GSC CANADIAN GEOSCIENCE MAP 394 • CNGO OPEN FILE MAP 2022-02

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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

Ce nouveau produit cartographique de la géologie des

This new surficial geology map product represents the conversion of Open File 5016, map 1 (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 1 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 a geodatabase that can expand following the type of information to appear on new surficial geology maps.

formations superficielles correspond à la conversion de la carte 1 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 1 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. I s'agit de données sur des stries glaciaires tirées de McMartin et al. (2003). Ces données sont identifiées structured and consistent manner. This provides an dans la géodatabase de la carte. Le but de la effective knowledge-management tool designed around 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

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NATURAL RESOURCES CANADA **GEOLOGICAL SURVEY OF CANADA CANADIAN GEOSCIENCE MAP 394 CANADA-NUNAVUT GEOSCIENCE OFFICE OPEN FILE MAP 2022-02 SURFICIAL GEOLOGY**

CAPE WEYNTON NTS 56-P/9,10



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Minister of Natural Resources, 2022

Canada, as represented by the

55' 50' 45' 40' 88°00' 416000 m E. 417000 m E. 417000 m E. 418 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 457000 m E. 457000 m $C \mid O \mid M \mid M \mid I \mid T \mid T \mid E \mid E$ B A Y

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.

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

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. Alluvial sediments, undifferentiated: complex of alluvial units too small to be

represented at the scale of mapping; variable thickness; they consist primarily of alluvial units, but may have relatively small pockets of colluvium, till, and glaciolacustrine, glaciofluvial, glaciomarine, and/or marine sediments. LACUSTRINE SEDIMENTS: clay to gravels; variable thickness; associated with modern lakes or drained lakes.

Lacustrine deltaic sediments: sand and rounded gravels, well to moderately orted, cross-stratified; variable thickness; a scarp or face with a low-relief mantle associated with fluvial deposition into a lacustrine environment. Lacustrine blanket: clay, silt, and sand, well stratified; thickness ranges from 1 m to 10 m; forming a plain with local relief less than 1 m and masking the

Lacustrine sediments, undifferentiated: clay, silt, and sand; variable thickness; consists primarily of lacustrine units, but may have relatively small pockets of

alluvial, colluvial sediments, till, and glaciofluvial, glaciomarine, and/or marine sediments too small to be represented at the scale of mapping. 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. Colluvial apron deposits: diamicton and poorly sorted sand and gravel, tratified; thickness up to 10 m, thinning at head and toe of deposit; deposit orms a wedge-shaped, slope-toe complex of relatively small steep debris flows, avalanche-dominated fans, and soliflucted deposits derived from bedrock and glacial debris.

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

Colluvial deposits, undifferentiated: colluvial units too small to be represented

at the scale of mapping; variable thickness; consist primarily of colluvial units,

Colluvial veneer: diamicton; thin (<1 m) or discontinuous; forming sheets of

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. Marine beach sediments: sand and gravel, generally well sorted material; thickness ranges from 1 to 5 m; locally includes pockets of washed till; usually orms 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; occur commonly on the slopes of

Marine deltaic sediments: sand and rounded gravels, cross-stratified; several metres thick; associated with fluvial deposition into a marine paleoenvironment; a scarp or face with a low-relief mantle. Marine intertidal sediments: silty sand to silt and clay, moderately sorted

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

lows; may be overlain by a veneer or discontinuous sheet of colluvial deposits. Marine offshore sediments: silt, silty clay, and clay, rhythmically stratified; thickness ranges from 1 to greater than 20 m; usually forms thick sequences that exhibit extensive gullying; locally fossiliferous; may be overlain by a Marine blanket: silt, sand, and gravel; variable thickness, but greater than 1 to

2 m; comprising marine units such as units Mo, Mn, Mr, Mi, and/or Md; may be overlain by a veneer or discontinuous sheet of colluvial deposits Marine sediments, undifferentiated: silt, sand, and gravel; variable thickness; M complex may have relatively small pockets of alluvial sediments, colluvial sediments, till, and glaciofluvial, and/or glaciomarine sediments, too small to be represented at the scale of mapping; may be overlain by a veneer or discontinuous sheet of colluvial deposits.

Glaciomarine deltaic sediments: sand and rounded gravels, cross-stratified; rariable thickness; a scarp or face with a low-relief mantle associated with glaciofluvial deposition into a glaciomarine environment. Glaciomarine sediments, undifferentiated: silt, sand, and gravel; variable thickness; complex may have relatively small pockets of alluvial sediments colluvial sediments, till, and glaciofluvial, and/or marine sediments too small to

be represented at the scale of mapping. PROGLACIAL AND GLACIAL ENVIRONMENT GLACIOLACUSTRINE 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. **Deltaic sediments:** sand and rounded gravels, moderately to well sorted, GLd cross-stratified; variable thickness; a scarp or face with a low-relief mantle of sand and gravel associated with glaciofluvial deposition into a glaciolacustrine

laciolacustrine blanket: clay, silt, and sand, well stratified; thickness ranges m 1 to greater than 20 m; a plain with local relief less than 1 m that masks

* From McMartin et al., 2003

small pockets of alluvial sediments, colluvial sediments, till, and glaciofluvial,

glaciomarine, and/or marine sediments too small to be represented at the

with glacial ice: these sediments can range from well to poorly sorted: strata are commonly deformed due to syndepositional collapse from the meltout of Outwash plain sediments: sand and rounded gravels, moderately to well

sorted, cross-stratified; 1 to 20 m thick; forming low-relief mantle; may be overlain by a veneer or discontinuous sheet of colluvial deposits. Terraced sediments: sand and rounded gravels, moderately to well sorted,

GLACIOFLUVIAL SEDIMENTS: well stratified to massive sand, gravel with minor silt and diamicton deposited by streams flowing away from, or in contact

Glaciofluvial veneer: gravel, sand, and silt, stratified to massive; thickness is

cross-stratified; variable thickness; a scarp or face with a low-relief mantle of outwash sediments typically elevated above a lower level glaciofluvial or 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 including esker ridges; may be overlain by a veneer or discontinuous sheet of colluvial deposits.

typically less than 1 m; may occur in patches or as gravel lag over rock. Glaciofluvial blanket: sand and gravel; variable thickness, but greater than 1 to 2 m thick; comprising units GFv, GFt, GFp, and/or GFh.

Glaciofluvial sediments, undifferentiated: sand and gravel; variable thickness; GF consists primarily of glaciofluvial units, but may have relatively small pockets of alluvial sediments, colluvial sediments, till, and/or glaciolacustrine sediments too small to be represented at the scale of mapping; may be overlain by a veneer or discontinuous sheet of colluvial deposits.

GLACIAL ENVIRONMENT GLACIAL SEDIMENTS (TILL): diamicton (gravel- 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; thicknesses range from 1 to greater than 20 m. Hummocky till: diamicton and interstratified glaciofluvial gravel and sand, The stratified to massive stratification often exhibits syndepositional deformation

features caused by slumping or ice meltout; up to 20 m or more thick; may contain variable amounts of ice-walled glaciofluvial and glaciolacustrine sediments; forms hummocky surface (kame and kettle topography); in places, the unit may exhibit prominent ridges marking major recessional ice margins, or diffuse zones marking boundaries between glacial-ice regimes. Ridged till: diamicton; thickness is variable, 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.

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 inderlying topography; some areas have large frost polygons and stone nets. **Till veneer:** diamicton; less than 1 m thick; occurs in patches over rock and is interspersed with rock outcrops; deposits are thin enough to reveal details of

underlying rock structure.

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; may be overlain by a veneer or discontinuous sheet of colluvial deposits. Till, undifferentiated: diamicton; variable thickness; complex may have relatively small pockets of alluvial sediments, colluvial sediments, and glaciofluvial, glaciolacustrine, glaciomarine, and/or marine sediments too small to be represented at the scale of mapping; may be overlain by a veneer or

Bedrock, undifferentiated: various lithologies; where felsenmeer overlay is present, frost-heaved, angular blocks of bedrock occur and are only identifiable from field observations; may be overlain by a veneer or discontinuous sheet of colluvial deposits.

discontinuous sheet of colluvial deposits.

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. GFv.R designates an area of glaciofluvial veneer with numerous small bedrock outcrops). 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. Mr/Mo indicates marine beach sediments overlying marine offshore sediments). The map-unit polygon is coloured according to

Area of felsenmeer

Assumed, includes map-unit boundaries under water bodies on the original publication

Terrace scarp, escarpment Beach crest Meltwater channel: ************** Minor, paleoflow direction unspecified

> Major, paleoflow direction unspecified ● ● ● ● Major moraine ridge <><><><> Esker, paleoflow direction unspecified

Drumlinoid, fluting, length not mapped to scale Crag-and-tail, length not mapped to scale Poorly defined, ice-flow direction unknown

Glaciolacustrine sediments, undifferentiated: clay, silt, and sand; variable thickness; consists primarily of glaciolacustrine units, but may have relatively

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)

Well defined, ice-flow direction unknown

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.

e 2. Site list for marine- and terrestrial-related locations.					
ite nber	Easting	Northing	Elevation (m)	Marine features	Terrestrial features
1	446740	7497146	240	Glaciomarine delta	
2	450118	7495304	240	Glaciomarine delta	
6	453038	7497972	92	Marine silt and clay: In situ shell	
7	449528	7512019	90	Marine silt and clay: shell lag/colluvium	
8	449597	7511836	76	Marine silt and clay: shell lag/colluvium	
14	449528	7512019	240	Nearshore sediments	
22	451572	7500809	254		Striae on whalebacks
23	451545	7500742	247		Modified roches moutonnées with glacial abrasion feature and faceted outcrop (three surfaces)
27	426065	7512718	398		TCN Sample: 02EL502 Coarse-grained biotite Granodiorite: +/- hornblend
	<u> </u>	<u> </u>	<u> </u>		

Recommended citation Geological Survey of Canada, 2022. Surficial geology, Cape Weynton, Nunavut, NTS 56-P/9,10; Geological Survey of Canada, Canadian Geoscience Map 394 (Surficial Data Model v. 2.3.14 conversion of Open File 5016, map 1); Canada-Nunavut Geoscience Office, Open File Map 2022-02, scale 1:50 000. https://doi.org/10.4095/314594

Geological Survey of Canada Canadian Geoscience Maps

Author: Geological Survey of Canada Geology by E.C. Little, M. Giangioppi, D. Utting, T. Ferbey, and C. Ozyer, 2003; additional air-photo interpretation along eastern map margin by D.E. Kerr, 2017 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, C.D. Stevens, and L. Roberstson Cartography by M.J. Baldock Scientific editing by L. Ewert 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 Map projection Universal Transverse Mercator, zone 16

North American Datum 1983

SURFICIAL GEOLOGY CAPE WEYNTON NTS 56-P/9,10

GSC CANADIAN GEOSCIENCE MAP 394 • CNGO OPEN FILE MAP 2022-02

Base map at the scale of 1:250 000 from Natural Resources Canada, with Elevations in metres above mean sea level Proximity to the North Magnetic Pole causes the magnetic compass to be Magnetic declination 2022, 14°27'W, decreasing 20.0' annuall 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/).

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