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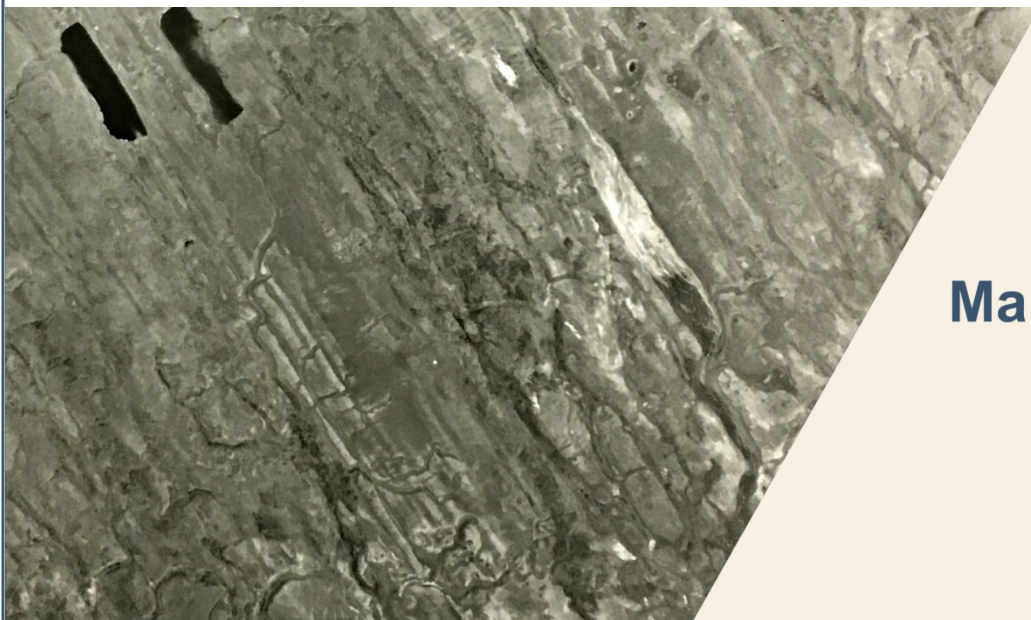
CANADIAN GEOSCIENCE MAP 306

RECONNAISSANCE SURFICIAL GEOLOGY

LAC LA MARTRE

Northwest Territories

NTS 85-M



Map Information Document

Preliminary

**Geological Survey of Canada
Canadian Geoscience Maps**

2017

Canada 



MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 306 (Preliminary)

TITLE

Reconnaissance surficial geology, Lac la Martre, Northwest Territories, NTS 85-M

SCALE

1:125 000

CATALOGUE INFORMATION

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ABSTRACT

Streamlined landforms are prevalent in the northwest and central regions, interspersed between zones of till and ridged and hummocky till elsewhere. Small moraines west of Lac la Martre form ridges parallel to fluted landforms, and some are dissected by meltwater corridors. Eskers trend southwestward with a few exceptions.

Glaciolacustrine sediments, associated with glacial Lake McConnell, occupy poorly-drained low-lying areas of the southernmost map area. West of Lac la Martre and Bartlett Lake, some glaciofluvial sediments and bedrock ridges were reworked into glaciolacustrine beaches between 270 and 300 m a.s.l. In southern regions, extensive organics with thermokarst are common. A northwestward ice flow in northern and central regions is overprinted by a younger and weaker westward flow. Southwestward and westward ice flow is recorded in eastern and southern regions. Larger moraines near the intersection of these flows may mark the retreat of ice margins or stagnating lobes.

RÉSUMÉ

Des reliefs fuselés sont répandus dans les régions du nord-ouest et du centre. Ailleurs, ils sont dispersés entre des zones de till non différencié, de till à crêtes morainiques et de till bosselé. Une série de petites moraines à l'ouest du lac la Martre forment des crêtes parallèles à des reliefs profilés et certaines d'entre elles sont recoupées par des corridors d'eau de fonte. Les eskers sont dirigés vers le sud-ouest, sauf quelques exceptions. Des sédiments glaciolacustres, associés au Lac glaciaire McConnell, occupent les basses terres mal drainées à l'extrémité sud de la région cartographique. À l'ouest des lacs la Martre et Bartlett, des sédiments fluvioglaciaires et de crêtes du substratum rocheux ont été remaniés sous la forme de plages glaciolacustres, entre 270 et 300 m au-dessus du niveau de la mer. Dans les régions du sud, on observe de vastes étendues de dépôts organiques présentant des reliefs thermokarstiques. Dans les régions du nord et du centre, aux traces d'un écoulement glaciaire dirigé vers le nord-ouest se superposent celles d'un écoulement plus récent et de plus faible intensité dirigé vers l'ouest. Dans les régions de l'est et du sud, on relève des traces d'écoulements glaciaires vers le sud-ouest et l'ouest. Des moraines de plus grande taille présentes à proximité de la rencontre de ces écoulements pourraient marquer la position de marges glaciaires en retrait ou de lobes stagnants lors de la déglaciation.

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SHEET 1 OF 1, RECONNAISSANCE SURFICIAL GEOLOGY

GENERAL INFORMATION

Authors: D.E. Kerr, P.D. Morse, and S.A. Wolfe

Geology by D.E. Kerr, 2016 by airphoto interpretation of 1:70 000 scale airphotos taken in 1953.

Geology conforms to Surficial Data Model v. 2.2

Geomatics by L. Robertson

Cartography by D. Viner

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

Map projection Universal Transverse Mercator, zone 11.
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

Mean magnetic declination 2017, 19°07'E, decreasing 23.3' annually. Readings vary from 18°36'E in the SE corner to 19°36'E in the NW corner of the map.

This map is not to be used for navigational purposes.

Title photograph: Flutings dissected by meltwater channels. NAPL A14396-66

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.

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.

DESCRIPTIVE NOTES

An abundance of glacially streamlined landforms and hummocky till with numerous minor moraines and larger ridges dominate the Lac la Martre landscape. Drumlins and drumlinoids, up to 8 km long or more, are most prevalent in the northwest and central regions, whereas they are interspersed between zones of undifferentiated till and ridged and hummocky till elsewhere. The general direction of streamlined landforms varies from northwestward to southwestward trending. A series of small moraines west of Lac la Martre form ridges parallel to fluted landforms, and some are dissected by meltwater corridors. Eskers are rare and trend southwestward, except for a few smaller segments trending northwest in the northwest map area. Fine-grained glaciolacustrine sediments, associated with glacial Lake McConnell, were deposited as veneers in broad, poorly-drained low-lying areas of the southernmost map area. Inland from the western shores of Lac la Martre and Bartlett Lake, some glaciofluvial sediments and shattered bedrock ridges were reworked into glaciolacustrine beaches. Beaches occur between 270 and 300 m a.s.l., and mark the decreasing elevation of the short-lived glacial lake. Glaciolacustrine sediments and till in the southern regions are commonly overlain by extensive organics and exhibit thermokarst activity. Ice flow in the northern and central regions was dominantly to the northwest, but is overprinted by a younger and weaker westward flow. A southwestward and westward ice flow is recorded in the eastern and southern regions. The larger moraines near the intersection of these flows may mark the retreat of ice margins or stagnating lobes during deglaciation about 11–10 ka BP.

REFERENCES

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., Smith, I.R., and Weatherston, A., 2016. Surficial Data Model, version 2.3.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8041, 45 p. doi:10.4095/298767

Douglas, R.J.W., Norris, A.W., and Norris, D.K., 1960. Geology, Horn River, District of Mackenzie, Northwest Territories; Geological Survey of Canada, Preliminary Map 48-1959, scale 1:506 880. doi:10.4095/108638

AUTHOR CONTACT

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COORDINATE SYSTEM

Projection: Universal Transverse Mercator

Units: metres

Zone: 11

Horizontal Datum: NAD83

Vertical Datum: mean sea level

BOUNDING COORDINATES

Western longitude: 120°00'00"W

Eastern longitude: 118°00'00"W

Northern latitude: 64°00'00"N

Southern latitude: 63°00'00"N

SOFTWARE VERSION

Data has been originally compiled and formatted for use with ArcGIS™ desktop version 10.2.2 developed by ESRI®.

DATA MODEL INFORMATION

Surficial

The Geological Survey of Canada (GSC) through the Geomapping 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:

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., Smith, I.R., and Weatherston, A., 2016. Surficial Data Model, version 2.2.0: Revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8041, 45 p.
doi:10.4095/298767