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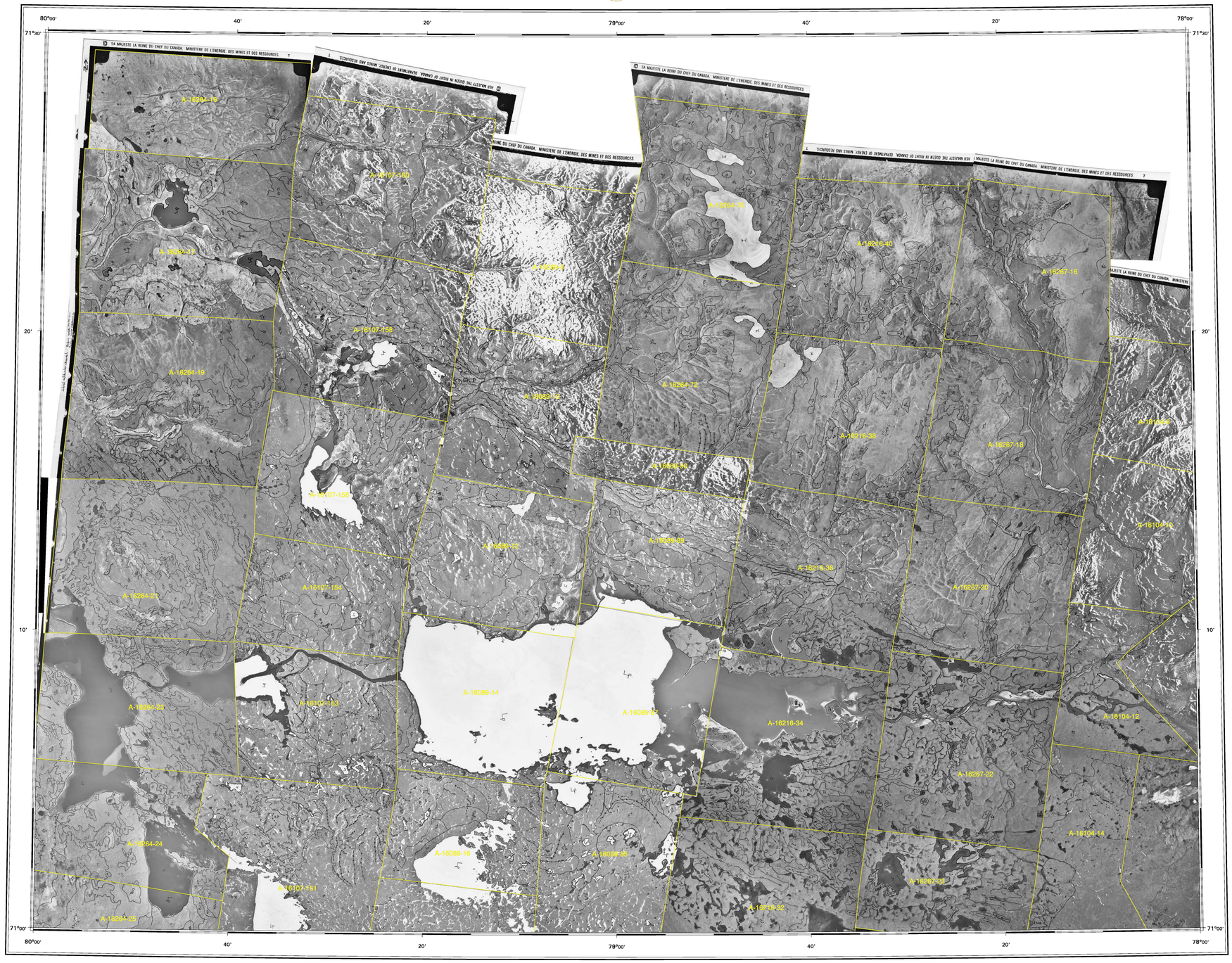
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



LOCATION MAP

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OPEN FILE 4950

DRAFT SURFICIAL GEOLOGY AND AERIAL PHOTOGRAPH MOSAIC

ICEBOUND LAKES (SOUTHWEST)

BAFFIN ISLAND

NUNAVUT

Scale 1:100 000/Échelle 1/100 000

kilometres 2 0 2 4 6 8 kilomètres

Universal Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada 2006

Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983
© Sa Majesté la Reine du chef du Canada 2006

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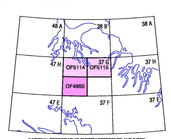
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 2006, 42°59W, decreasing 53.45' annually. Readings vary from 44°26'W in the NE corner to 41°16'W in the SW corner of the map



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

LEGEND

Coloured legend blocks indicate map units that appear on this map only.

Notes regarding compound units: *Where surficial geology types are interspersed in patches or patterns too small to be discerned at the scale of mapping, the proportion of each surficial geology component is given (in descending order) by a compound unit designation. The relationship between these components is represented by a symbol between the individual components as follows:*
- overlying (i.e., stratigraphic relationship).
. approximates 50% cover for each surficial geology type in the label.
/ approximates 70% to 30%.
// approximates 90% to 10%.
Example: Tb/R *approximates 70% till blanket and 30% rock coverage.*

Note: *When veneers form the dominate coverage, a hatcher pattern (see legend below) is used to allow the user to clearly identify the underlying unit (e.g., Tv/R).*

QUATERNARY

HOLOCENE

S — ***Snow:*** *Snow cover visible on ca. 1958 aerial photographs such that surficial geology could not be distinguished. Thickness is greater than 50 cm.*

I — ***Ice:*** *Ice cover visible on ca. 1958 aerial photographs. Thickness is variable.*

Ev — ***Eolian veneer:*** *Thin, discontinuous sheets of well sorted, massive silt and sand deposited by wind. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Eb — ***Eolian blanket:*** *Well sorted, massive silt and sand deposited by wind. Typically forms gently rolling geomorphology marked by dunes. Thickness is less than 5 m.*

ALLUVIUM: *Predominantly composed of sorted and commonly stratified gravel, sand, minor silt and organic detritus deposited by post-glacial fluvial processes. Fan deposits may include gravelly diamictons.*

Av — ***Alluvial veneer:*** *Thin, discontinuous deposit. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Ap — ***Alluvial plain:*** *Typically forms a single level (i.e. a plain) within approximately 1 m of active stream channel. Thickness ranges from 1 to 5 m.*

At — ***Alluvial terrace:*** *Deposits are of floodplain origin and presently are isolated from flooding by stream incision. Thickness ranges from less than 1 to 10 m.*

Af — ***Alluvial fan:*** *Forms fan-shaped landforms with gentle slopes (relative to colluvial fans) where streams enter larger valleys. Thickness can reach up to 10 m.*

Ax — ***Alluvial complex:*** *Consists primarily of alluvial units but may contain pockets of till, glaciolacustrine, glaciofluvial, glaciomarine, marine and/or colluvium sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m.*

LACUSTRINE: *Composed of sand, silt and minor clay deposited in active lake environments.*

Lv — ***Lacustrine veneer:*** *Thin, discontinuous deposit .Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Lp — ***Lacustrine plain:*** *Assumed modern-day deposit that typically forms the substrate of existing major fresh-water lakes. May also contain minor amounts of submerged rock, alluvium, colluvium, till, and/or glaciofluvial sediments. Thickness ranges from 1 to 3 m.*

Ld — ***Lacustrine delta:*** *Active sediment build-up from flowing water entering standing water. May have gently or steeply-dipping fronts. Thickness ranges from 3 m to greater than 5 m.*

Lx — ***Lacustrine complex:*** *Consists primarily of exposed lacustrine units but may contain pockets of till, glaciolacustrine, glaciofluvial, glaciomarine, marine, colluvium and/or alluvium sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m.*

COLLUVIUM: *Mass wasting debris (i.e. deposited by direct gravity-induced movement that may involve water and/or ice). Typically unsorted, but may be stratified as a result of gravity induced movement (e.g. debris flows). The character of the deposit depends primarily on its parent material.*

Cv — ***Colluvial veneer:*** *Thin, discontinuous deposit. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Cb — ***Colluvial blanket:*** *A mantle of sediment. Thickness is greater than 1 m.*

Ca — ***Colluvial apron:*** *Forms a slope deposit comprising debris flows, avalanche-dominated fans, and soliflucted sediments derived from bedrock and glacial sediment sources. Thickness is up to 10 m, thinning at head and toe of the deposit.*

Cf — ***Colluvial fan:*** *Mass wasting debris that forms fairly steep (relative to alluvial fans) fan-shaped landforms. Thickness can reach up to 10 m.*

Ch — ***Landslide Sediments:*** *Forms a hummocky or ridged topography with ridges transverse to direction of movement. Thickness is highly variable, but may range up to 10 m (direction of movement indicated by symbol).*

Cx — ***Colluvial - complex:*** *Consists primarily of colluvial materials but may contain pockets of till, glaciolacustrine, glaciofluvial, glaciomarine, marine and/or alluvial sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m.*

Cu — ***Colluvium - undifferentiated:*** *Comprises colluvial sediments with mixed surface morphologies (lowercase unit label designator). Thickness is greater than 1 m.*

GLACIOLACUSTRINE: *Lacustrine deposits in, or along the margins of a glacial lake. May have been ice-dammed, or formed as a result of elevated water levels due to glacial melt. Typically well stratified silt and sand; deltas are composed of cross-stratified sand and gravels, and may include lenses of finer material.*

L^G_v — ***Glaciolacustrine veneer:*** *Thin, discontinuous deposit. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

L^G_b — ***Glaciolacustrine blanket:*** *A mantle of material. Thickness ranges from 1 to 5 m.*

L^G_p — ***Glaciolacustrine plain:*** *Local relief is less than 1 m (plain). Thickness ranges from 1 m to greater than 20 m.*

L^G_d — ***Glaciolacustrine delta:*** *Sediment built-up from flowing glacially derived water entering a glacial lake. The feature may have gently or steeply-dipping fronts. Thickness ranges from 3 m to greater than 10 m.*

L^G_r — ***Glaciolacustrine ridged:*** *Consists primarily of glaciolacustrine materials, but also includes cross-valley (DeGeer) moraines. Local relief varies from 1 m to greater than 20 m, composed of sand and gravel. Deposits between ridges are more typical of glaciolacustrine deposits (silty-fine sands). Thickness ranges from 1 m to greater than 20 m.*

L^G_x — ***Glaciolacustrine complex:*** *Consists primarily of glaciolacustrine materials but may contain pockets of till, glaciofluvial, glaciomarine, marine, colluvium and/or alluvium sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m. In upper slopes of valleys with cross-valley (Degeer) moraines, more till is present and is inferred to represent the washing zone of a paleo-lake. Thickness is greater than 1 m.*

EARLY HOLOCENE AND PLEISTOCENE

GLACIOFLUVIAL: *Well to poorly stratified gravel, sand and silt; minor diamicton; deposited behind, at, or in front of the ice margin by glacial meltwater.*

Gv — ***Glaciofluvial veneer:*** *Thin to discontinuous deposit. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Gp — ***Glaciofluvial plain:*** *Typically forms a single level (i.e. a plain). Thickness ranges from 1 m to greater than 5 m.*

Gt — ***Glaciofluvial terraces:*** *Typically forms terraces separated by scarps. Patches of colluvium that are too small to be represented at the scale of mapping may be present along the scarps. Thickness ranges from 1 to 20 m.*

Gh — ***Ice contact glaciofluvial:*** *Complex arrangement of surface slope steepness and aspects often forming kettle and kame topography and including esker ridges. Thickness ranges from less than 5 m to greater than 15 m.*

Gx — ***Glaciofluvial - complex:*** *Consists primarily of glaciofluvial materials but may contain pockets of till, glaciolacustrine, glaciomarine, marine, colluvium and/or alluvium sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m.*

Gu — ***Glaciofluvial - undifferentiated:*** *Consists of glaciofluvial materials with mixed surface morphologies (lowercase unit label designator). Thickness is greater than 1 m.*

TILL: *Diamicton deposited directly by or from glacier ice; sandy to silty matrix (with minor clay) with striated clasts of various lithologies.*

Tv — ***Till veneer:*** *Thin, discontinuous deposit. Hatch-fill is used when the veneer is the dominant proportion of a compound unit. Thickness is less than 1 m.*

Tb — ***Till blanket:*** *Surface morphology conforms to underlying bedrock topography. May exhibit crag-and-tails and/or fluting; occasionally exhibits roches moutonnées in areas of thin till blankets (e.g., 1 to 2 m). Thicknesses ranges from 1 m to 5 m.*

Tp — ***Till plain:*** *Surface morphology is a single level or gently sloping, low relief plain; a result of overlying till masking the underlying topography. Thickness ranges from 1 to 20 m.*

Tm — ***Rolling till plain:*** *Surface morphology forms gently rolling plains with 1 to 2 m relief; may exhibit flutings and/or other drumlinoid forms. Generally masks underlying topography. Thickness is greater than 5 m.*

Tr — ***Ridged till complex:*** *Surface morphology forms parallel ridges (i.e. moraines) less than 15 m high and less than 50 m apart. Moraines are composed of till, intervening areas may be till and/or ice-marginal glaciofluvial deposits. Thickness is variable, but is usually less than 15 m.*

Th — ***Hummocky till:*** *Forms hummocky surface morphology (i.e. kame and kettle topography); in places the unit may exhibit prominent ridges marking recessional ice margins, or diffuse zones marking boundaries between glacial-ice regimes. Thickness is highly variable, but is usually less than 20 m.*

Tx — ***Till - complex:*** *Consists primarily of till but may contain pockets of glaciofluvial, glaciolacustrine, glaciomarine, lacustrine, marine, colluvium and/or alluvium sediments, that are too small to be represented at the scale of mapping. Thickness is greater than 1 m.*

Tu — ***Till - undifferentiated:*** *Consists of till deposits with mixed surface morphologies (lowercase unit label designator). Thickness is greater than 1 m.*

Polygon undefined, missing label

PRE-PLEISTOCENE

BEDROCK

R — ***Bedrock:*** *outcrops of bedrock, may have thin mantle (<10 cm) of unconsolidated or organic material.*

Rf — ***Bedrock - Felsenmeer:*** *Frost-heaved, angular blocks of bedrock.*

Geological contact
Limit of mapping
Observation point
Glaciolacustrine delta
Roches moutonnées (defined, assumed)
Flute
Esker (flow direction known, unknown)
Moraine; major
Moraine; lateral
Moraine; minor
Ice contact
Meltwater channel, major (arrow indicates flow direction)
Meltwater channel, minor (flow direction known, unknown)
Meltwater channel, lateral
Escarpment
Kettle
Marine shorelines
Uncoded line work
Surficial beach
Mega-polygon: Area exhibits a hexagonal polygon network where polygon diameter ranges from 20 to 50 m. May indicate the presence of buried glacial ice at depth.

DISCLAIMER

In consideration of the current exploration activity being undertaken within NTS 37G/SW, and in recognition of the importance of a timely release of data contained within this map, the authors' feel that publication of this unfinished map is warranted.
The Open File 4950 Surficial Geology of Icebound Lakes (southwest) map represents a work-in-progress, and as such, contains errors including polygon boundaries, labeling, symbols, and congruity of geobases. A subsequent Open File release will eventually supersede Open File 4950, correcting all known errors and data omissions. In the interim, while users are cautioned about uncertainty in the present map, they should nonetheless recognize the veracity of the majority of geoscience information presented.

OPEN FILE
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4950
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2006

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

SHEET 2 OF 2
FEUILLET 2 DE 2

Sheet 2 of 2, Aerial photograph mosaic

Recommended citation:
Little, E.C. and Holme, P.J.
2006: Draft surficial geology and aerial photograph mosaic, Icebound Lakes (southwest), Baffin Island, Nunavut; Geological Survey of Canada, Open File 4950, scale 1:100 000.

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