References and additional ice flow data from

Cocking, R.B., Deblonde, C., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Laviolette, A., Parent, M., Plouffe, A., Robertson, L., St-Onge, D.A., and Weatherston, A., 2015. Surficial Data Model, version 2.1.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 7741, 276 p. doi:10.4095/296568

Fyles, J.G., 1963. Surficial geology of Victoria and Stefansson islands, District of Franklin, Geological Survey of Canada, Bulletin 101, 38 p. doi:10.4095/100620

Nixon, F.M., 1988. Till sampling program and presentation of physical and geochemical data from western Victoria Island, Northwest Territories; Geological Survey of Canada, Paper 88-15, 36 p. doi:10.4095/125172

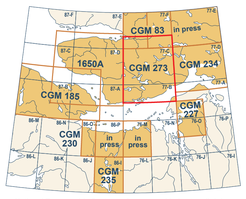
Sharpe, D.R., 1992. Surficial geology, Banning Lake area, District of Franklin, Northwest Territories; Geological Survey of Canada, Map 1781A, scale 1:250 000. doi:10.4095/184007

Abstract

This new surficial geology map product represents the conversion of A-Series Map 1781A and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.1) which can be found in Open File 7741. All geoscience knowledge and information from Map 1781A that conformed to the current SDM were maintained during the conversion process. Additional material such as marginal notes or figures which may exist on the original map, are not included here. Supplementary, limited legacy information was added to complement the converted geoscience data. It is identified in the accompanying geodatabase. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management, and dissemination of geologic map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geodatabase which can expand following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1781A et de sa légende uniquement, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.1) de la Commission géologique du Canada, lequel peut être consulté dans le Dossier public 7741. Toutes les connaissances et l'information de nature géoscientifique de la Carte 1781A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des éléments additionnels tels que des notes marginales ou des figures qui pourraient être présents sur la carte originale ne sont pas inclus ici. Des données complémentaires limitées ont été ajoutées pour compléter les données géoscientifiques converties. Elles sont identifiées dans la base de données géospatiales. Le but de la conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes des formations superficielles.



National Topographic System reference and index to adjoining published Geological Survey of Canada maps

Catalogue No. M183-1/273-2016E-PDF
ISBN 978-0-660-04147-6
doi:10.4095/299289

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Natural Resources, 2017

Natural Resources Canada | Ressources naturelles Canada

CANADIAN GEOSCIENCE MAP 273

SURFICIAL GEOLOGY

BANNING LAKE AREA

Northwest Territories–Nunavut

NTS 77-C and parts of 77-B and F

1:250 000

QUATERNARY

HOLOCENE–LATE WISCONSINAN

NONGLACIAL ENVIRONMENT

O — **Organic deposits, undifferentiated:** silty to sandy organic-rich sediments; 1–3 m thick; resting on a variety of poorly drained substrates; peat is present locally; mudboils, hummocks, and willow thickets are common.

C — **Colluvial deposits, undifferentiated:** diamicton consisting of stony, sandy silt, calcareous debris and rubble; massive and compact; 1–2 m thick; consists of reworked primary sediment; occurs as solifluction lobes, terraces, or slump bowls, particularly in thermokarst terrain; only large colluvial occurrences that can clearly be distinguished from till are shown.

A — **Alluvial sediments, undifferentiated:** gravel to gravelly sand near channels, and silty sand and minor silt or clay, together with eolian and colluvial deposits, on floodplains; 10–20 m thick on alluvial terraces and 1–2 m thick on strath terraces; frost fissures, 1–2 m deep, are common in gravelly sediments.

MARINE SEDIMENTS: sediments deposited by marine processes (waves, currents, suspension, flocculation, and sea ice) as well sorted sediment during regression of the postglacial sea; occurs as ridges and veneers on large coastal platforms and as terraces marking regressive sea level events; sediments may have been disturbed by pack ice and iceberg scour.

Mr — **Beach sediments:** gravel and gravelly sand; 1–4 m thick; occurs as flights of raised littoral strandlines; locally disturbed by ice push.

Mo — **Offshore sediments:** silt to sandy silt and clay, locally stony; 1–5 m thick; overlies glaciomarine sediment; occurs as sublittoral and offshore facies downslope from deltas and beach terraces; forms a veneer scoured by drifting ice.

M — **Marine sediments, undifferentiated:** complex of silt and sandy silt; discontinuous veneer 1–3 m thick; on bedrock, diamicton, or locally, gravel.

LATE WISCONSINAN

GLACIAL ENVIRONMENT

GMd — **Glaciomarine deltaic sediments:** gravel to gravelly sand and sand as delta fan features, and silt and clay in prodelta and subaqueous fan deposits; massive; 10–30 m thick.

GL — **Glaciolacustrine sediments, undifferentiated:** gravelly sand, silt, and clay; 1–5 m thick; deposited as proglacial fans or deltas in shallow water; found in flat, but dissected areas.

GLACIOFLUVIAL SEDIMENTS: sediments deposited in subglacial cavities and in lakes or the sea by glaciofluvial processes.

GFr — **Esker sediments:** gravel, sand, minor silt and clay; 10–20 m thick; ice-contact; occurs as sharp-crested and flat-topped eskers.

GF — **Glaciofluvial sediments, undifferentiated:** gravel and sand; 2–20 m thick; outwash occurring as terraces and deltas.

GLACIAL SEDIMENTS (TILL): diamicton and stratified sediments; deposited in ice marginal, subglacial, and supraglacial positions by a variety of processes.

Th — **Hummocky till:** diamicton (till flows), sand, gravel, and silt; interbedded; 10–50 (?) m thick; diamicton is the usual surface sediment with large polygons; large areas of hummocks and depressions are common; less common are linear (rim) ridges and small moulin kames which contain sand and gravel; originates both as subglacial ice press and supraglacial sediment gravity flows or meltout; redistribution of sediment by thaw slumping over buried (glacial?) ice continues today.

Tr — **Ridged moraine:** diamicton, sand, and gravel; interbedded; horizontally bedded with ice core; 5–50 m thick; diamicton commonly comprises about 50% of sediment thickness; forms linear ridges (end moraines and lateral moraines); sedimentation occurred subaerially or subaqueously at the ice margin by sediment gravity flow, thrusting and shearing, and glaciofluvial deposition.

Tv — **Till veneer:** diamicton and stratified sediments; thin, patchy; 1 m or less thick; large areas of flat terrain, commonly bedrock controlled; ground moraine mainly deposited subglacially.

Tb — **Till blanket:** massive diamicton; 1–15 m thick; in places interbedded with (or underlain by) sand and gravel; ground moraine mainly deposited subglacially; locally flutings present where drift is thin (1–2 m), and drumlinoids occur where drift is thick (10–15 m).

PRE-QUATERNARY

R1 — **Sedimentary bedrock:** carbonate rock; Paleozoic; flat-lying and jointed; fractures can control the location of modern rivers.

R — **Bedrock, undifferentiated:** sandstone, siltstone, shale, and carbonate; Paleozoic, Precambrian or Cambrian.

- Thermokarst depression (stable)
- Geological contact, defined
- Beach crest
- Limit of submergence, marine:
  - *Approximate*
  - *Defined*
- Glaciolacustrine limit of submergence:
  - *Approximate*
  - *Defined*
- Meltwater channel:
  - *Minor, scoured, subglacial, proglacial, paleocurrent known*
  - *Major, subglacial, paleocurrent known*
- Moraine ridge:
  - *Minor, ice-pressed, transverse, De Geer; longer segments represent lateral ridges*
  - *Major, unspecified*
- Esker:
  - *Direction of flow unknown*
  - *Direction of flow known*
- Drumlinoid (1 = older, 2 = younger)
- Crag-and-tail
- Rock drumlin, direction unknown
- Bedrock scarp
- Retrogressive thaw flow, active
- S-form, flow direction known
- Kame
- Striation, ice flow direction known
- Fossil observation, marine
- Dated sample location (radiocarbon date) (*see* Table1)
- Sample location (*see* Nixon, 1988)

Map ID	Sample ID	Latitude	Longitude	Elevation (m a.s.l.)	Material	Radiocarbon Age
1	GSC-4051	69.073602	108.942059	150	Shells	9310 ± 100

Table 1. Radiocarbon age.

Recommended citation

Geological Survey of Canada, 2017. Surficial geology, Banning Lake area, Northwest Territories–Nunavut, NTS 77-C and parts of 77-B and F; Geological Survey of Canada, Canadian Geoscience Map 273 (preliminary, Surficial Data Model v. 2.1 conversion of Map 1781A), scale 1:250 000. doi:10.4095/299289

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Authors: Geological Survey of Canada

Geology based on airphoto interpretation and field observations by D.R. Sharpe, 1983–1985, 1987, with participation of F.M. Nixon, 1983.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2015

Geomatics by S. Eagles and M. Smith

Cartography by N. Côté

Initiative of the Geological Survey of Canada, conducted under the auspices of the Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

Map projection Universal Transverse Mercator, zone 12. North American Datum 1983

CANADIAN GEOSCIENCE MAP 273

SURFICIAL GEOLOGY

BANNING LAKE AREA

Northwest Territories–Nunavut

NTS 77-C and parts of 77-B and F

1:250 000

5 0 5 10 15 20 km

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.
Elevations in metres above mean sea level

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Mean magnetic declination 2017, 12°54'E, decreasing 30.7' annually.
Readings vary from 15°12'E in the SW corner to 9°56'E in the NE corner of the map.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. See map info document accompanying the downloaded data for more information about this publication.

This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/).

Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 273

SURFICIAL GEOLOGY

BANNING LAKE AREA

Northwest Territories–Nunavut

NTS 77-C and parts of 77-B and F