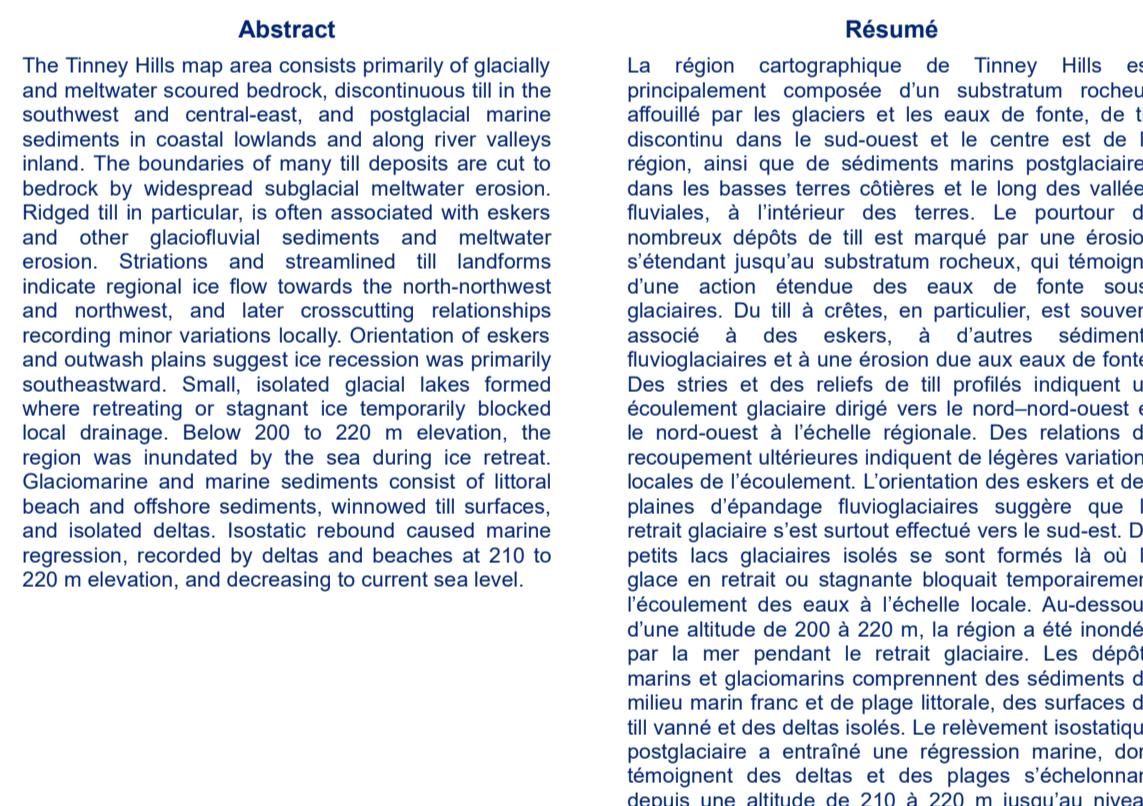


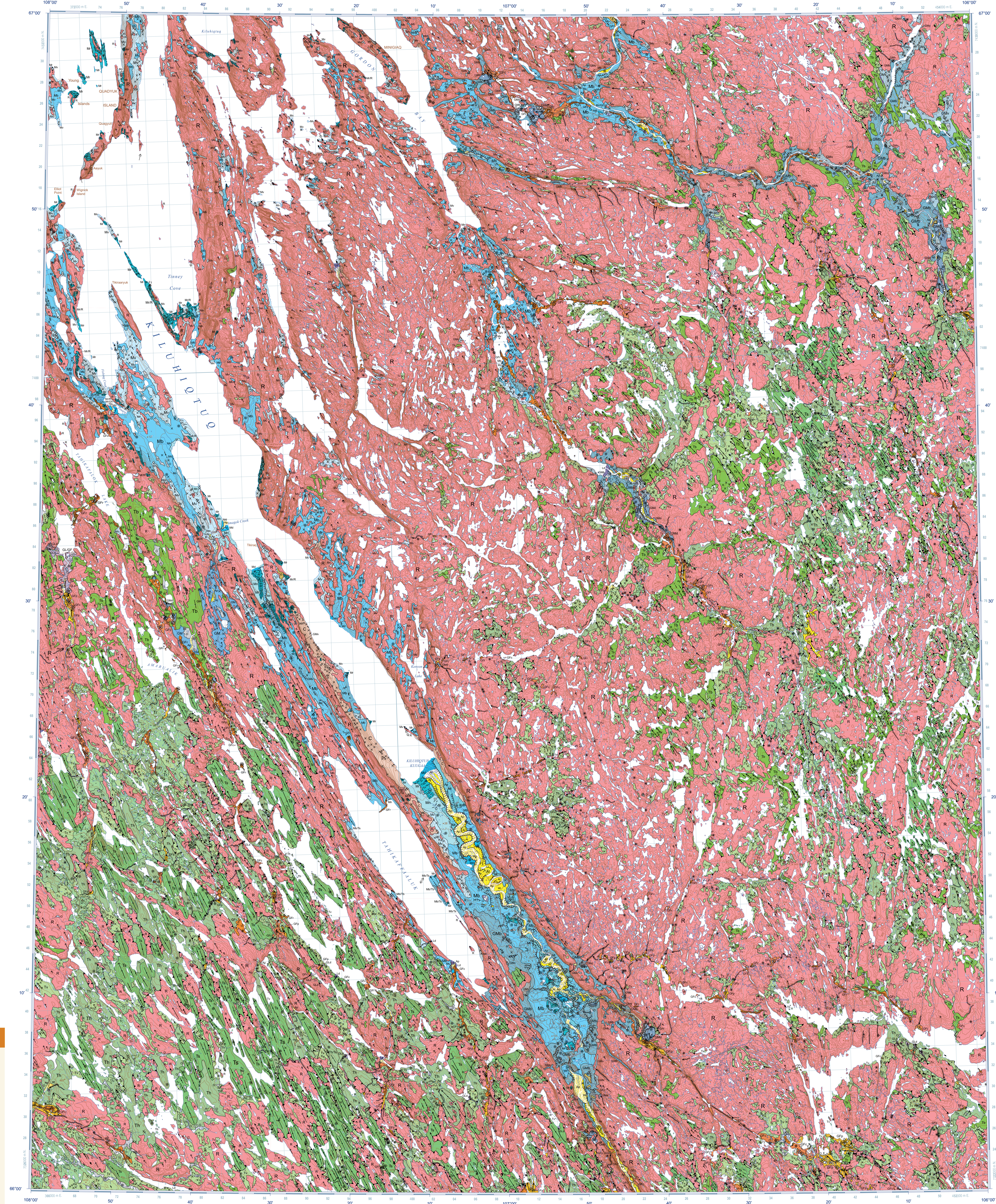
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Abstract
The Tinney Hills map area consists primarily of glacially and meteorite scoured bedrock, discontinuous till in the south-west and east-west, and postglacial marine sediments in coastal lowlands and along river valleys. The distribution of major till deposits is not as discrete as in the adjacent Mackenzie Delta. Rippled till in particular is often associated with eskers and other glacial features and meteorite erosion. Stations and apparent till landforms indicate regional ice flow towards the north-north-west and north-west, and later converging relationships recording minor variations locally. Orientation of eskers and northeast striae suggest ice recession was primarily south-eastward. Small, isolated glacial lakes formed where retreating or stagnant ice temporarily blocked local drainage. Below 200 m elevation, the region was inundated by the sea during ice retreat. Glacioluvial and marine sediments, coastal till, beach ridges and offshore sediments, intertidal till surfaces, and isolated deltas, fluvial ridges, and marine meadows, recorded by dunes and beaches at 210 to 220 m elevation, and decreasing to current sea level.

Résumé
Le région cartographique de Tinney Hills est principalement composée d'un substratum rocheux affecté par les glaciers et les eaux de la mer, de till discontinu dans le sud-ouest et le centre-est de la région, ainsi que de sédiments marins postglaciaires dans les basses terres côtières et le long des vallées fluviales. À l'exception des terrils, le pourtour de nombreux dépôts de till met en évidence des relations érosives et apparentées. Les landforms indiquent un régime régional de flux vers le nord-nord-ouest et le nord-ouest, et des relations convergentes ultérieures indiquant des variations locales. L'orientation des eskers et des stries orientales suggère que la régression glaciaire dirigée vers le nord-nord-ouest et le nord-ouest a été suivie d'une régression glaciaire dirigée vers le sud-est. De petites lacs glaciaires isolés se sont formés là où le glacier en retrait ou stagnant bloquait temporairement localement le drainage. En dessous de 200 m d'altitude, la région a été inondée par la mer pendant le retrait glaciaire. Les dépôts marins et glacioluviaux comprennent des sédiments de niveau marin étagés et de plages littorales, des surfaces de till variées et des deltas fluviaux. Le nivellement isotopique postglaciaire, à mesure que la régression marine, sont enregistrés sous forme de dunes, de plages littorales et de plages de 210 à 220 m d'altitude, et décroissant au niveau actuel de la mer.



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QUATERNARY HOLOCENE
POSTGLACIAL ENVIRONMENT
Lm Snowpack, thin ice accumulations along creeks and small rivers, varied thickness, observed or apparent since July/August 1950 to 1956.
O Organic deposits, undifferentiated, peat and muck, up to 2 m thick but commonly less than 1 m thick, formed progressively by the accumulation of vegetative material in bays, coves or depressions, along rocky shores, and on marine silt and clay, and till, may contain ice-wedge polygons, small unpaired organic deposits occur in most terraces.
E Eolian sediments, undifferentiated, fine to medium sand, varied thickness, deposited by wind from exposed beach ridges and dunes, and blow outs; defined by dune crests, wind-eroded ridges and troughs, and low ridges.
C Colluvial deposits, undifferentiated, silt, sand, and gravel to angular cobbles; varied thickness, deposited by gravity-induced movement, forming some and also some deposits along bedrock escarpments, may include hummocks.
ALLUVIAL SEDIMENTS: silt, sand, and gravel deposited by modern streams and rivers.
Fsp Fluvial sediments: silt, sand, and gravel, varied thickness, includes inactive and seasonally flooded terraces along modern meandering streams and rivers, and seasonally flooded terraces along modern meandering streams and rivers deposited by past and present fluvial channels.
Fm Fan sediments: silt, sand, and gravel, varied thickness, forming a fan deposited by past and present fluvial channels.
At Terraced sediments: silt, sand, and gravel, 3 to 5 m or more thick, forming raised terraces above modern rivers, confined to valleys, surfaces may exhibit microchannels and patterned ground, locally vegetated in coastal lowlands.
LACUSTRINE SEDIMENTS: silt and sand, deposited in modern lakes and ponds.
Ld Deltic sediments: silt, sand, and gravel, varied thickness, deposited by modern and late Holocene rivers entering into the sea, generally occur below marine limit.
Lr Littoral sediments: silt to sand with pebbles, 1 to 3 m thick, nearshore sediments associated with partially drained or effled lakes, may include organic.
L Lacustrine sediments, undifferentiated, silt and sand, varied thickness; associated with small drained lakes, may be vegetated.
MARINE SEDIMENTS: clay, silt, sand, and gravel, 1 to 15 m or more thick, deposited during marine transgression resulting in a coarsening-upward sequence, may include fine-grained glacioluvial sediments, may contain glacioluvial sediments.
M Terraced sediments: silt, sand, and gravel, varied thickness, forming raised terraces above modern rivers, confined to valleys, surfaces may exhibit microchannels and patterned ground, locally vegetated in coastal lowlands.
M Beach sediments: sand to gravel, may contain cobbles, varied thickness, derived mainly from reworked glacioluvial sediments, forming sand beach ridges and spalls associated with falling sea levels, may also include ice-wedge polygons and string beaches derived from exposed bedrock outcrops or colluvium, may be underlain by marine or glacioluvial sediments.
Ms Deltic sediments: silt, sand, and gravel, varied thickness, deposited by modern and late Holocene rivers entering into the sea, generally occur below marine limit.
Ml Littoral sediments: silt to sand with pebbles, may also consist of small cobbles and shingles; 1 to 3 m thick, nearshore sediments with undulating surfaces, in places, include fine-grained sediments.
Mv Marine veneer: undifferentiated sediment, consisting of a clay to sand matrix containing pebbles, cobbles, and boulders but predominantly silt and sand, less than 2 m thick, occurs as sediments filling depressions between bedrock outcrops and as a lag on washed bedrock and till surfaces below marine limit.
Mb Marine blanket: clay to silt with minor sand; 2 to 15 m or more thick, deposited in deep-water environments, generally heavily vegetated in coastal lowlands, and exhibiting subtidal stripes on moderate slopes, may contain unpaired till in river valleys or on steep slopes, transitional to unit Gmb at high elevations (less than 200 m).
LATE PLEISTOCENE-EARLY HOLOCENE (WISCONSIN GLACIATION)
GLACIOLACUSTRINE SEDIMENTS: silt and sand with cobbles, deposited at or beyond a retreating ice front by meltwater entering the sea.
GL Beach sediments: sand to gravel, may contain cobbles, varied thickness, derived mainly from reworked glacioluvial sediments, forming sand beach ridges and spalls associated with high sea levels, may also include ice-wedge polygons and string beaches derived from exposed bedrock outcrops or colluvium, elevation range from 150 to 210 m.
GLM Deltic sediments: sand to cobbles, massive to cross-stratified, up to 10 m or more thick, deposited in a fluvial environment, washed flat to gently sloping, channelled surfaces, may exhibit batha lains, braided paleochannels, microchannels, and beach ridges, may include marine ground-water elevations range from 100 to 220 m.
GLV Glacioluvial veneer: undifferentiated sediment, consisting of a clay to sand matrix containing pebbles, cobbles, and boulders but predominantly silt and sand, less than 2 m thick, occurs as sediments filling depressions between bedrock outcrops and as a lag on washed bedrock and till surfaces at or immediately below marine limit of 210 to 220 m elevation.
GMB Glacioluvial blanket: clay to sand with minor gravel, greater than 2 m thick, deposited in deep-water environments, may contain segregated ice, may be graded and pebbled or ungraded, more fine-grained and ice-wedge polygons in river valleys and on steep slopes, generally occurs between 150 and 210 m elevation.
GM Glacioluvial sediments, undifferentiated: clay to gravel, varied thickness, deposited in various environments at or immediately below marine limit of 200 to 210 m.
GLACIOLACUSTRINE SEDIMENTS: sediments deposited at or beyond a retreating ice front by meltwater entering a temporary glacial-dammed lake.
GLL Deltic sediments: sand, gravel, and cobbles, massive to cross-stratified, to 2 m thick, fan to inclined surface may exhibit batha lains, braided paleochannels, ice-wedge polygons, and beach ridges, occur between 200 and 210 m elevation.
GL Glacioluvial sediments, undifferentiated: silt, clay to sand and gravel, 1 to 10 m thick, veneer to blanket, deposited into temporary glacial-dammed lakes, may exhibit channelled surfaces, ice-wedge polygons, and gravel ice.
GLACIOLUVIAL SEDIMENTS: sand, gravel, and minor silt; 1 to 20 m or more thick, deposited by meltwater flowing from, or in contact with, glacier ice, may contain hummocks.
GFP Outwash plain sediments: sand and gravel, varied thickness, generally bedrock, occur as a proglacial outwash plain, may include minor terraces and scattered hummocks, surfaces may exhibit ice-wedge polygons and braided meltwater paleochannels.
GPI Terraced sediments: sand and gravel, varied thickness, forming raised terraces above modern rivers, surfaces may exhibit paleochannels and patterned ground.
GPT Fan sediments: sand and gravel, varied thickness, forming a small proglacial fan deposited by proglacial meltwater, surface may exhibit braided paleochannels.
GFC On-occupied sediments: sand to gravel, 2 to 20 m or more thick, deposited at or beyond the ice margin and subglacially, occur as hummocky terraces, may exhibit ice-wedge polygons and batha lains.
Esker sediments: silt, sand, and gravel; 1 to 20 m thick, forming ridges with both sharp-crested and flat-topped segments, mounds, and flexing spurs with and outside of meltwater channels, forms subglacial or submarginally exposed ice-walled channels, may exhibit ice-wedge polygons and batha lains.
GLACIOLUVIAL SEDIMENTS, UNDIFFERENTIATED: sand, gravel, and minor silt; 1 to 20 m or more thick, may occur as braided fans, outwash plains, and hummocky terrain; may contain massive ground ice.
GLACIAL ENVIRONMENT
GLACIAL SEDIMENTS (TILL): unsorted glacial debris, diameters deposited beneath, or along the margin of, a glacier at highest till, medial till and gravelly-flow deposits, may be heterogeneous below marine limit, may contain ground ice.
Tm Medial till: diameters, all to sand matrix, may include cobbles, and boulders, varied thickness, consisting of small to large hummocks and mounds, and hummocky terrain, may exhibit microchannels, may contain hummocks.
Tl Littoral till: diameters: silt to sand matrix with pebbles, cobbles, and boulders, varied thickness, contains minor ribbed and other minor marine ridges, varying in orientation from parallel to transverse to ice flow, may be associated with glacioluvial sediments and meltwater channels, with till veneer and bedrock.
Tc Channelled till: diameters: all to sand matrix, may include cobbles, and boulders, varied thickness, forming well-developed drumlins, hummocks, and hummocky terrain, may exhibit microchannels and hummocks on steep slopes.
Tl Till veneer: diameters: silt to sand matrix with pebbles, cobbles, and boulders, less than 2 m thick, occurs as a discontinuous layer where rock structure is generally well-sorted on exposures, and as a lag on washed bedrock above marine limit, and may include isolated bedrock outcrops, and small pockets of hummocky and till blanket, and glacioluvial sediments.
Tb Till blanket: diameters: silt to sand matrix with pebbles, cobbles, and boulders, 2 to 10 m thick, occurs preferentially on north-facing, low-lying beach slopes, surface may be fluted by drumlins and clog and talus, may include pockets of till veneer.
PRE-QUATERNARY
R Bedrock, undifferentiated: varied igneous, metamorphic, and sedimentary lithologies, generally represented by extensive outcrop, surface may be glacially scoured/abraded or segmented zones of washed, scored bedrock within meltwater channels or by marine wave action, may include pockets of marine, glacioluvial, glacioluvial, or till, locally, contacts between bedrock and till units are defined by erosion subglacial meltwater corridor margins.
Stratigraphic relationships: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. M/GFC indicates marine veneer overlying glacioluvial sediments). The map-unit polygon is coloured according to the overlying unit.

RECONNAISSANCE SURFICIAL GEOLOGY
TINNEY HILLS
Nunavut
NTS 76-J
1:125 000
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 2022: 10°30'E, decreasing 4'E annually.
Readings vary from 9°24'E in the NE corner to 11°40'E in the SW corner of the map.
This map is not to be used for navigational purposes.
Title photograph: Fluted till plate dissected by meltwater channels, Nunavut. Photograph by the Natural Air Photo Library.
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.
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