring as a flat to gently sloping plain; overlie lacustrine, till, or poorly drained glaciofluvial and alluvial deposits but rarely form a dominant geologic unit. Most common in low inter-lake channels, along lake margins, on alluvial plains and as a veneer (< 1 m thick) in old-growth forests. Permafrost is commonly present within 1 m of the surface. Localized palsa development occurs in organic deposits.

O — *O - organics* ; consisting of woody sedge peat, variable thickness. White River ash accumulations are commonly associated with poorly drained peaty areas.

ALLUVIAL DEPOSITS: sand, silt and pebbles with minor cobbles deposited in modern drainages. Most alluvial deposits are limited to small intermittent stream channels due to the low terrain.

Ap Af Ax — *Ap - alluvial plain* ; silt, sand and pebbles with minor reworked cobbles and boulders occurring as bars, overbank floodplain or low terrace deposits, 0 - 10 m thick; floodplain subject to periodic floods. Small valley alluvial plains may not be mapped at this scale.
Ap (active) - alluvial plain ; area of Pelly River floodplain that has been recently active.
Af - alluvial fan ; coarse sand, pebbles, cobbles and mudflow deposits, up to or >10 m thick. Appear as vegetated, often peat covered, landforms developed during post-glacial sedimentation.
Ax - complexes of Ap and Af undivided. Common when a stream is unconfined and also in narrow valleys where side-entry alluvial fans cannot be differentiated from an alluvial plain.

Ap (active)

PLEISTOCENE AND HOLOCENE (UNDIVIDED)

COLLUVIAL DEPOSITS: diamicton, gravel, shattered bedrock, and lenses of sand and silt derived from bedrock and surficial sediments by physical and chemical weathering processes. Transport of dislodged debris occurs as surface creep or by mass wasting processes. Permafrost and seasonal freeze-thaw processes often initiate and enhance colluviation.

Cv Ca — *Cv - colluvium veneer* ; conforms to bedrock topography, <1 m thick.
Ca - colluvium apron ; coalescing colluvial fans at the base of a slope, >1 m thick.

Cz — *Cz - mass wasting* ; includes slumping, debris slides and rockfalls. Debris slides in till and colluviated till are most common in the map area.

LATE PLEISTOCENE (WISCONSINAN) - McCONNELL GLACIATION

GLACIOFLUVIAL DEPOSITS: stratified to massive; poorly to well sorted; gravel and sand with minor silt and cobbles; deposited by meltwater originating from glacial ice. Common in inter-lake glacial meltwater channels and the Tintina Trench.

Gp Gt Gx — *Gp - glaciofluvial plain* ; 3-10 m thick.
Gx - glaciofluvial complex ; 1 - 30 m thick, composed of deposits of outwash, glaciolacustrine and minor till deposited in an ice contact environment. Hummocky topography is associated with this depositional setting.

GLACIAL DEPOSITS (till): unsorted clay, silt, sand, pebbles and cobbles with minor boulders; deposited by or from glacial ice and occurs as subdued veneer and blanket deposits. Till overlies most of the Swim Basin.

Tv — *Tv - till veneer* ; conforms to underlying topography, <1 m thick.

Tb Tx — *Tb - till blanket* ; gently to moderately sloping plain controlled by bedrock or underlying surficial deposits, >1 m thick.
Tx - till complex ; till blanket or veneer composed of meltout till and minor ice contact glaciofluvial deposits.

LOWER CAMBRIAN TO CRETACEOUS

BEDROCK: The map area is underlain by metasedimentary rocks of North American affinity, accreted terrane and the Anvil Plutonic Suite. North American rocks underlie most of the map area and include the Lower Cambrian Mt. Mye formation, the Cambrian to Lower Ordovician Vangorda formation, the Lower Ordovician Menzie Creek formation and undivided Ordivician to Devonian Road River Group. Two sulphide deposits, the SB and SEA deposits, are located in the Mt. Mye formation in the vicinity of Swim Lake. The undivided Devonian to Pennsylvanian Earn and Mt. Christie Formations and Lower Permian Anvil Range Group is mapped along the southern margin. Near the Tintina Trench and southern border of the map area are accreted rocks of Yukon Tanana terrane. Late- and post-metamorphic Cretaceous intrusions of the Anvil Plutonic Suite cut the metamorphic stratigraphy in the southeast corner of the map (Jennings and Jilson, 1986).

R — *R - bedrock* ; isolated outcrops on Blind-Cub Plateau, on crag and tail landforms in the southwest corner of the map and along streams draining into the Pelly River.

COMBINED MAP UNITS

The surficial geology unit(s) are shown first followed by the terrain modifiers. Combined surficial geology units are used where, for reasons of scale, two or more deposits cannot be delineated individually. The dominant unit (>50 % of polygon coverage) is shown first and the subordinate units (<50 % of polygon coverage) are shown second and third. A dot separates the surficial units and a dash separates the terrain modifier from the surficial geology.

TERRAIN MODIFIERS

SUB-ARCTIC, ALPINE AND PERIGLACIAL PROCESSES

Pf - permafrost within 1 m of surface
K - thermokarst
S - solifluction

FLUVIAL PROCESSES

Active - recently active part of floodplain

EROSIONAL PROCESSES

G - gullying ; areas of rapid erosion

SYMBOLS

Geological boundary (defined, assumed)

Glacial meltwater channel

Esker

Mass movement failure - slow to moderate (i.e., creeps or slumps)

Mass movement failure - moderate to fast (i.e., slides or avalanches)

Aligned landform

Till geochemistry sample (ppm) — *Sample Number* Cu Zn Pb

REFERENCES

JENNINGS, D.S. and JILSON, G.A., 1986. Geology and sulphide deposits of Anvil Range, Yukon. In: Mineral Deposits of Northern Cordillera. Proceedings of the Mineral Deposits of Northern Cordillera Symposium, MORIN, J.A. (Ed.), Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 319-361.

RECOMMENDED CITATION

BOND, J.D., 1999. Surficial geology map and till geochemistry of Swim Lakes (105K/2 NW), central Yukon (1:25,000 scale). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 1999-5.

Digital cartography and drafting by P.S. Lipovsky, Yukon Geology Program.

Any revisions or additional geological information known to the user would be welcomed by the Yukon Geology Program.

Copies of this map may be purchased from Geoscience Information and Sales, c/o the Whitehorse Mining Recorder, Indian and Northern Affairs Canada, Room 102-300 Main St., Whitehorse, Yukon, Y1A 2B5, Ph 867-667-3266 Fax 867-667-3267.

Keep this map stored in a dark area to prevent map colours from fading.

This map was released Nov. 1999, and was revised Dec. 15, 1999.

SURFICIAL GEOLOGY MAP AND TILL GEOCHEMISTRY OF SWIM LAKES

(105K/2 NW), CENTRAL YUKON

SCALE 1:25 000

Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 1972
FOR CENTRE OF 105K/2 MAP
Annual change decreasing 4.1

Topographic base produced by SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES.

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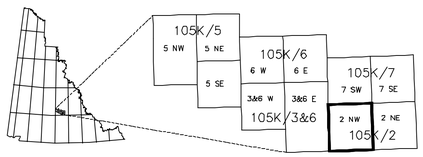
ONE THOUSAND METRE
Universal Transverse Mercator Grid
ZONE 8

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1983
Transverse Mercator Projection

1000 0 1000 2000 3000 4000 Metres



Indian and Northern Affairs Canada
Exploration and Geological Services Division
Yukon Region

Open File 1999-5

SURFICIAL GEOLOGY MAP AND TILL GEOCHEMISTRY OF SWIM LAKES (105K/2 NW), CENTRAL YUKON

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