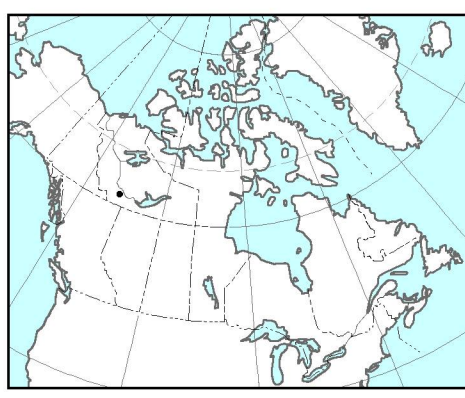


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OPEN FILE 6009
SURFICIAL GEOLOGY
FORT SIMPSON (95H/SW)
NORTHWEST TERRITORIES
Scale 1:100 000/Échelle 1/100 000
kilomètres 2 0 2 4 6 8 kilomètres
Universal Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada 2011
Projection de référence géodésique: nord-américain, 1983
© Sa Majesté la Reine du chef du Canada 2011

05GNE	05HNV	05HNE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE
05GSE	05HSE	05HSE

- Holocene**
- Organic deposits**
- peat and muck, occurring as flat to gently sloping plains
 - FENLAND: woody sedge peat, 1-2 m thick
 - PEATLAND: sphagnum peat generally underlain by woody sedge peat, 0.5-2 m thick
 - PEATLAND: contains thermokarst depressions
 - PEATLAND (> 50%) AND FENLAND
 - FENLAND (> 50%) AND PEATLAND
- Alluvial deposits**
- sand, silt and minor gravel in association with modern drainage regime
 - ALLUVIAL PLAIN: coarse sand and gravel with silt, fine sand and some organic debris, occurring as channel and overbank floodplain sediments or in-channel bars; 3-5 m thick
 - ALLUVIAL FAN: mainly sand and silt with minor gravel and discontinuous layers of peat occurring as fan deposits
 - ALLUVIAL COMPLEX: floodplain and fan deposits; may contain small areas of colluvium
- Colluvial and landslide deposits**
- clastic and rubble derived from bedrock and/or surficial material through a variety of colluvial and landslide processes
 - COLLUVIAL COMPLEX: slope complex consisting of diamicton and rubble; may include minor landslides (C2) and/or alluvial fan (Af) units; > 2 m thick
 - LANDSLIDE: bedrock, rubble and/or diamicton occurring as stepped or tongue-shaped deposits, formed by rotational slumping, retrogressive flow, debris flows, rock topple and translational slides in surficial sediments and/or bedrock; they are prominent along former meltwater channels
- Late Pleistocene**
- Eolian deposits**
- fine to medium sand, minor silt derived from deltaic or glaciolacustrine deposits in association with deflation wind direction
 - EOLIAN VENEER: discontinuous cover of mainly fine sand and silt over other surficial units and bedrock; < 1 m thick
 - EOLIAN VENEER TO BLANKET: discontinuous cover (veneer dominant) of mainly fine sand and silt over surficial materials, mostly commonly till, lacustrine and/or glaciolacustrine deposits; < 1-10 m thick
 - PARABOLIC DUNES: sand; < 15 m thick
 - EOLIAN COMPLEX: veneer to blanket deposited over other surficial materials, particularly lacustrine and till plains; includes parabolic dunes
- Glaciolacustrine deposits**
- silt and clay with minor sand and diamicton; sediments deposited in a proglacial lake
 - LACUSTRINE PLAIN: flat to gently sloping cover; locally overlain by eolian sand; 1-10 m thick
 - LACUSTRINE PLAIN WITH THERMOKARST DEPRESSIONS: flat to gently sloping cover; locally overlain by eolian sand; 1-10 m thick
 - LACUSTRINE VENEER: discontinuous deposits, conforming to local topography; commonly associated with sand dunes following ice retreat; locally overlain by eolian sand; < 2 m thick
 - SHORELINE DEPOSITS: low, ridged beach deposits of sand and gravel; < 5 m thick
 - SHORELINE DEPOSITS: channelled, low, ridged beach deposits of sand and gravel, affected by glaciolacustrine channeling; the deposits may be intercalated with till deposits; < 5 m thick
 - LACUSTRINE COMPLEX: deltaic sediments transitional between glaciolacustrine and glaciolacustrine deposits with upper 0.5-5 m consisting of sand; locally overlain by eolian sand; < 20 m thick
- Glaciolacustrine deposits, ice contact**
- sand and gravel locally with a veneer of eolian silt and/or sand; deposited as ice-contact sediment by glacial meltwater
 - GLACIOFLUVIAL RIDGES: eskers; 2-15 m thick
 - GLACIOFLUVIAL HUMMOCKS: kames; < 5 m thick
 - GLACIOFLUVIAL COMPLEX: includes eskers, kames and plains, commonly with thermokarst ponds in places; 2-30 m thick
 - GLACIOFLUVIAL COMPLEX, CHANNELLED: containing ridges, hummocks and kettle plains, affected by glaciolacustrine channeling; common along Blackwater River; 2-50 m thick

UNDERSTANDING THE LEGEND

The genetic category of surficial material is indicated by the first upper case letter, e.g., G (glaciolacustrine). The morphologic category is indicated in lower case following the genetic category, e.g., Gp (glaciolacustrine plain). The modifying processes are indicated in lower case separated from the morphologic category by a (-) e.g., Gp-k (glaciolacustrine plain with thermokarst processes).

Combined units are used where, for reasons of scale, the units cannot be separated. The main unit, covering over 50% of the geologic polygon, is separated by a () from the secondary unit, e.g., Gp-k-Lp. In cases where the polygon has a third unit it is represented by a patterned symbol, e.g., eolian sand cover, peatlands or fenlands.

Author: A. Duk-Rodkin

Geology by A. Duk-Rodkin, 2007

Digital cartography by B. Firmin and D.A. Lemay

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

Digital base from Geomatics Canada, modified by the Geological Survey of Canada

Mean magnetic declination 2011, 21°16'E, decreasing 24.4' annually.
Readings vary from 21°29'E in the NW corner to 21°00'E in the SE corner of the map

Elevations in metres above mean sea level

- Glacial deposits**
- unsorted silt, sand, and clay with clasts (pebbles, cobbles and some boulders) deposited by glacial ice in a variety of landforms
 - TILL PLAIN: flat to gently sloping; 3-5 m thick
 - TILL PLAIN, CHANNELLED
 - TILL BLANKET: gently to moderately sloping plain conforming to underlying topography; 2-5 m thick
 - TILL, DRUMMLINOID: hilly till plain with individual drumlins or extensive flutes; 3-15 m thick
 - TILL, RIDGED: surface of generally coarse till (20-50% pebbles) deposited as ridges; in some places Tx forms veneer over bedrock
 - TILL COMPLEX: largely hummocky, ridged, and/or hilly with patches of gravel; in some places Tx forms veneer over bedrock
 - TILL, CREVASSE FILL: coarse diamicton (>30% pebbles) deposited as crevasse fills forming high ridges; 2-15 m thick
 - TILL, CREVASSE FILL, CHANNELLED
- Paleozoic to Mesozoic**
- Bedrock**
- primarily prominent ridges, escarpments and hills associated with Devonian rocks
 - Cretaceous shale (various colours) and limestone mostly in plains area; Paleozoic limestone, dolomite, shale (various colours), siltstone, mudstone and sandstone mostly in mountainous areas
- Organic Deposits**
- This pattern is used when organic deposits appear as a second or third component in a polygon, eg. Tp Gx Ev
- Fenland constituting 10 - 50% of the map unit
 - Peatland constituting 10 - 50% of the map unit
 - Peatlands and fenlands undivided constituting 10 - 50% of the map unit
- Eolian Deposits**
- This pattern is used when eolian sand veneer appears as a second or third component in a polygon, eg. Tp Gx Ev
- Discontinuous veneer (<1m) mainly fine sand and silt covering other surficial units and bedrock
- Colluvial Deposits**
- This pattern is used when colluvial veneer and sheetwash deposits appear as a second or third component in a polygon, eg. Tp Gx, Tx Gx, Tx Lx, Cx
- Discontinuous veneer (<1m) mainly diamicton and rubble that conforms to local topography

- Geological boundary (defined)
- Moraine plateau: commonly rimmed and mantled by glaciolacustrine sediments overlying a till core. The moraine plateaus in this area are characterized by rims up to 15 m high enclosing a basinal area. They contain silt-clay sediments to a depth of 2 m; actual thickness of glaciolacustrine sediments are unknown. Moraine plateaus span 100-1400 m in diameter. No till was found below the rims or within the basin area
- Drumlin, drumlinoid ridge or flute (direction uncertain): streamlined hill or ridge of till with long axis paralleling direction of iceflow
- Drumlin, drumlinoid ridge or flute (direction certain): streamlined hill or ridge of till with long axis paralleling direction of iceflow; elliptical base and arched profile with long gentle slope pointing in downstream direction
- Meltwater channel (major): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided, flat-bottomed valleys; channels may run across or along slope contours; may be presently dry, poorly drained or contains an underdrift stream or small lakes
- Meltwater channel (minor): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided channels, may run across or along slope contours; may be presently dry
- Esker (direction certain): sinuous, low ridge composed of sand and gravel; formed by deposition from meltwater running through a channel beneath or within glacier ice
- Crevasse filling
- Shoreline of former lake: low, ridged beach deposits of sand and gravel
- Shoreline of former lake common to two lakes: low, ridged beach deposits of sand and gravel
- Dune ridge
- Deflation hollow
- Beaver dam
- Kame
- Landslide
- Ground Station
- Helicopter observation



Surficial Geology Location Map, Southern Mackenzie Corridor

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2011

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