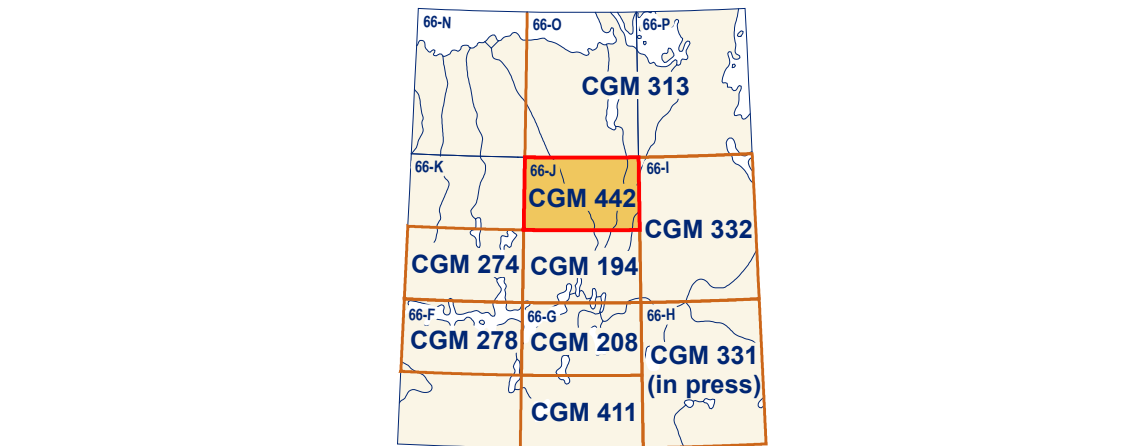


Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2019. Surficial Data Model: the science language of the integrated Geological Survey of Canada data model for surficial geology maps. Geological Survey of Canada, Open File 8236, ver. 2.4.0, 1 .zip file. <https://doi.org/10.4095/329417>

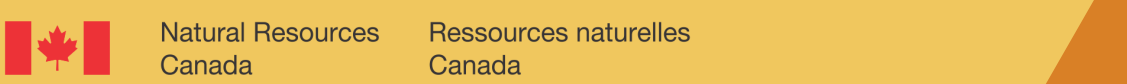
Abstract
The northwest part of the Joe Lake North map area is dominated by glaciated granitic and gneissic bedrock, and small lake basins. The remainder of the area is gently rolling terrain consisting of a major north-trending drumlin field, four esker systems, and marine deposits that lie between the drumlins. Postglacial marine deposits occupy much of the terrain in the north part of the map area. The limit of postglacial marine submergence is at about 180 m a.s.l. in the southwest, and at about 170 m elsewhere, as determined by wave-washed trimlines on drumlins, and several ice-contact deltas on eskers. Well formed beaches are rare, but drumlins have been reworked to varying degrees. Those at higher elevations in the south have been only slightly modified by postglacial seas, whereas those at lower elevations in the north are covered by a veneer of marine deposits.

Résumé
La partie nord-ouest de la région cartographique de Joe Lake Nord est dominée par des affleurements d'un substratum rocheux granitique et gneissique, modifié par l'action des glaciers et de petits bassins lacustres. Le reste de la région présente un terrain légèrement vallonné marqué d'un important champ de drumlins de direction nord, de quatre systèmes d'esker et de dépôts marins occupant les zones entre les drumlins. Les dépôts marins postglaciaires occupent une grande partie du terrain dans la portion nord de la région cartographique. La limite de l'invasion marine postglaciale se situe à environ 180 m ASL dans le sud-ouest, et à environ 170 m ailleurs, tel que déterminé par des équivalents de assèchement par les vagues sur les drumlins et plusieurs deltas juxtaposés sur les eskers. Les plages bien formées sont rares, mais les drumlins ont été retravaillés à des degrés divers. Ceux qui se trouvent à des altitudes plus élevées dans le sud n'ont été que légèrement modifiés par les mers postglaciaires, tandis que ceux qui se trouvent à des altitudes inférieures dans le nord sont recouverts d'un placage de dépôts marins.

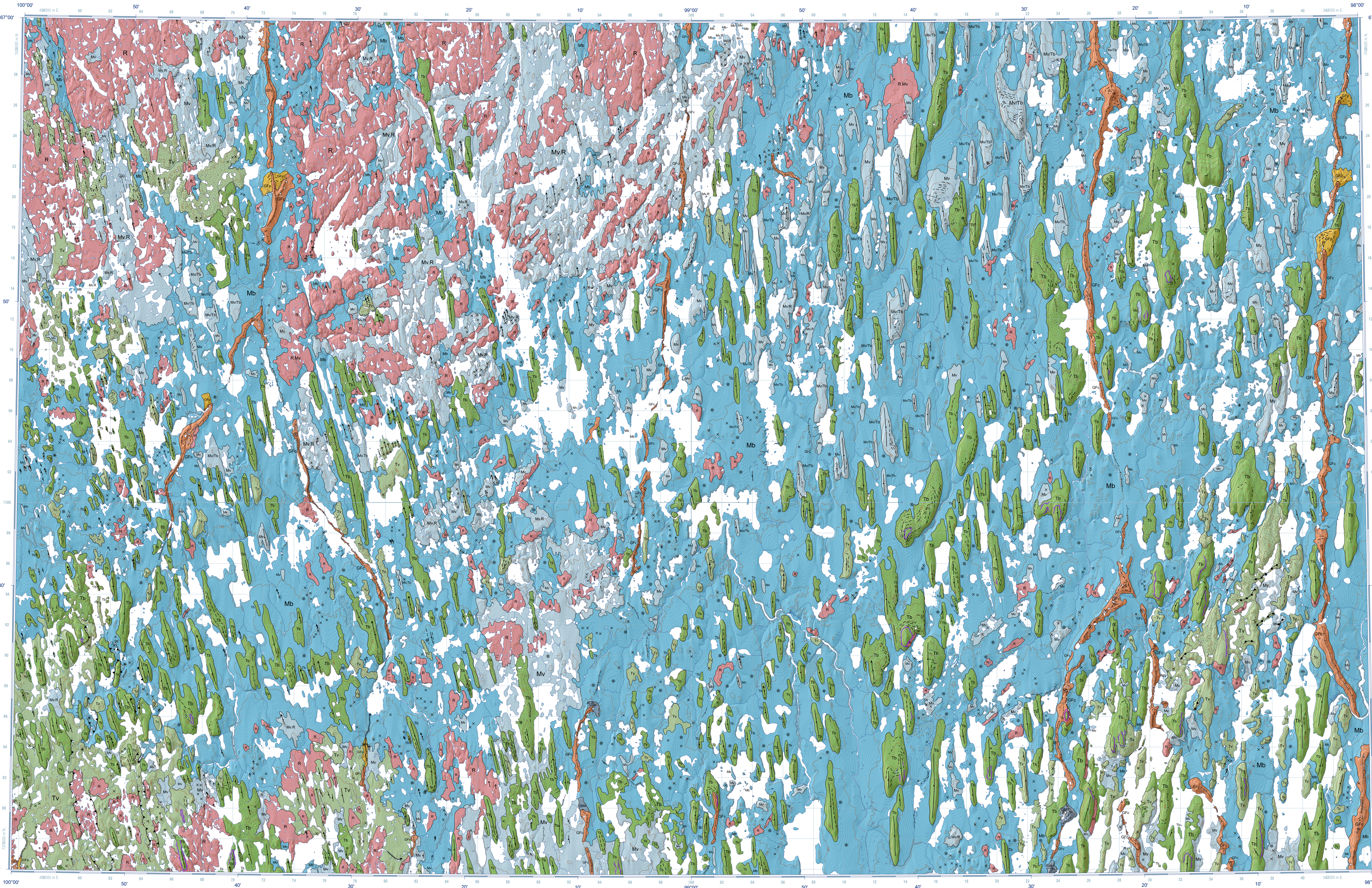
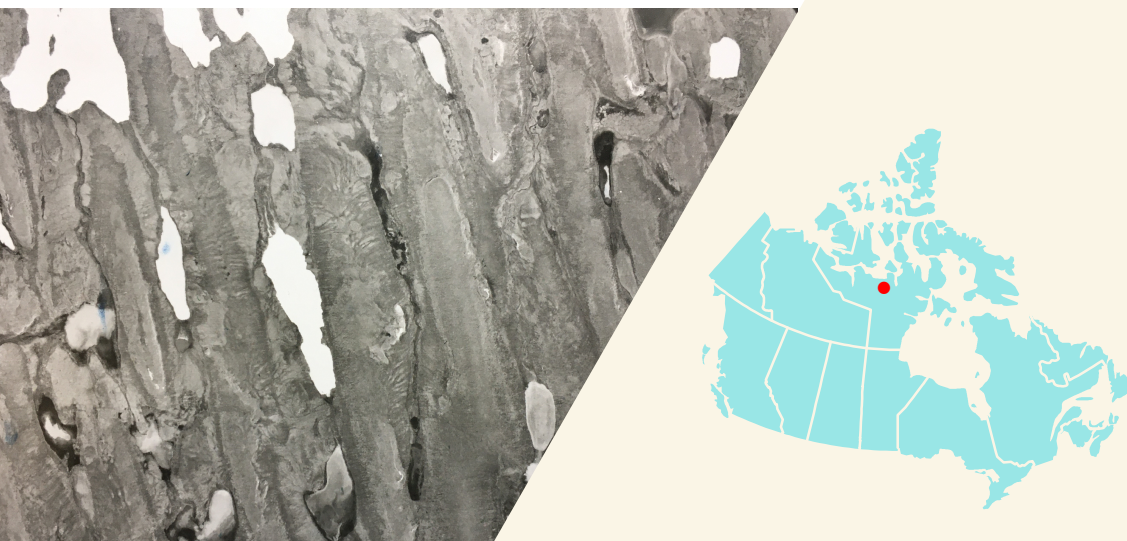


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CANADIAN GEOSCIENCE MAP 442
RECONNAISSANCE SURFICIAL GEOLOGY
JOE LAKE NORTH
Nunavut
NTS 66-J north
1:100 000



- QUATERNARY**
- HOLOCENE-LATE PLEISTOCENE**
- MARINE DEPOSITS:** sediments deposited in a postglacial sea; 1 to 10 m thick; occur extensively in this map area up to an elevation of 170 m above present sea level.
- Mv** Marine veneer: sand and gravel; less than 2 m thick; mimics surface of underlying reworked till deposits, or of underlying bedrock.
 - Mb** Marine blanket: sand and silt; 2 to 10 m thick; occurs as flat to gently sloping surfaces with thermokarst ponds; forms a continuous cover of littoral and offshore sediments that masks underlying sediments and bedrock.
 - Gmd** Deltatic sediments: sand, gravel; 2 to 10 m thick; form flat and gently sloping surfaces where glaciofluvial sediments in meltwater corridors entered high-level postglacial seas.
- GLACIOFLUVIAL DEPOSITS:** sand, gravel, and minor silt; moderately to well sorted; massive to stratified; deposited by glacial meltwater streams from, or in contact with, glacial ice in a subglacial, englacial, or proglacial subaerial environment.
- Gfp** Outwash sediments: sand and gravel; 2 to 10 m thick; moderately to well sorted and stratified; form as subaerial deposits in a proglacial environment; some surfaces contain ice-wedge polygons and beaches.
 - Gfc** Ice-contact sediments: gravel, sand, and cobbles; 2 to 20 m thick; moderately sorted; massive to stratified; deposited in a subglacial or englacial environment by melting ice; form eskers and kames; predominantly found within subglacial or englacial meltwater corridors; surfaces have been modified by postglacial seas.
- GLACIAL DEPOSITS:** stony silty sand to sandy diamiction (Bt); thickness can exceed 20 m in streamlined landforms but is generally less than 5 m; unsorted to poorly sorted; generally massive; largely deposited beneath active ice; clasts are subangular to subrounded and predominantly derived from gneissic granitoid rocks; landforms have been degraded and reworked by postglacial seas.
- Tv** Till veneer: bouldery, silty sand diamiction; generally less than 2 m thick; forms a discontinuous cover over bedrock and is interspersed with many outcrops; deposits mimic underlying bedrock structure; may be fluted; surfaces frequently covered with boulders; frost boils are common.
 - Tb** Till blanket: diamiction with a sandy or bouldery, silty sand matrix; 2 m to greater than 10 m thick; forms a continuous cover that generally masks underlying bedrock topography; occurs as streamlined features in the form of drumlins, or rolling till plain; surface boulders and frost boils are common.
- PRE-QUATERNARY**
- BEDROCK:** Archean to Paleoproterozoic metamorphosed igneous and supracrustal rocks.
- R** Bedrock, undifferentiated: intact and frost-riven outcrops of Precambrian granite and gneiss, variably modified by glacial erosion; surfaces range from rough to glacially polished and striated.

Complex units: two map-unit designators separated by a dot (.) are used where the surficial cover forms a complex area and the units are too small to be mapped individually (e.g. R.Mv designates an area of bedrock interspersed with marine sediments). The map-unit polygon is coloured according to the dominant unit and labeled in descending order of cover.

Stratigraphic relationship: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. Mv/Tb designates marine sediments overlying till blanket). The map-unit polygon is coloured according to the overlying unit.

- Geological boundary (confidence defined)
- Thermokarst depression
- Ice-wedge polygons
- Reworked sediments
- Beach ridge crest
- Kettle
- Limit of marine submergence
- Meltwater channel
- Subglacial meltwater corridor
- Moraine ridge:
 - Minor
 - Major
- Ice-contact scarp
- Kame
- Esker ridge:
 - Direction known or inferred
 - With superimposed beach ridges
- Drumlinoid ridge (1 = oldest, 2 = youngest)
- Crag-and-tail form
- Fluted bedrock
- Small outcrop

Recommended citation
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<https://doi.org/10.4095/329417>

RECONNAISSANCE SURFICIAL GEOLOGY
JOE LAKE NORTH

Nunavut
NTS 66-J north
1:100 000



Initiative of the Geological Survey of Canada, conducted under the auspices of the GSCAR Real Geospatial Synthesis project as part of Natural Resources Canada's Geomapping for Energy and Minerals (GEM) program.

Map projection: Universal Transverse Mercator, zone 14 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.

Shaded-relief image derived from the digital elevation model supplied by Geospatial Data Extraction CDED.

Illumination: azimuth 315°, altitude 45°; vertical factor 1x.

Author: L.A. Drudge

Geology based on aerial photography interpretation by L.A. Drudge

Geomatics by L. Robertson

Cartography by D. Viner

Scientific editing by L. Ewert

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 2022, 0°48'E, increasing 8.4° annually.

Readings vary from 0°46'W in the NE corner to 2°19'W in the SW corner of the map.

This map is not to be used for navigational purposes.

File photograph: Part of the drumlin field, and intervening marine deposits. Marine-limit trimline are visible on some drumlins. Ice flow is towards the north. Photo from the National Air Photo Library.

NAPL photo A14509-50

The Geological Survey of Canada welcomes corrections (geopublications-geopublications@nrcan-nrcan.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/>).