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CANADIAN GEOSCIENCE MAP 290

RECONNAISSANCE SURFICIAL GEOLOGY

RAE

Northwest Territories
NTS 85-K



Map Information
Document

Preliminary

Geological Survey of Canada
Canadian Geoscience Maps

2016

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MAP NUMBER

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 290 (Preliminary)

TITLE

Reconnaissance surficial geology, Rae, Northwest Territories, NTS 85-K

SCALE

1:125 000

CATALOGUE INFORMATION

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ABSTRACT

Following deglaciation about 11–10 ka BP, fine-grained glaciolacustrine sediments, associated with glacial Lake McConnell, were deposited in most of the map area, up to 290 m above sea level (a.s.l.). These sediments overlie buried ice-flow features such as

drumlinoids, drumlins, crag-and-tails and fluted bedrock, recording a southwestward ice flow during the last glaciation. A broad discontinuous band of till extends SE-NW in the central part of the map area. Glaciofluvial sediments and some bedrock ridges were reworked into glaciolacustrine beaches throughout the area. These beaches, present at an elevation up to 300–310 m a.s.l., mark the decreasing elevation of the glacial lake over time due to isostatic rebound. In the southwest, only the Horn Plateau, consisting of undifferentiated glacial deposits with colluvium on its slopes, remained above the limit of glaciolacustrine inundation. Minor glaciolacustrine iceberg scours in the southeast and postglacial eolian dunes in the south-central regions trend SE-NW. The fine-grained glaciolacustrine sediments may be overlain by organics and exhibit thermokarst activity.

RÉSUMÉ

À la suite de la déglaciation vers 11–10 ka BP, des sédiments glaciolacustres fins, associés au Lac glaciaire McConnell, se sont déposés dans la majeure partie de la région cartographique jusqu'à une altitude de 290 m au-dessus du niveau de la mer. Ces sédiments cachent des entités liées à l'écoulement des glaces comme des drumlinoïdes, des drumlins, des structures en crag-and-tail et un substratum rocheux cannelé, lesquelles rendent compte d'un écoulement glaciaire dirigé vers le sud-ouest lors de la dernière glaciation. Une large bande discontinue de till s'étend suivant une orientation nord-ouest–sud-est dans le centre de la région cartographique. Dans l'ensemble de la région, des sédiments fluvioglaciaires et des crêtes du substratum rocheux ont été remaniés sous la forme de plages glaciolacustres. Ces plages, qui s'observent jusqu'à des altitudes de 300–310 m au-dessus du niveau de la mer, témoignent de l'altitude décroissante du lac glaciaire dans le temps en réponse au relèvement isostatique. Au sud-ouest, seul le plateau Horn, formé de dépôts glaciaires non différenciés ainsi que de colluvions sur ses versants, a échappé à l'inondation lacustre. Des sillons d'affouillement par des icebergs en milieu glaciolacustre en faible abondance au sud-est ainsi que des dunes éoliennes postglaciaires dans les régions centre sud présentent une orientation nord-ouest–sud-est. Parfois, les sédiments glaciolacustres fins sont recouverts de dépôts organiques et portent les signes d'une activité thermokarstique.

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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, airphoto interpretation of 1:70 000 scale photos taken in 1953, and P.D. Morse, remote imagery analysis, 2015, 2016

Surficial geology conforms to Surficial Data Model v. 2.1

Geomatics by J. Kingsley

Cartography by M.J. Baldock

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 2016, 18°17'E, decreasing 21.1' annually. Readings vary from 17°42'E in the SE corner to 18°51'E in the NW corner of the map.

This map is not to be used for navigational purposes.

Title photograph: Glaciolacustrine sediments undergoing erosion.
Photograph by P.D. Morse. 2016-054

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.

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., 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

Day, S.J.A., Lariviere, J.M., McNeil, R.J., Friske, P.W.B., Cairns, S.R., McCurdy, M.W., and Wilson, R.S., 2007. Regional Stream Sediment and Water Geochemical Data, Horn Plateau area, Northwest Territories (Parts of NTS 85E, 85F, 85K, 85L, 95H, 95I and 95J) Including Analytical, Mineralogical and Kimberlite Indicator Mineral Data; Geological Survey of Canada, Open File 5478 / NWT Geoscience Office Contribution 0027, 1 CD-ROM. doi:10.4095/224262

Whittaker, E.J., 1922. Mackenzie River District Between Great Slave Lake and Simpson, Northwest Territories; Summary Report 1921 Part B; Geological Survey of Canada, p. 45–55.

ADDITIONAL INFORMATION

The Additional Information folder of this product's digital download contains figures and tables that appear in the map surround as well as additional geological information not depicted on the map, nor this document, nor the geodatabase.

-PDF of Supplementary Information report that does not appear in the CGM surround

AUTHOR CONTACT

Questions, suggestions, and comments regarding the geological information contained in the data sets should be addressed to:

D.E. Kerr
Geological Survey of Canada
601 Booth Street
Ottawa ON
K1A 0E8
dan.kerr@canada.ca

COORDINATE SYSTEM

Projection: Universal Transverse Mercator
Units: metres
Zone: 11
Horizontal Datum: NAD83
Vertical Datum: mean sea level

BOUNDING COORDINATES

Western longitude: 118°00'00"W

Eastern longitude: 116°00'00"W

Northern latitude: 63°00'00"N

Southern latitude: 62°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., 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.
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