

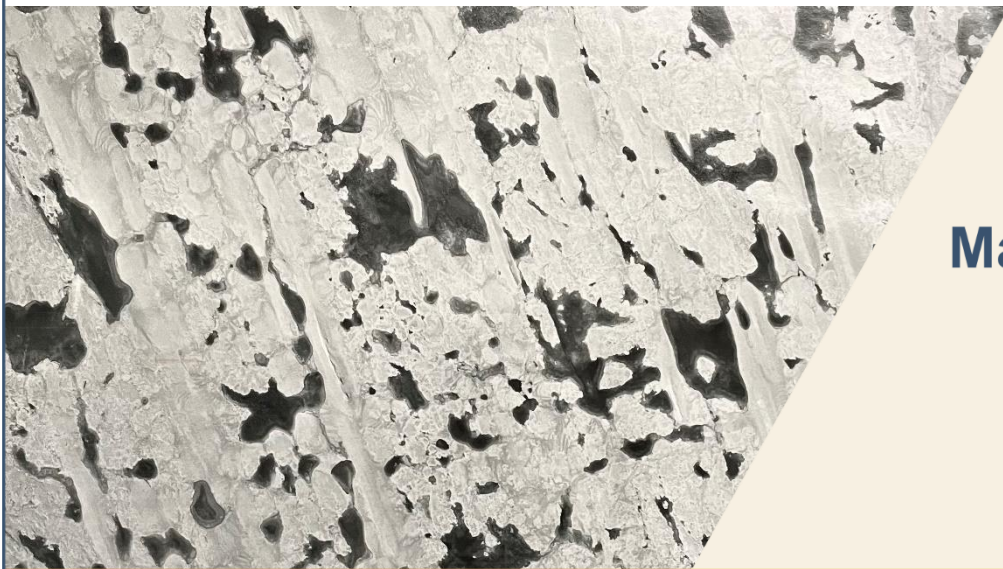


Natural Resources
Canada

Ressources naturelles
Canada

CANADIAN GEOSCIENCE MAP 449
RECONNAISSANCE SURFICIAL GEOLOGY
BRICHTA LAKE

Nunavut
NTS 76-P



**Map Information
Document**

**Geological Survey of Canada
Canadian Geoscience Maps**

2022

Canada 



MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 449

TITLE

Reconnaissance surficial geology, Brichta Lake, Nunavut, NTS 76-P

SCALE

1:125 000

CATALOGUE INFORMATION

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ABSTRACT

Preliminary surficial geology studies, based on air photo interpretation and limited legacy field data in the Brichta Lake map area, provide an understanding of the distribution and nature of surficial materials, and regional glacial history. The terrain is characterized by extensive glacial and meltwater scouring that has affected bedrock outcrops, and eroded hummocky and streamlined till, till blankets, and till veneers in the southwest regions. Streamlined bedrock and till landforms indicate ice flow towards the northwest and north-northwest during the last glaciation. Subglacial meltwater corridors and broader erosional zones, trending north-northwest, consisting of eskers, washed till veneer, ridged till, and scoured bedrock, result from late-phase ablation of the ice sheet during deglaciation. Glaciomarine and postglacial marine sediments extend discontinuously inland from the Queen Maud Gulf to 200 m a.s.l. elevation, notably up Tingmeak and Ellice rivers and their tributaries. In some eastern parts of the map area below 160 m a.s.l. elevation, thick marine deposits form plains that blanket broad shallow valleys.

RÉSUMÉ

Des études préliminaires de la géologie des formations superficielles de la région cartographique de Brichta Lake, fondées sur l'interprétation de photos aériennes et une quantité limitée d'anciennes données de terrain, permettent de comprendre la répartition et la nature des matériaux superficiels et l'histoire glaciaire régionale. Le terrain est caractérisé par un important affouillement par la glace et les eaux de fonte qui a modifié les affleurements rocheux et érodé les dépôts de till bosselé et profilé ainsi que les couvertures et placages de till dans les régions du sud-ouest. Les formes de relief profilées du substratum rocheux et du till indiquent un écoulement glaciaire dirigé vers le nord-ouest et le nord-nord-ouest au cours de la dernière glaciation. Des couloirs d'eau de fonte sous-glaciaires et des zones d'érosion plus larges, de direction nord-nord-ouest, constituées d'eskers, de placages de till délavé, de till à crêtes et de substratum rocheux affouillé, résultent de l'ablation de phase tardive de l'inlandsis pendant la déglaciation. Depuis le golfe Queen Maud vers l'intérieur des terres, jusqu'à une altitude de 200 m au-dessus du niveau de la mer, s'étendent de façon discontinue des sédiments glaciomarins et des sédiments marins postglaciaires, notamment dans le cours supérieur des rivières Tingmeak et Ellice et de leurs affluents. Dans certaines régions de l'est de la carte, à moins de 160 m au-dessus du niveau de la mer, d'épais dépôts marins forment des plaines tapissant de larges vallées peu profondes.

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SHEET 1 OF 1, RECONNAISSANCE SURFICIAL GEOLOGY

GENERAL INFORMATION

Author: D.E. Kerr

Geology by D.E. Kerr, 2021, based on airphoto interpretation of 1:60 000 scale photos taken in 1956; limited field investigations by D.E. Kerr, 1989 (Kerr, 1994); striations from unpublished field manuscript map by W. Blake Jr., 1962

Geological data conforms to Surficial Data Model v. 2.4.0 (Deblonde et al., 2019).

Geomatics by L. Robertson

Cartography by N. Côté

Scientific editing by L. Ewert

Initiative of the Geological Survey of Canada, conducted under the auspices of the Supporting Adaptation in Coastal Studies project as part of Natural Resources Canada's Climate Change Geoscience program

Map projection Universal Transverse Mercator, zone 13
North American Datum 1983

Base map at the scale of 1:50 000 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 2022, 8°04'E, decreasing 1.4' annually

Readings vary from 6°39'E in the NE corner to 9°22'E in the SW corner of the map.

This map is not to be used for navigational purposes.

Title photograph: Meltwater-scoured bedrock with remnants of fluted till, Nunavut. Photo from the National Air Photo Library. NAPL photo A15788-58

The Geological Survey of Canada welcomes corrections or additional information from users (gscpublications-cgcpublishings@nrcan-nrcan.gc.ca).

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 (<https://geoscan.nrcan.gc.ca/>).

MAP VIEWING FILES

The published map is distributed as a Portable Document File (PDF), and may contain a subset of the overall geological data for legibility reasons at the publication scale.

CARTOGRAPHIC REPRESENTATIONS USED ON MAP

This map utilizes ESRI Cartographic Representations in order to customize the display of standard GSC symbols for visual clarity on the PDF of the map only. The digital data still contains the original symbol from the standard GSC symbol set. The following legend features have Cartographic Representations applied:

- Extensive gullied terrain
- Terrace scarp
- Beach crest
- Meltwater channel
- Moraine ridge
- Drumlinoid ridge
- Drumlin ridge
- Crag-and-tail ridge
- Pre-crag ridge
- Fluted bedrock or drift
- Fluted bedrock, roche moutonnée

DEFINITION QUERIES USED ON MAP

This map utilizes definition queries in order to customize the display for visualization on the PDF of the map only and does not affect the digital data. The following features have a definition query applied:

- Station location

REFERENCES

Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2019. Surficial Data Model: the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8236, ver. 2.4.0, 1 .zip file.
<https://doi.org/10.4095/315021>

Kerr, D.E., 1994. Late Quaternary stratigraphy and depositional history of the Parry Peninsula-Perry River area, District of Mackenzie, Northwest Territories; Geological Survey of Canada, Bulletin 465, 39 p. <https://doi.org/10.4095/194069>

AUTHOR CONTACT

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K1A 0E8

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COORDINATE SYSTEM

Projection: Universal Transverse Mercator

Units: metres

Zone: 13

Horizontal Datum: NAD83

Vertical Datum: mean sea level

BOUNDING COORDINATES

Western longitude: 106°00'00"W

Eastern longitude: 104°00'00"W

Northern latitude: 68°00'00"N

Southern latitude: 67°00'00"N

SOFTWARE VERSION

Data has been originally compiled and formatted for use with ArcGIS™ desktop version 10.8.2 developed by ESRI®.

DATA MODEL INFORMATION

Surficial

The Geological Survey of Canada (GSC) through the Geo-mapping for Energy and Minerals Program (GEM) has undertaken the Geological Map Flow to develop protocols for the collection, management (compilation, interpretation), and dissemination of surficial and bedrock geology data and map information. To this end, a data model has been created.

The Surficial Data Model (SDM) was designed using ESRI geodatabase architecture. The XML workspace document provided can be imported into a geodatabase, and the geodatabase will then be populated with the feature datasets, feature classes, tables, relationship classes, subtypes, and domains.

Shapefile and table (.dbf) versions of the data are included within the data. Column names have been simplified and the text values have been maintained within the shapefile attributes. The direction columns are numerical, to display rotation for points, and the symbol fields will hold the correct values to be matched to the appropriate style file.

For a more in depth description of the data model please refer to the official publication:

Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2019. Surficial Data Model: the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8236, ver. 2.4.0, 1 .zip file.
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