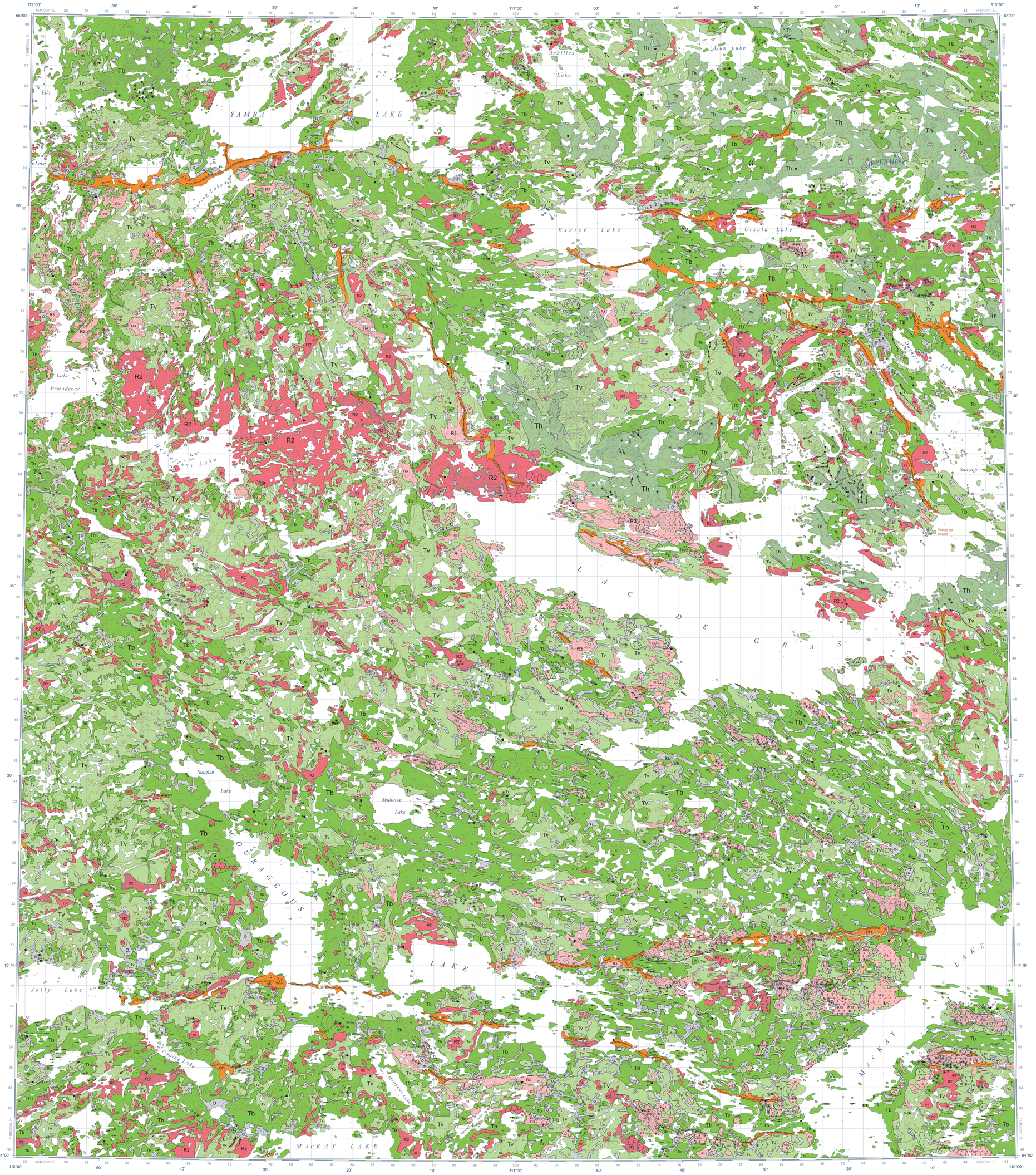


QUATERNARY

HOLOCENE

NONGLACIAL ENVIRONMENT

O — **Organic deposits, undifferentiated:** peat and muck up to 2 m thick; formed predominantly by the accumulation of vegetative material in bogs; occurs in depressions and along valley bottoms; permafrost is commonly present; contains small palsas, ice-wedge polygons, and thermokarst collapse structures; small unmapped organic deposits occur in most terrain units.

PLEISTOCENE (WISCONSIN GLACIATION)

GLACIAL ENVIRONMENT

GLACIOFLUVIAL SEDIMENTS: sand, gravel, and minor silt more than 1 m thick; sorting ranges from good to poor, and stratification from massive or cross-stratified to planar bedded; deposited by water flowing from, or in contact with, glacier ice.

GFf — **Subaerial outwash fan sediments:** rounded gravel and sand; massive to cross-stratified; probably less than 5 m thick; occurs as braided fans.

GFr — **Esker sediments:** sand, silt, and gravel; in planar, cross-stratified, and massive beds; 1 to 40 m thick; forms ridges with both sharp-crested and flat-topped segments, mounds, and flanking aprons; deposited at or behind the ice margin; formed subglacially or in subaerially exposed ice-walled channels; zones of washed rock, small transverse gravel ridges associated with this unit, isolated kame deposits are shown by symbols.

GLACIAL SEDIMENTS (TILL): unsorted glacial debris (diamicton), consisting of a silty sand matrix containing pebbles, cobbles, and boulders, with minor lenses of sorted sediments; deposited beneath, or along the margin of, glaciers as lodgement till, meltout till, and gravity flow deposits.

Tv — **Till veneer:** less than 2 m thick; rock structure is generally visible on airphotos; unit includes patches of bedrock and till blanket.

Tb — **Till blanket:** from 2 to 10 m thick; occurs as till plains mimicking bedrock topography or as drumlinoids; small rock outcrops in this unit are shown by symbols.

Th — **Hummocky till:** from 5 to 30 m thick; forms irregular to rolling terrain with relief up to 15 m; some areas have abundant small meltwater channels and lag concentrations of boulders in depressions.

PRE-QUATERNARY

BEDROCK: Precambrian granitic, gneissic, metasedimentary and metavolcanic rocks, mafic dykes and minor, younger (Tertiary?) kimberlite; may include patches of till veneer or glaciofluvial sediments; areas of shattered and frost-heaved rock (felsenmeer), particularly on metasediments, are designated by symbols.

R2 — **Igneous bedrock:** volcanic, granitoid.

R3 — **Metamorphic bedrock:** metasedimentary rocks.

Felsenmeer, frost heaved and shattered rock

Washed scoured lag

Concentration of glacially abraded boulders

Geological contact, defined

Beach crest, raised beach

Minor meltwater channel, sense known

Major moraine ridge

Esker ridge, sense unknown

Esker ridge, sense known

Drumlinoid

Crag-and-tail

Fluted bedrock, sense known

Thermokarst depression

Patterned ground, ice wedge polygon

Kame, gravelly transverse ridge

Striation (poorly defined, ice flow direction unknown)

Striation (poorly defined, ice flow direction known)

Striation (well defined, ice flow direction unknown)

Striation (well defined, ice flow direction known)

Ice-flow measurement - crossed striae (1 = oldest, 4 = youngest)

Small outcrop

Station location

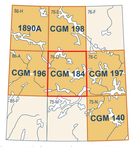
Sample location

Abstract

This new surficial geology map product represents the conversion of A-Series Map 1870A and its legend only, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.0) which can be found in Open File 7631. All geoscience knowledge and information from Map 1870A that conformed to the current SDM were maintained during the conversion process. 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 geologic map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geo-database which can expand following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit dérivé de la carte de géologie de surface 1870A et la légende seulement, a été produit avec le Modèle de données des formations superficielles (MDFS version 2.0) de la Commission géologique du Canada qui a été publié sous forme de dossier public 7631. La connaissance et toutes les données de la carte 1870A se retrouvant dans le MDFS ont été maintenues pendant le processus de conversion. Le but de convertir les cartes publiées antérieurement en langage scientifique commun et en légende commune est de permettre et faciliter la compilation, l'interprétation, la gestion et la diffusion numériques efficace d'information de cartes géologiques de façon structurée et cohérente. Cette base de données géospatiales est un outil de gestion 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

Catalogue No. M183-1/184-2014E-PDF
ISBN 978-1-100-23452-6
doi:10.4095/293964

Natural Resources Canada — Ressources naturelles du Canada

CANADIAN GEOSCIENCE MAP 184

SURFICIAL GEOLOGY

LAC DE GRAS

Northwest Territories

NTS 76-D

1:125 000

Recommended citation

Geological Survey of Canada, 2014. Surficial geology, Lac de Gras, Northwest Territories, NTS 76-D; Geological Survey of Canada, Canadian Geoscience Map 184 (preliminary, Surficial Data Model v. 2.0 conversion of Map 1870A), scale 1:125 000, doi:10.4095/293964.

Author: Geological Survey of Canada

Geology by B.C. Ward, L.A. Dredge, and D.E. Kerr, 1997

Geology conforms to Surficial Data Model v. 2.0

Data conversion by D.E. Kerr and S. Eagles, 2012–2013

Geology has been spatially adjusted to fit the updated base

Geomatics and cartography by M. Kremer and R. Chan

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

Map projection Universal Transverse Mercator, zone 12. North American Datum 1983

SURFICIAL GEOLOGY

LAC DE GRAS

Northwest Territories

NTS 76-D

1:125 000

2 0 2 4 6 8 10 km

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 2014, 15°28'E, decreasing 29' annually. Readings vary from 16°21'E in the NW corner to 14°32'E in the SE corner of the map.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. *See* documentation accompanying the data.

This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/).

Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 184

SURFICIAL GEOLOGY

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