



Natural Resources  
Canada

Ressources naturelles  
Canada

**CANADIAN GEOSCIENCE MAP 381**  
**SURFICIAL GEOLOGY**  
**PENNINGTON LAKE**

Nunavut  
NTS 56-F

**Map Information  
Document**

**Geological Survey of Canada  
Canadian Geoscience Maps**

**2022**

**Canada** 



## **MAP NUMBER**

Natural Resources Canada, Geological Survey of Canada  
Canadian Geoscience Map 381

## **TITLE**

Surficial geology, Pennington Lake, Nunavut, NTS 56-F

## **SCALE**

1:250 000

## **CATALOGUE INFORMATION**

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## **RECOMMENDED CITATION**

Geological Survey of Canada, 2022. Surficial geology, Pennington Lake, Nunavut, NTS 56-F; Geological Survey of Canada, Canadian Geoscience Map 381 (Surficial Data Model v. 2.3.14 conversion of Map 4-1981), scale 1:250 000.  
<https://doi.org/10.4095/313294>

## **ABSTRACT**

This new surficial geology map product represents the conversion of Preliminary Map 4-1981 (Thomas and Dyke, 1981) and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3.14) (Deblonde et al., 2018). All geoscience knowledge and information from Preliminary Map 4-1981 that conformed to the SDM were maintained during the conversion process. Selected eskers had their flow direction changed from northward to southward. Supplementary legacy information was added to complement the converted geoscience data. This consists of field stations and striations from McMartin et al., (2016 and 2017) and Wright (1967). 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 geological map information in a structured and consistent manner. This provides an effective knowledge-management tool designed around a geodatabase that 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 préliminaire 4-1981 (Thomas et Dyke, 1981) et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la Carte préliminaire 4-1981 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des eskers choisis témoignent d'une inversion de leur direction d'écoulement du nord au sud. Des éléments d'information existants ont été ajoutés en complément aux données géoscientifiques converties. Il s'agit de stations de terrain et de stries glaciaires tirées de McMartin et al., (2016 et 2017) et de Wright (1967). 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 de la géologie des formations superficielles.

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## **SHEET 1 OF 1, SURFICIAL GEOLOGY**

### **GENERAL INFORMATION**

Author: Geological Survey of Canada

Geology by R.D. Thomas (east half) and A.S. Dyke (west half), 1976 and 1977

Geological compilation by R.D. Thomas

Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018).

Geological data conversion by D.E. Kerr, 2017 and 2018

Geomatics by M. Tougas, K. McNeil, and C.D. Stevens

Cartography by M.J. Baldock

Scientific editing by L. Ewert

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

Map projection Universal Transverse Mercator, zone 15  
North American Datum 1983

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

Mean magnetic declination 2022, 6°22'W, decreasing 15.7' annually  
Readings vary from 8°08'W in the NE corner to 4°39'W in the SW 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 ([gscpublications-cgcpublishations@nrcan-rncan.gc.ca](mailto:gscpublications-cgcpublishations@nrcan-rncan.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:

- Lag deposit area
- Beach crest
- Meltwater channel
- Moraine ridge
- Esker

### **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:

- Field Station

### **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., 2018. 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. 2.3.14, 1 .zip file. <https://doi.org/10.4095/308178>
- McMartin, I., Day, S.J.A., Randour, I., Roy, M., Byatt, J., LaRocque, A., and Leblon, B., 2016. Report of 2016 activities for the surficial mapping and sampling surveys in the Tehery-Wager GEM-2 Rae Project area; Geological Survey of Canada, Open File 8134, 16 p. <https://doi.org/10.4095/299385>
- McMartin, I., Tremblay, T., and Godbout, P.-M., 2017. Report of 2017 field activities for the GEM-2 Rae glacial history activity in the Kivalliq region, Nunavut; Geological Survey of Canada, Open File 8320, 14 p. <https://doi.org/10.4095/306006>
- Thomas, R.D. and Dyke, A.S., 1981. Surficial geology, Pennington Lake, 56-F, District of Keewatin; Geological Survey of Canada, Map 4-1981, scale 1:250 000. <https://doi.org/10.4095/109300>

Wright, G.M., 1967. Surficial geology, southeastern Barren Grounds, District of Keewatin–District of Mackenzie; Geological Survey of Canada, Map 1217A, scale 1:1 000 000. <https://doi.org/10.4095/108855>

#### **AUTHOR CONTACT**

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#### **COORDINATE SYSTEM**

Projection: Universal Transverse Mercator

Units: metres

Zone: 15

Horizontal Datum: NAD83

Vertical Datum: mean sea level

#### **BOUNDING COORDINATES**

Western longitude: 94°00'00"W

Eastern longitude: 92°00'00"W

Northern latitude: 66°00'00"N

Southern latitude: 65°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**

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., 2018. 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. 2.3.14, 1 .zip file. <https://doi.org/10.4095/308178>