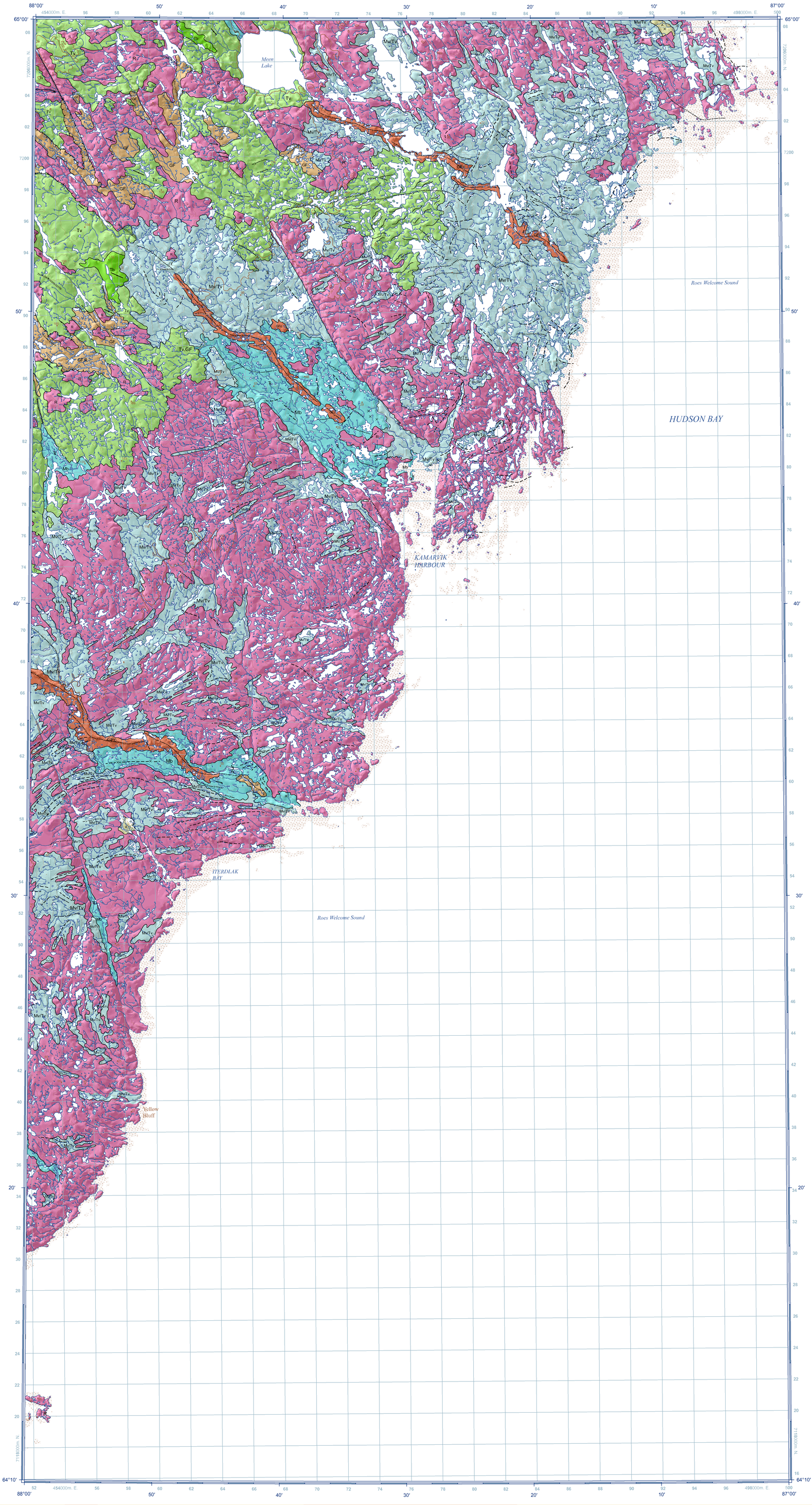


SURFICIAL DEPOSITS

QUATERNARY

HOLOCENE

ALLUVIAL DEPOSITS: sorted sand, silt and clay with minor gravel and organic detritus; commonly stratified; deposited along and/or within modern rivers and streams.

A — **Alluvial sediments, undifferentiated:** sand, gravel and mud; less than 2 m thick. Sandy alluvial deposits along the upper reaches of Gordon River are bare of vegetation, and may be recent avulsion deposits. Small alluvial units occur in the lower reaches of streams near the coast.

HOLOCENE - LATE PLEISTOCENE

MARINE DEPOSITS: sediments deposited within the Tyrrell Sea; 1 to 5 metres thick; primarily derived from reworking of glacial and glaciofluvial sediments by wave and current action. Locally includes patches of wave-reworked or winnowed till. The postglacial marine limit rises from an elevation of 140 m a.s.l. near Daly Bay to greater than 150 m along the Hudson Bay coast to the east.

Mv — **Marine veneer:** sand and/or gravel; less than 2 m thick; occurs as patches interspersed with bedrock or, less commonly, other surficial deposits. In places, the unit contains till ridges, DeGeer moraines, and reworked esker fragments.

Mb — **Marine blanket:** sands and silts; more than 2 m thick; forming a continuous cover that generally masks underlying sediments and bedrock.

GLACIOFLUVIAL DEPOSITS: sand, gravel and minor silt; well to poorly sorted; massive to stratified; deposited by meltwater streams, either from, or in contact with, glacial ice in a subglacial or subaerial environment. Below marine limit, glaciofluvial sediments are commonly modified and/or reworked by wave action.

GFp — **Outwash sediments:** sand and gravel; 1 to 10 m thick; moderately to well-sorted; commonly with kettles and/or channel scars on the surface; they represent the distal facies of ice-contact stratified drift deposited in a proglacial, subaerial environment within meltwater channels or corridors.

GFc — **Ice-contact sediments:** sand, gravel, and cobbles; 2 to 20 m thick; moderately to well sorted; deposited in a subglacial or englacial environment; forming large sharp-crested or flat-topped esker ridges and hummocks; predominantly found in, but not restricted to, the subglacial meltwater corridors. Below an elevation of about 140 m to 160 m a.s.l., esker flanks have been modified and terraced by wave action.

GF — **Glaciofluvial sediments, undifferentiated (Meltwater corridor complex):** hybrid unit comprised of several landform –sediment assemblages (facies) which cannot be separated at the scale of mapping; comprised primarily of sand and gravel, interspersed with boulders, sandy diamicton, and eroded till; 2 to 5 m thick; formed in subglacial conduits and shallow subaerial meltwater channels; predominant glaciofluvial ice-contact landforms are esker ridges, hummocks, short sinuous transverse ridges, kettles and knobs, interspersed with eroded till features. The corridors range from 500 m to 2.5 km in width, and commonly have distinct lateral boundaries. Most of the corridor deposits are thought to be subglacial sediments.

GLACIAL DEPOSITS: silty sand diamicton (till); unsorted to poorly sorted; generally massive; thickness can exceed 20 m in buried depressions and streamlined landforms but is generally less than 5 m; deposited beneath active ice as lodgement and basal meltout tills. Surface boulder abundance is variable, related to either glacial deposition or subsequent winnowing and removal of the fines by meltwater or wave action. Below marine limit, the surface till is commonly modified and/or reworked by wave action.

Tv — **Till veneer:** bouldery, silty sand diamicton; less than 1 m thick; forms a discontinuous cover over bedrock and is interspersed with rock outcrops; deposits are thin enough to reveal details of underlying rock structure; mudboils and frost-heaved slabs are common. Till ridges and DeGeer moraines are present within this unit below elevations of 160 m a.s.l.

Tb — **Till blanket:** pebbly, silty sand diamicton; 1 m to more than 20 m thick; forms a continuous cover that generally masks underlying bedrock topography; occurs as till plains or swaths of streamlined forms such as drumlinoids and crag-and-tail forms indicating ice flow towards the southeast and south-southeast, and later to the south near Daly Bay (west of this map sheet); mudboils are common on landform surfaces.

PRE-QUATERNARY

BEDROCK: Archean to Paleoproterozoic metamorphosed igneous and supracrustal rocks.

R — **Bedrock, undifferentiated:** intact and frost-riven outcrops of various lithologies, predominantly granitic to intermediate gneisses, granodiorite, and minor supracrustal rocks. Dykes trend NE-SW. Curving, multigenerational folds and faults form prominent topographic features. Variously modified by glacial erosion; surfaces range from rough and weathered to glacially polished and striated.

Complex units: where the surficial cover forms a complex and the map units are too small to be mapped individually, yet constitute a significant component of the total polygon, a dot (".") separates the first dominant map unit designator from the less abundant secondary unit (e.g., GF.R designates a meltwater corridor with many rock outcrops).

Stratigraphic relationship: where observed or can be confidently inferred, a map unit stratigraphic sequence is shown with a maximum of two map unit designators separated by a slash ("/") (e.g., Mv/Tv designates marine veneer overlying till veneer).

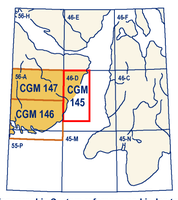
- Geological boundary (defined)
- Beach crest
- Esker ridge (with beach ridges/strandlines; sense known)
- Esker ridge (sense known)
- Major subglacial meltwater corridor (well-defined lateral limit)
- Minor meltwater channel (progracial or subglacial; sense known)
- Minor meltwater channel central axis (proglacial or subglacial; sense unknown or unspecified)
- Minor moraine ridge (DeGeer, recessional, rogen)
- Fluted bedrock (sense known)
- Drumlinoid ridge
- Patterned ground
- Thermokarst depression
- Striation
- Small outcrop
- Observation site

Abstract

Preliminary surficial geology studies, based on air photo interpretation and limited field data, were undertaken in the Yellow Bluff West map area (NTS 46-D west) to provide an understanding of the distribution and nature of surficial materials, and regional glacial history. Much of the area is undertain by folded and faulted bedrock containing shallow glacially scoured lake basins. Striae on bedrock surfaces indicate ice flow toward the southeast. Till veneers are present in the area. Bare bedrock and modified till surfaces result from removal and/or reworking of glacial materials by glacial meltwater and postglacial marine wave-washing. Three major esker systems are associated with subglacial conduits, in which are aligned linear units of glaciofluvial hummocks and ridges. Below 150 m a.s.l, the flanks of the eskers have been reworked into beaches or flattened by the postglacial Tyrrell Sea. Except in areas around eskers where marine deposits are thickest, marine sediments are generally thin, and consist primarily of sand. Raised marine beaches oriented approximately parallel to the coast lie at low elevations.

Résumé

Pour établir la distribution et la nature des sédiments de surface et l'histoire glaciaire du secteur ouest de la carte de Yellow Bluff (SNRC 46-D ouest), 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 est couverte d'un substratum rocheux plissé et faillé contenant des bassins lacustres peu profonds creusés par les glaciers. Les stries marquant la surface du substratum rocheux indiquent un écoulement glaciaire vers le sud-est. Des placages de till sont présents dans la région. La surface dénudée du substratum rocheux et la surface modifiée du till résultent de l'enlèvement et/ou du remaniement de matériaux glaciaires par l'eau de fonte de glaciers et par les vagues marines postglaciaires. Trois grands réseaux d'eskers sont associés à des conduits sous-glaciaires, où sont alignées des unités de buttes et de crêtes fluvioglaciaires. Au-dessous de 150 m d'altitude, les flancs des eskers ont été remaniés sous forme de plages ou aplanis par la mer de Tyrrell postglaciaire. Sauf dans les zones autour des eskers où les dépôts marins sont plus épais, la couche de sédiments marins, composés principalement de sable, est généralement mince. Des plages marines soulevées, presque parallèles à la côte, sont présentes aux basses altitudes.



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

Cover illustration
Wave-washed till surfaces and intervening marine sediments, west of Roes Welcome Sound, Nunavut. Photograph by I. McMartin. 2013-093

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CANADIAN GEOSCIENCE MAP 145

RECONNAISSANCE SURFICIAL GEOLOGY

YELLOW BLUFF (WEST)

Nunavut
NTS 46-D west
1:100 000

REFERENCES

McMartin, I., Wodicka, N., Bazor, D., Boyd, B., and Percival, J.A., in press. Till composition across the Rae craton south of Wager Bay, Nunavut: results from the Geo-Mapping Frontiers' Tehery project; Geological Survey of Canada, Open File 7417.

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Canadian Geoscience Maps

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Map projection Universal Transverse Mercator, zone 16. 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

RECONNAISSANCE SURFICIAL GEOLOGY
YELLOW BLUFF (WEST)
Nunavut
NTS 46-D west
1:100 000

2 0 2 4 6 8 km

Shaded relief image derived from the digital elevation model supplied by the Mapping Information Branch / GeoData Acquisition & Management Division, Natural Resources Canada
Illumination: azimuth 315°, altitude 45°, vertical factor 1x

Mean magnetic declination 2013, 16°11′W, decreasing 10.2′ annually. Readings vary from 14°58′W in the SW corner to 17°25′W in the NE 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 through GEOSCAN (http://geoscan.ess.nrcan.gc.ca/).

This map is not to be used for navigation purposes.

Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 145
RECONNAISSANCE SURFICIAL GEOLOGY
YELLOW BLUFF (WEST)
Nunavut
NTS 46-D west