

QUATERNARY	
HOLOCENE	
NONGLACIAL ENVIRONMENT	
O	Organic deposits, undifferentiated: peat and muck, variable thickness, generally covers marine sediments.
E	Colluvial sediments, undifferentiated: well-sorted sand, variable thickness, occurs as sheets and dunes east of Ellice River, derived from alluvial and glaciofluvial sediments.
Al	Alluvial terraced sediments: sand and gravel, variable thickness, occurring as benches elevated above modern floodplains.
A	Alluvial sediments, undifferentiated: sand and gravel, stratified, variable thickness, deposited along modern floodplains.
Mv	Marine veneer: clay, silt and sand, <2 m thick, deposited during marine regression.
Md	Marine deltaic sediments: sand with gravel, variable thickness, deposited as the distal lobe of a deltaic fan in front of the MacAlpine Moraine.
Mb	Marine blanket: clay, silt and sand, <2 m thick, deposited during marine regression; occurs extensively in the Queen Maud Gulf Bird Sanctuary.
M	Marine sediments, undifferentiated: silt, sand and gravel, variable thickness, deposited during marine regression.
LAST GLACIATION (WISCONSIN)	
PROGLACIAL AND GLACIAL ENVIRONMENT	
GLv	Glaciolacustrine veneer: silt and sand, <2 m thick, deposited where meltwater drainage was impeded by ice, till or topography.
QL	Glaciolacustrine sediments, undifferentiated: silt and sand, variable thickness, deposited where meltwater drainage was impeded by ice, till or topography.
GFP	Glaciofluvial outwash plain sediments: sand and gravel with boulders, stratified, <2 m thick, deposited by meltwater streams beyond the ice front.
GPF	Glaciofluvial subarctic outwash fan sediments: sand and gravel, stratified, 2-10 m thick, deposited by meltwater in front of the MacAlpine Moraine.
GFC	Ice-contact sediments: sand, gravel and boulders, stratified, 2-10 m thick, occurs as ridges and kames, deposited by meltwater in contact with glacial ice.
GF	Glaciofluvial sediments, undifferentiated: sand, gravel and boulders, stratified till and sand, variable thickness, occurs in sheets, hummocks and ridges, deposited in subglacial meltwater corridors.
GLACIAL ENVIRONMENT	
Tv	Till veneer: silt-sand diamict, <2 m thick, basal meltout and glacial till surface mimics underlying bedrock topography, till is bouldery where it has been modified by meltwater; unit contains nodules of bedrock.
Ts	Till blanket: silt-sand diamict, 2-10 m thick, lodgement, basal meltout and subglacial till; masks underlying bedrock topography, associated with the MacAlpine Moraine.
Ts	Streamlined till: diamict, variable thickness, extensively fluid till, individual ridges (dummocks) seldom exceed 1 km in length, may contain cross and lateral.
Th	Hummocky till: silt-sand and gravel diamict, may be stratified, 5-10 m thick, forming hillocks, elongated ridges, and kame-and-kettle topography, associated with the MacAlpine Moraine.
T	Till, undifferentiated: silt-sand diamict, variable thickness, lodgement, basal meltout and ablation till; masks underlying bedrock topography, may contain smaller areas of till veneer.
PRE-QUATERNARY	
R	Bedrock, undifferentiated: granite and gneiss, glacially scoured and eroded, includes patches of till veneer, marine and glaciofluvial sediments; areas of meltwater scour and boulder lag are shown by outcrop symbols.

NOTES:	
Stratigraphic relationship: map unit stratigraphy is shown with a maximum of two map unit designations separated by a slash (/) (e.g., O/M designates undifferentiated organic deposits overlying undifferentiated marine sediments).	
Complex units: where the surficial cover forms a complex pattern and the map units are too small to be mapped individually, yet constitutes an important areal extent of the total pattern, a dot (•) separates the first dominant map unit designator from the less abundant secondary unit (e.g., GFC designates an area of glaciofluvial sediments with some areas of bedrock).	
	Boulder lag
	Washed scoured lag
	Geological contact, defined
	Geological contact, approximate
	Ice-contact terrace scarp
	Terrace scarp, unspliced
	Moor meltwater channel, sense known
	Moor meltwater channel, sense unknown
	Lateral meltwater channel
	Major end moraine
	Minor moraine
	Washed eskier, sense known
	Eskier, sense known
	Eskier, sense unknown
	Crags-and-fall
	Drumlinoid ridge (1 = older, 2 = younger)
	Fluted bedrock, sense known
	Fluted bedrock, unknown
	Limit of glaciomarine submergence, defined
	Limit of glaciomarine submergence, approximate
	Beach ridge
	Dune crest
	Dolomite, sense known
	Dolite, sense known
	Dolite, sense unknown
	Kame
	Kettle lake
	Thermokarst
	Small outcrop
	Patterned ground (ice wedges)
	Observation site
	Till sample site

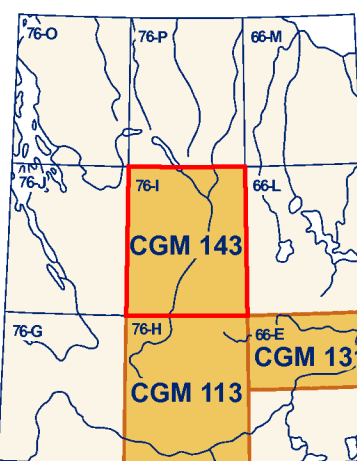
NOTES/REFERENCES	
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McMartin, I., Berman, R.G., Normandeau, P.X., and Percival, J.A., 2013. Till composition of a transect across the Thelon tectonic zone, Queen Maud block, and adjacent Rae craton: results from the Geo-Mapping Frontiers' Quaternary project. Geological Survey of Canada, Open File 7418.	

Abstract

Preliminary surficial geology studies, based on air photo interpretation and limited field data, were undertaken in the Overby Lake map area to provide an understanding of the distribution and nature of surficial materials, and regional glacial history. Much of the western area is characterized by subglacially scoured lake basins. Streamlined rock and till landforms indicate ice flow towards the northwest and north-northwest. Till blankets and veneers have a pebbly silt-sand matrix, but their surfaces tend to be bouldery where they were affected by glacial meltwater. Subglacial meltwater corridors consisting of eskiers, washed till, boulder lags and scoured bedrock, cross the entire area. The MacAlpine Moraine in the southeast formed during glacial regression about 8000 years ago, and is defined by hummocky till, kames, and related glaciofluvial outwash. Sandy glaciofluvial marine sediments extend up Ellice River to 225 m a.s.l. In the northeast, below 160 m a.s.l., silt, marine deposits from extensive plateaus between drumlinoid ridges in the Queen Maud Gulf Bird Sanctuary.

Résumé

Pour connaître la répartition et la nature des dépôts de surface et l'histoire glaciaire de la zone du lac Overby, nous avons entrepris des études préliminaires de la géologie de surface en analysant des photos aériennes et un ensemble limité de données de terrain. Une bonne partie du secteur ouest est caractérisée par un substratum rocheux qui est recouvert de blocaille et qui contient des bandes lenticulaires peu profondes créées par les glaciers. Les reliefs fuselés de roche et de till indiquent un écoulement glaciaire vers le nord-ouest et le nord-nord-ouest. Les nappes et les plaques de till sont constituées d'une matrice de silt et de sable limoneux, mais leurs surfaces tendent à être boudoyées par les glaciers. Les corridors d'écoulement glaciaire, composés de eskiers, de till lavé, de boudiers et de substratum rocheux décapé, traversent toute la zone. La moraine MacAlpine, au sud-est, a été formée au cours du retrait glaciaire, il y a environ 8000 ans, et est composée de till boudé, de kames et de dépôts. Les dépôts marins postglaciaires s'étendent en amont dans la rivière Ellice jusqu'à 225 m au-dessus du niveau de la mer. Au nord-est, à moins de 160 m au-dessus du niveau de la mer, des dépôts marins limoneux forment de vastes plateaux entre les dômes drumliniens, à l'intérieur du Refuge-Océan de la grotte Reine-Maud.



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

Cover Illustration
Cryotill blanket adjacent to a fluted outcrop in the foreground, with the Ellice River and exposed outwash sediments in the background. Photograph by P. Normandeau, 2013-0222

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CANADIAN GEOSCIENCE MAP 143 RECONNAISSANCE SURFICIAL GEOLOGY OVERBY LAKE

Nunavut
NTS 76-I
1:125 000



Authors: L.A. Dredge and D.E. Kerr
Geology based on aerial photograph interpretation by L.A. Dredge 2012, with minor additions and revisions by D.E. Kerr, 2012-2013. Station data from P. Normandeau, field work 2012 (see Notes).
Geomatics by GSP Geographics Inc. and S. Eagles
Cartography by S. Eagles

Initiative of the Geological Survey of Canada, conducted under the auspices of the Geospatial Frontiers Project as part of Natural Resources Canada's Geomapping for Energy and Minerals (GEM) Program.
Map projection: Universal Transverse Mercator, zone 13, North American Datum 1983

RECONNAISSANCE SURFICIAL GEOLOGY
OVERBY LAKE
Nunavut
NTS 76-I
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.
Shaded relief image derived from the digital elevation model supplied by Natural Resources Canada.
Illumination: azimuth 315°, altitude 45°, vertical factor 5x.
Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Mean magnetic declination 2013, 91°06', decreasing 28' annually. Readings vary from 72°05'E in the NE corner to 10°04'E in the SW 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 from GEDC/NGS (<http://open.can.ca/geoscience>)

Preliminary publications in this series have not been scientifically edited.