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

Rutter, N.W., Boydell, A.N., Savigny, K.W., and van Everdingen, R.O., 1973. Terrain evaluation with respect to pipeline construction, Mackenzie transportation corridor, southern part, lat. 60 to 64 N; Task Force on Northern Oil Development, Report No. 73-36; Information Canada, Cat. No. R72/10373, QS-1532-000-EE-A1.

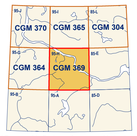
Rutter, N.W., Minning, G.V., and Netterville, J.A., 1981. Surficial geology and geomorphology, Fort Simpson, District of Mackenzie; Geological Survey of Canada, Map 3-1978, scale 1:125 000. https://doi.org/10.4095/108881

Abstract

This new surficial geology map product represents the conversion of Map 3-1978 (Rutter et al., 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 Map 3-1978 that conformed to the current SDM were maintained during the conversion process. Additional material on the original map, consisting of an extended legend, is not included here. Supplementary, limited legacy information was added to complement the converted geoscience data. This consists of drillhole data (Rutter et al., 1973). It is identified in the accompanying Map Information Document. 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 3-1978 (Rutter et al., 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 3-1978 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. De l'information supplémentaire contenue dans la légende détaillée de la carte originale n'est pas incluse ici. Une quantité limitée de données existantes a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de données de sondages tirées de Rutter et al. (1973). Ces données sont identifiées dans le document informatif sur la carte qui accompagne ce produit. 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

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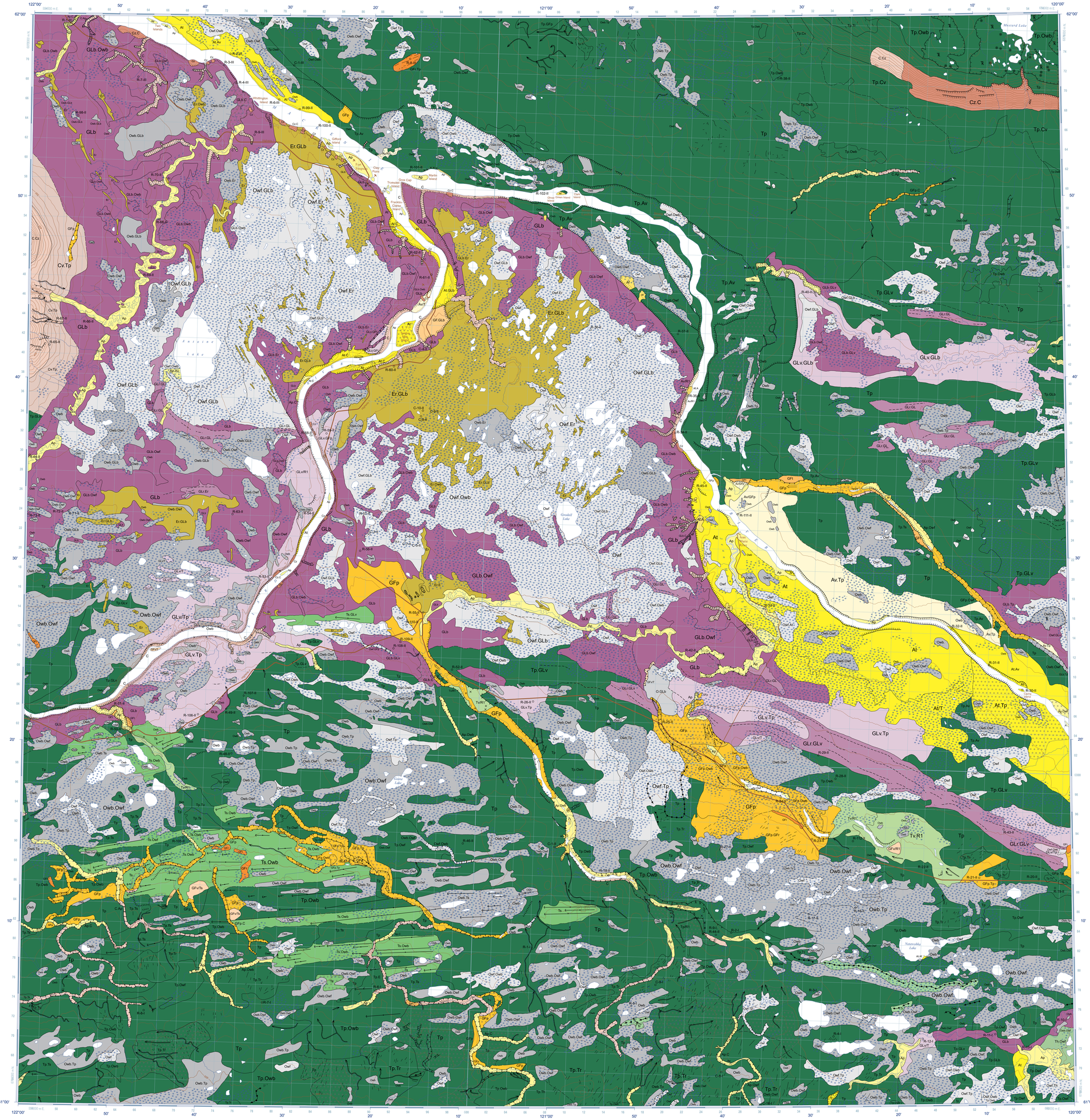
CANADIAN GEOSCIENCE MAP 369
SURFICIAL GEOLOGY
FORT SIMPSON
Northwest Territories
NTS 95-H
1:125 000



QUARTERNARY

NONGLACIAL ENVIRONMENT

Owf	**Fen deposits:** dominantly moderately decomposed fen peat derived from sedge, tamarack, and mosses; 2–3 m thick; flat to very gently sloping; water at surface through summer months; unfrozen to at least 3 m.
Owb	**Bog deposits:** dominantly moderately decomposed forest and/or undecomposed sphagnum peat derived from black spruce, Claborna feather-mosses, and ericaceous and/or Sphagnum vegetation; 1.5–7 m thick; flat to gently sloping areas with scattered mounds, with 1–6 m relief; frozen at 0.3–0.5 m; contains segregated ice in peat and in underlying mineral soil.
O	**Organic deposits, undifferentiated:** moderately decomposed components of fen and/or bog deposits; 1.5–7 m thick; forming complex that may contain various organic units that are too small to be represented at the scale of mapping.
Er	**Dune sediments:** fine to medium sand; 1–20 m thick; dune ridges, usually parallel to subparallel; subject to wind erosion.
E	**Eolian sediments, undifferentiated:** fine to medium sand; 1–20 m thick; may include dune ridges; subject to wind erosion; appears only as a secondary unit in complex polygons.
Cz	**Landslide deposits:** silt and sand to rubble and diamicton, derived mainly from glaciolacustrine silts and clays, till, and shale bedrock; variable thickness; unspecified landslide deposits, includes debris avalanches as thin narrow tongues, earthflows, mudflows, and slump deposits as blocks and hummocks; fine-grained material may contain segregated ice.
Cv	**Colluvial veneer:** variable material, clay, silt, sand, and gravel, derived from underlying surficial sediments, poorly graded; less than 1.5 m thick; gently to steeply sloping surfaces, less than 5–20 degrees; may include minor organic deposits.
C	**Colluvial deposits, undifferentiated:** material derived from underlying surficial sediments or bedrock; 1–6 m thick; forming complexes with gently to steeply sloping surfaces, less than 5–20 degrees; silty clay colluvium contains segregated ice.
Ap	**Alluvial floodplain sediments:** silt, sand, and gravel; 1–8 m thick; floodplain and low bordering terraces; floodplains within mountain regions commonly scarred by braided channels; floodplains within plains region commonly with meander scars; may include small units of Av when overlying till, permafrost and segregated ice may be present in areas where overlying bog is more than 1.5 m thick.
Af	**Alluvial fan sediments:** mostly gravel, some sand; 3–25 m thick; gently to moderately sloping fans and coalescent fans; may include one or more shifting streams.
At	**Alluvial terraced sediments:** silt, sand, and gravel; 1–30 m thick; may be overlain by Owb; may be channelled; terraces may be associated with Ap, GFp, and GFl; level to slightly sloping surfaces.
Av	**Alluvial veneer:** silt, sand, and gravel; less than 1.5 m thick; may include terrace, fan, and floodplain sediments.
A	**Alluvial sediments, undifferentiated:** silt, sand, and gravel; 1–30 m thick; may include terrace, fan, and floodplain sediments.

PROGLACIAL AND GLACIAL ENVIRONMENT

GLr	**Glaciolacustrine beach sediments:** mainly gravel with minor sand, locally include silt; 0.5– m thick; may form parallel to subparallel beach ridges arranged in belts.
GLv	**Glaciolacustrine veneer:** silt and sand; 0.5–1.5 m thick; reflects topography of underlying material.
GLb	**Glaciolacustrine blanket:** silt and sand, may include minor gravel; 1.5–50 m thick; flat to gently sloping plain; may be overlain by organic deposits with thermokarst; may include glaciolacustrine veneer when overlying till.
GL	**Glaciolacustrine sediments, undifferentiated:** silt, sand, and gravel; 1.5–50 m thick; appears only as secondary unit in complex polygons.
GFp	**Glaciofluvial outwash plain sediments:** silt, sand, and gravel; 1–30 m or more thick; flat to gently sloping plain; may include other minor glaciofluvial units and minor organic deposits; surface may be channelled; may include veneer when overlying till; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present.
GFl	**Glaciofluvial terraced sediments:** silt, sand, and gravel; 1–30 m or more thick; flat to gently sloping plain; surface may be channelled; if overlain by organic deposits greater than 1.5 m thick, permafrost may be present.
GFr	**Glaciofluvial esker sediments:** mainly gravel with sand; 1–30 m thick; long sinuous esker ridges and esker complexes, up to 30 m high.
GFv	**Glaciofluvial veneer:** mainly gravel and sand; 0.5–1.5 m thick; reflects topography of underlying material.
GF	**Glaciofluvial sediments, undifferentiated:** primarily gravel, sand, and silt; 1–30 m thick; complex that may contain various glaciofluvial units that are too small to be represented at the scale of mapping.

GLACIAL ENVIRONMENT

Th	**Hummocky till:** sand, gravel, and diamicton; 1–20 m thick; individual to coalescent glacial hummocks, with slopes up to 20 degrees; hummocky terrain may include minor ridges; moderately to strongly calcareous.
Tr	**Ridged till:** sand, gravel, and diamicton; 1–10 m thick; crevasse fillings or ridge moraine consisting of glacial individual, parallel to subparallel, straight to sinuous ridges within a moraine plain, 0.5–5 m relief, slopes of 5–30 degrees; may include minor Th; moderately to strongly calcareous.
Ts	**Streamlined till:** clay, silt, sand, pebbles, boulders, and diamicton, may include lenses; 2–30 m thick; consists largely of drumlins and drumlinoids, flutings; may be channelled; moderately to strongly calcareous; may contain segregated ice.
Tp	**Till plain:** clay, silt, sand, pebbles, boulders, and diamicton; 1.5–50 m thick; flat to uniformly sloping morainal plain, from 2–15 degrees; may be channelled; may include other minor till units and organic deposits; moderately to strongly calcareous.
Tv	**Till veneer:** sand, gravel, and diamicton; less than 1.5 m thick; reflects topography of underlying material; appears only as a secondary unit in stratigraphic relationships within polygons.
T	**Till, undifferentiated:** sand, gravel, and diamicton; 1–10 m or more thick; includes other minor till units, may include minor organic deposits, appears only as a secondary unit in stratigraphic relationships within polygons.

PRE-QUATERNARY

Rt	**Sedimentary bedrock:** hills developed on sandstone and shale with siltstone member; rounded summits; may be covered by discontinuous patches of colluvium, rubble, and reworked till with bare rock on slopes of summits; appears only as secondary unit in complex polygons and in stratigraphic relationships within polygons.

Complex units: two map-unit designators are used in cases where the surficial cover forms a complex area and the map units are too small to be mapped individually, yet constitute a significant areal extent of the total polygon (e.g. At.C designates an area of alluvial terraced sediments with colluvial deposits). In such instances a dot (.) is used to separate the map-unit designators.

Stratigraphic relationship: a stratigraphic relationship is shown with two map-unit designators separated by a slash (/) (e.g. At/T indicates alluvial terraced sediments overlying till).

- Thermokarst area
- Patterned ground, small
- Extensive gullied, channelled, or eroded terrain
- Geological contact:
  - *Defined*
  - *Approximate*
- Landslide escarpment:
  - *Potential slumping*
  - *Active*
- Terrace scarp, escarpment
- Beach crest, depositional
- Meltwater channel:
  - *Minor; palecurrent direction unknown*
  - *Minor; palecurrent direction known*
  - *Major; palecurrent direction known*
- Moraine ridge:
  - *Minor; unspecified*
  - *Major; end or lateral*
- Esker:
  - *Palecurrent direction unknown*
  - *Palecurrent direction known*
- Drumlinoid
- Drumlin
- Small outcrop
- C-1-III Station location, drillhole location, ground observation, with number (see Map Information Document)

Recommended citation
Geological Survey of Canada, 2018. Surficial geology, Fort Simpson, Northwest Territories, NTS 95-H; Geological Survey of Canada, Canadian Geoscience Map 369 (Surficial Data Model v. 2.3.14 conversion of Map 3-1978); scale 1:125 000. https://doi.org/10.4095/308384

Geological Survey of Canada
Canadian Geoscience Maps

Author: Geological Survey of Canada

Geology by N.W. Rutter, G.V. Minning, and J.A. Netterville, 1971

Geological compilation by R.J. Hawes, 1975

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

Geological data conversion by D.E. Kerr, 2016, 2017

Geology has been spatially adjusted to fit the updated base.

Geomatics by S. Eagles, J. Kingsley, and C. Stevens

Cartography by E. Everett

Scientific editing by A. Weatherston

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

CANADIAN GEOSCIENCE MAP 369
SURFICIAL GEOLOGY
FORT SIMPSON
Northwest Territories
NTS 95-H
1:125 000

Map projection Universal Transverse Mercator, zone 10
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 2018, 18°46'E, decreasing 20.3' annually
Readings vary from 19°09'E in the NW corner to 18°22'E in the SE 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.

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