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

Dyke, A.S. and Peltier, W.R., 2000. Forms, response times and variability of relative sea-level curves, glaciated North America; Geomorphology vol. 32, p. 315–333. https://doi.org/10.1016/s0169-555x(99)00102-6

Little, E.C., 2006. Surficial geology, Ellice Hills (north), Nunavut; Geological Survey of Canada, Open File 5016, scale 1:50 000, 1 .zip file. https://doi.org/10.4095/222142

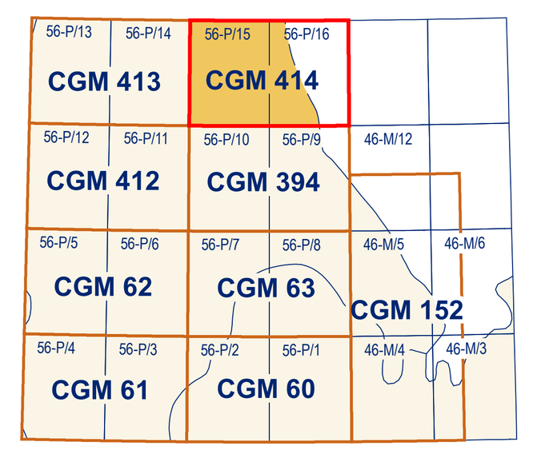
McMartin, I., Utting, D.J., Little, E.C., Ozyer, C.A., and Ferbey, T., 2003. Complete results from the Committee Bay drift prospecting survey, central Nunavut (NTS 56-K, 56-J north, 56-O south, and 56-P); Geological Survey of Canada, Open File 4493, 1 .zip file. https://doi.org/10.4095/214646

Abstract

This new surficial geology map product represents the conversion of Open File 5016, map 4 (Little, 2006) and its legend only, 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 Open File 5016, map 4 that conformed to the SDM were maintained during the conversion process. Supplementary legacy information (descriptive notes) on the original map is not included here. Limited legacy information was added to complement the converted geoscience data. This consists of striations (McMartin et al., 2003). It is identified in the accompanying geodatabase. 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

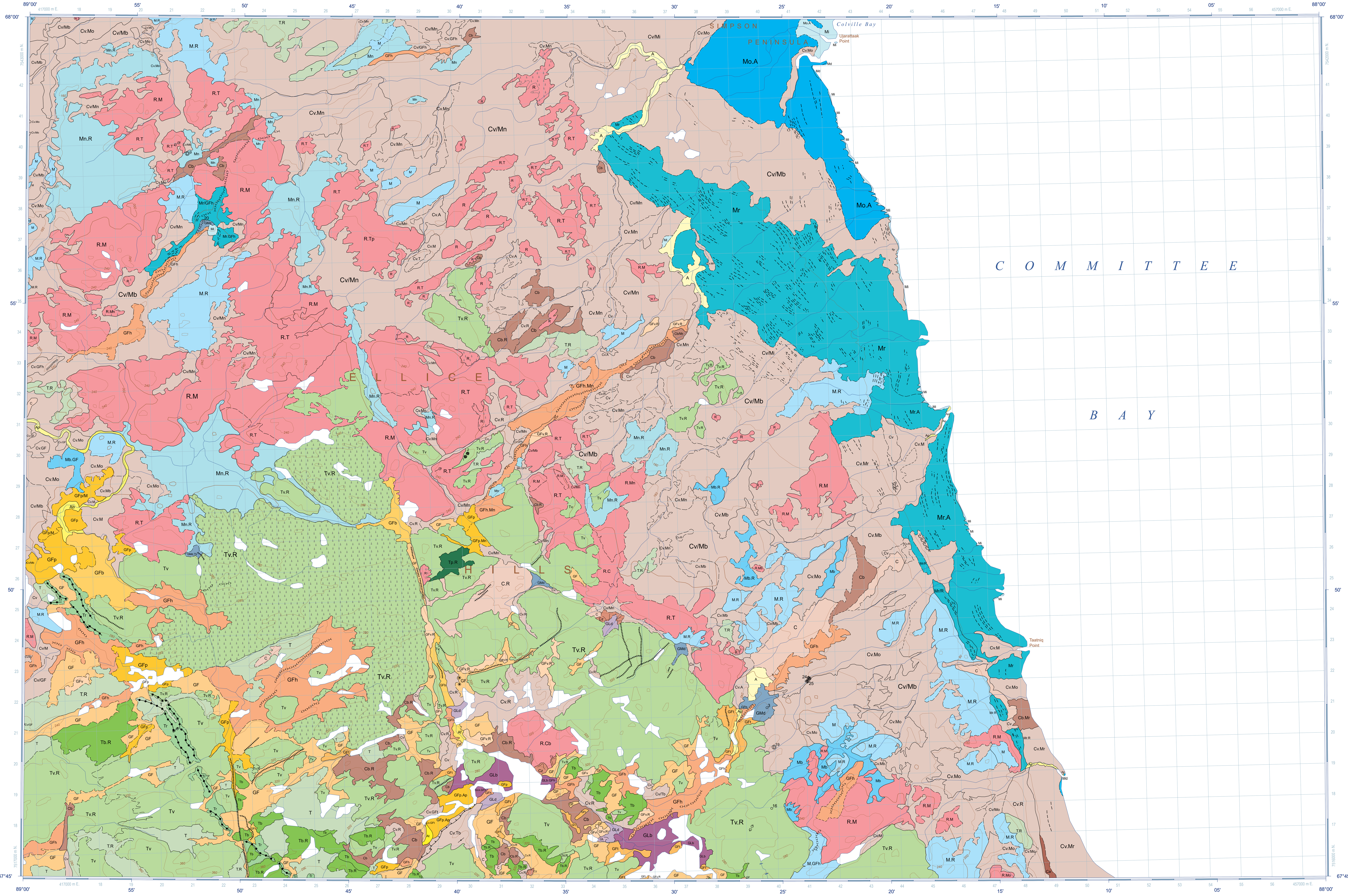
Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la carte 4 du Dossier public 5016 (Little, 2006) et de sa légende uniquement, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la carte 4 du Dossier public 5016 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. De l'information additionnelle (notes descriptives) présente sur 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 sur des stries glaciaires tirées de McMartin et al. (2003). Ces données sont identifiées dans la géodatabase de la carte. 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 de la géologie des formations superficielles.



National Topographic System reference and index to adjoining published Geological Survey of Canada maps

Catalogue No. M183-1/414-2022E-PDF
ISBN 978-0-660-31221-7
https://doi.org/10.4095/329414

NATURAL RESOURCES CANADA
GEOLOGICAL SURVEY OF CANADA
CANADIAN GEOSCIENCE MAP 414
CANADA-NUNAVUT GEOSCIENCE OFFICE
OPEN FILE MAP 2022-05
SURFICIAL GEOLOGY
UJARATTAAK POINT
Nunavut
NTS 56-P/15 and 16
1:50 000



QUATERNARY
HOLOCENE
POSTGLACIAL ENVIRONMENT

ALLUVIAL SEDIMENTS: silt, sand, and gravel deposited by streams either within channels or as overbank deposits; deposits are usually stratified and moderately to well sorted, with the exception of some alluvial fan deposits.

Ap — **Floodplain sediments:** predominantly sands and gravels; thickness ranges from 1 to 5 m; may be locally overlain by or include lacustrine silt, clay, and minor peat and organic silt deposited in abandoned channels and along floodplain margins; typically form plains within approximately 1 m of present stream level.

Af — **Fan sediments:** gravel and gravelly diamicton, stratified, poorly to moderately sorted; thickness can reach up to 10 m; forms fan-shaped landforms where streams enter larger valleys.

At — **Terraced sediments:** sand and gravel with minor silt, massive to stratified, moderately to well sorted; thickness ranges from sporadic cover on bedrock to several metres; terraced sediments are of floodplain origin and presently isolated from flooding by stream incision.

Ab — **Alluvial blanket:** silt, sand, and gravel; varied thickness but greater than 1 to 2 m; comprising only alluvial-related units such as units Ap, At, and/or Af.

A — **Alluvial sediments, undifferentiated:** complex of alluvial units too small to be represented at the scale of mapping; varied thickness; consists primarily of alluvial units but may have relatively small pockets of colluvium, till, and glaciolacustrine, glaciofluvial, glaciomarine, and/or marine sediments.

HOLOCENE AND LATE PLEISTOCENE (WISCONSINAN GLACIATION)
PERIGLACIAL AND GLACIAL ENVIRONMENT

COLLUVIAL DEPOSITS: typically less than 1 m thick, but can reach thicknesses up to 2 m; poorly sorted, unconsolidated debris (diamicton) deposited on slopes; derived from bedrock or glacial parent materials.

Ca — **Colluvial apron deposits:** diamicton and poorly sorted sand and gravel, stratified; thickness up to 10 m, thinning at head and toe of deposit; deposit forms a wedge-shaped, slope-toe complex of relatively small steep debris flows, avalanche-dominated fans, and soliflucted deposits derived from bedrock and glacial debris.

Cz — **Landslide deposits:** diamicton; thickness is highly varied, but may reach up to 10 m; formed of broken rock, soil, and glacial deposits; form a hummocky or ridged topography with ridges transverse to direction of movement; direction of movement indicated by symbol.

Cv — **Colluvial veneer:** diamicton and other materials; less than 1 m thick or discontinuous sheets of colluvial materials; colluvial veneer may form complex units with another surficial material.

Cb — **Colluvial blanket:** diamicton; thickness greater than 1 m; forming a mantle of colluvial material.

C — **Colluvial deposits, undifferentiated:** colluvial units too small to be represented at the scale of mapping; varied thickness; consists primarily of colluvial units, but may have relatively small pockets of alluvium, till, and glaciolacustrine, glaciofluvial, glaciomarine, and/or marine sediments.

POSTGLACIAL AND GLACIAL ENVIRONMENT

MARINE AND GLACIOMARINE SEDIMENTS: sediments deposited from suspension in a marine or glaciomarine environment by submarine gravity flows, and those sediments that accumulate in the littoral zone.

Mr — **Marine beach sediments:** sand and gravel, generally well sorted material; thickness ranges from 1 to 5 m; locally include pockets of washed till; usually form flights of beach ridges (raised beaches), bars, spits, terraces, and ice-pushed ridges; this includes low sandy gravel ridges that also denote former beaches; commonly strewn with boulder lags; littoral sediments derived from reworking of upland surficial deposits; occurs commonly on the slopes of topographic highs.

Md — **Marine deltaic sediments:** sand and rounded gravels, cross-stratified; several meters thick; associated with fluvial deposition into a marine paleoenvironment; a scarp or face with a low-relief mantle.

Mi — **Marine intertidal sediments:** silty sand to silt and clay, moderately sorted material; locally containing pockets of nearshore silts and sands; thickness ranges from 1 to 10 m; tidal flats commonly strewn with a boulder lag; may include modern and paleoenvironments.

Mn — **Nearshore marine sediments:** silt to fine and/or medium sand, well sorted, massive or rhythmically stratified; thickness typically less than 5 m, but may reach 10 m; usually form thin sheets to gullied blankets that fill topographic lows.

Mo — **Marine offshore sediments:** silt, silty-clay, and clay, rhythmically stratified; thickness ranges from 1 m to greater than 20 m; usually form thick sequences that exhibit extensive gullying; locally fossiliferous.

Mb — **Marine blanket:** silt, sand, and gravel; varied thickness but greater than 1 to 2 m; comprising only marine-related units such as units Mn, Mr, Mi, and/or Md.

M — **Marine sediments, undifferentiated:** silt, sand, and gravel; varied thickness; complex may have relatively small pockets of alluvial or colluvial sediments, till, and glaciofluvial, and/or glaciomarine sediments too small to be represented at the scale of mapping.

GMd — **Glaciomarine deltaic sediments:** sand and rounded gravels, cross-stratified; varied thickness; a scarp or face with a low-relief mantle associated with glaciofluvial deposition into a glaciomarine environment.

PROGLACIAL AND GLACIAL ENVIRONMENT

GLACIOLACUSTRINE SEDIMENTS: stratified sand, silt, and clay deposited in lakes dammed by glacial ice; distally deposited glaciolacustrine sediments typically underlie plains or gently rolling terrain; proximally deposited glaciolacustrine sediments may underlie ridged, hummocky, or pitted terrain caused by subsequent meltout.

GLd — **Deltaic sediments:** sand and rounded gravels, moderately to well sorted, cross-stratified; varied thickness; a scarp or face with a low-relief mantle of sand and gravel associated with glaciofluvial deposition into a glaciolacustrine environment.

GLb — **Glaciolacustrine blanket:** clay, silt, and sand, well stratified; thickness ranges from 1 m to greater than 20 m; a plain with local relief less than 1 m that masks the underlying topography.

GL — **Glaciolacustrine sediments, undifferentiated:** clay, silt, and sand; varied thickness; consists primarily of glaciolacustrine units, but may have relatively small pockets of alluvial or colluvial sediments, till, and glaciofluvial, glaciomarine, and/or marine sediments too small to be represented at the scale of mapping.

GLACIOFLUVIAL SEDIMENTS: well stratified to massive sand, gravel with minor silt, and diamicton deposited by streams flowing away from, or in contact with glacial ice; these sediments can range from well to poorly sorted; strata are commonly deformed due to syndepositional collapse from the meltout of supporting ice.

GFp — **Outwash plain sediments:** sand and rounded gravels, moderately to well sorted, cross-stratified; 1 to 20 m thick; forming low-relief mantle.

GFt — **Terraced sediments:** sand and rounded gravels, moderately to well sorted, cross-stratified; varied thickness; a scarp or face with a low-relief mantle of outwash sediments typically elevated above a lower level glaciofluvial or alluvial deposit.

GFh — **Hummocky sediments:** composed primarily of sand and gravel, poorly sorted; from 5 to 15 m thick; complex arrangement of slopes extending from rounded depressions, to irregular conical ice-contact mounds, and includes esker ridges.

GFv — **Glaciofluvial veneer:** gravel, sand, and silt, stratified to massive; thickness is typically less than 1 m; may occur in patches or as gravel lag over rock; may occur as a unit in complex polygons.

GFb — **Glaciofluvial blanket:** sand and gravel; varied thickness, but greater than 1 to 2 m thick; comprising units GFv, GFt, GFp, and/or GFh.

GF — **Glaciofluvial sediments, undifferentiated:** sand and gravel; varied thickness; consists primarily of glaciofluvial units, but may have relatively small pockets of alluvial or colluvial sediments, till, and/or glaciolacustrine sediments too small to be represented at the scale of mapping.

GLACIAL ENVIRONMENT

GLACIAL SEDIMENTS (TILL): diamicton (granule- to boulder-sized clasts suspended in a poorly sorted clay to sand matrix); ground moraine deposited directly by glacial ice; redeposition directly from glacial ice is by sediment gravity flow and/or ductile deformation; contrasting vegetation cover reflecting compositional differences; thickness ranges from 1 m to greater than 20 m.

Tr — **Ridged till:** diamicton; thickness varies, but is usually less than 15 m; surface morphology forms parallel ridges with amplitudes less than 15 m and wavelengths less than 30 m; orientation is often transverse to paleoflow directions; complex comprises till and glaciofluvial sediments.

Tp — **Till plain:** diamicton; thickness is greater than 5 m; surface morphology forms gently rolling plains with 1 to 2 m of relief; may exhibit flutes; generally masks underlying topography; some areas have large frost polygons and stone nets.

Tv — **Till veneer:** diamicton; less than 1 m thick; occurs in patches over rock and is interspersed with rock outcrop; deposits are thin enough to reveal details of underlying rock structure; may occur as a unit in complex polygons.

Tb — **Till blanket:** diamicton; thickness generally from 1 to 5 m; surface morphology conforms to underlying bedrock topography; may exhibit crag-and-tails, flutes, and/or roches moutonnées; some areas have large frost polygons and stone nets.

T — **Till, undifferentiated:** diamicton; varied thickness; complex may have relatively small pockets of alluvial or colluvial sediments, and glaciofluvial, glaciolacustrine, glaciomarine and/or marine sediments too small to be represented at the scale of mapping.

PRE-QUATERNARY

R — **Bedrock, undifferentiated:** various lithologies; where felsenmeer overlay present, frost-heaved, angular blocks of bedrock occur and are only identifiable from field observations.

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. Cv.T designates an area of colluvial veneer with numerous small deposits of till). 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. Cv/GFh indicates colluvial veneer overlying hummocky glaciofluvial sediments). The map-unit polygon is coloured according to the overlying unit.

Area of felsenmeer

Geological contact:
Defined
Approximate
Inferred

Landslide escarpment, active

Beach crest

Meltwater channel:
Minor, paleoflow direction unspecified
Major, channel scarp

Major moraine ridge

Esker:
Paleoflow direction unspecified
Paleoflow direction known

Drumlinoid, fluting, length not mapped to scale

Roche moutonnée, length not mapped to scale

Kame

Striation:
Poorly defined, ice-flow direction unknown
Well defined, ice-flow direction unknown
Well defined, ice-flow direction known
Crossed, 1 = older, 2 = younger

Station location, marine and terrestrial observation (with number, *see* Table 2)

Dated sample location (with number, *see* Table 1)

Table 1. Radiocarbon age.

Fossil site number	Lab ID	Latitude	Longitude	Elevation (m)	^{14}C Analysis	Media	Species	$\delta^{13}C$ Uncorrected age (ka)	Reservoir corrected age (A*-0.4ka) (ka)	Reservoir corrected age (B**-0.63ka) (ka)
9	BU-0202-A	67.9605	88.8774	152	Standard	Shell	*C. ciliatum*	9.188 ± 0.18	8.788	8.558
9	TO-10685	67.9605	88.8774	156	AMS	Shell	*P. arctica*	9.26 ± 0.07	8.86	8.63
19	GSC-6695	67.7882	88.4235	52	Standard	Wood	*Picea spp.*	5.22 ± 0.07	na	na

* Reservoir Correction "A" is presented to allow for correction to papers using a reservoir correction of c. -400 years (e.g., Dyke and Peltier, 2000); these shell ages are used in the sea-level curve resconstruction-I to ensure that new values presented herein are comparable to values present in papers using the -400 year reservoir correction.
** Reservoir Correction "B" presents modern reservoir corrections based on Little (2006); these shell ages are used in the sea-level curve resconstruction-II to ensure that new values presented herein are comparable to values present in papers using the -630 year reservoir correction.

Table 2. Site list for marine- and terrestrial-related locations.

Site number	Easting	Northing	Elevation (m)	Marine features	Terrestrial features
3	439755	7521236	255	Glacio-marine delta	
9	421394	749530	152	Marine silt and clay; shell lag/colluvium	
16	439832	7517969	247	Nearshore sediments	
19	438077	7552784	52	Ice-pushed beach ridges	
20	421865	7537460	250	Glacio-marine delta	
24	441110	7522111	168		Ice-movement indicators associated with site 25 till fabric
25	441100	7522082	~168*		Basal till fabric at ~30m depth

*Due to close proximity, elevation at site 25 is estimated to be similar to site 24. *From* McMartin et al., 2003.

Recommended citation
Geological Survey of Canada, 2022. Surficial geology, Ujarattaak Point, Nunavut, NTS 56-P/15 and 16; Geological Survey of Canada, Canadian Geoscience Map 414 (Surficial Data Model v. 2.3.14 conversion of Open File 5016, map 4); Canada-Nunavut Geoscience Office, Open File Map 2022-05, scale 1:50 000. https://doi.org/10.4095/329414

GSC CANADIAN GEOSCIENCE MAP 414 • CNGO OPEN FILE MAP 2022-05

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology by E.C. Little, M. Giangioppi, D. Utting, T. Ferbey, and C. Ozyer, 2003

Geological compilation by E.C. Little, 2004 and 2005

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

Geological data conversion by D.E. Kerr, 2016 to 2018

Geology has been spatially adjusted to fit the updated base.

Geomatics by J. Kingsley and C.D. Stevens

Cartography by J. Kingsley

Scientific editing by L. Ewert

Joint initiative of the Geological Survey of Canada and the Canada-Nunavut Geoscience Office, conducted under the auspices of the Information Management Project as part of Natural Resources Canada's Geo-Mapping for Energy and Minerals (GEM) program

SURFICIAL GEOLOGY
UJARATTAAK POINT
Nunavut
NTS 56-P/15 and 16
1:50 000

1 0 1 2 3 4 km

Map projection Universal Transverse Mercator, zone 16
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

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Magnetic declination 2022, 14°45'W, decreasing 28.8' annually

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users (gscpublications-cgcpublications@nrcan-rncan.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/) and Canada-Nunavut Geoscience Office (https://cngo.ca/).

NATURAL RESOURCES CANADA
GEOLOGICAL SURVEY OF CANADA
CANADIAN GEOSCIENCE MAP 414
CANADA-NUNAVUT GEOSCIENCE OFFICE
OPEN FILE MAP 2022-05
SURFICIAL GEOLOGY
UJARATTAAK POINT
Nunavut
NTS 56-P/15 and 16