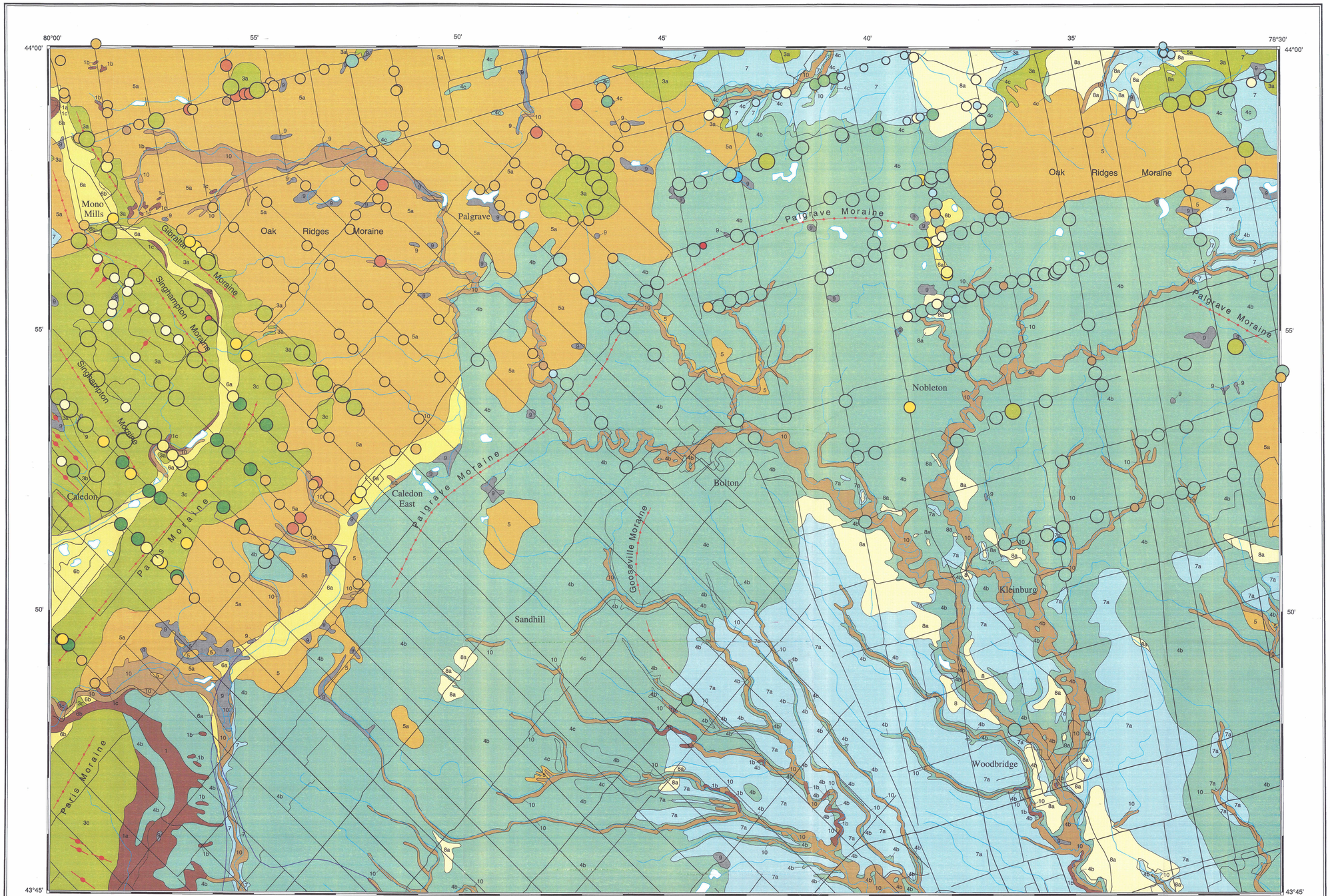
Natural Resources Canada | Ressources naturelles Canada

GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

Ontario Ministry of Northern Development and Mines

**NATMAP CARTNAT**
Canada's National Geoscience Mapping Program
La Programme national de cartographie géoscientifique du Canada




## SURFICIAL GEOLOGY SITE ATTRIBUTE LEGEND

**RECENT**

- 12 **Eolian:** fine structureless sand
- 11 **Colluvium:** sorted to poorly sorted silt, sand and gravel, may contain organic material
- 10 **Alluvium:** gravel and sand with minor silt, may contain organic material
- 9 **Organic Deposits:** 90% organic material, peat, decaying vegetation

**PLEISTOCENE**

**Glaciolacustrine Deposits:**
(Peel/Schomberg ponds above, Lake Iroquois/Algonquin below raised shorelines)

- 8a sand and silty sand
- 8b gravelly sand and gravel

**Glaciolacustrine Deposits:**
(Peel/Schomberg Ponds above, Lake Iroquois/Algonquin below raised shoreline)

- 7 massive to laminatod silt and clay
- 7a includes interbedded diamicton
- 7b deformed silt and clay

**Glaciofluvial Deposits:**

- 6a mainly sand
- 6b mainly gravel

**Ice-Contact Stratified Drift Deposits:**

- 5a mainly sand
- 5b mainly gravel

**Till:** clayey silt to silty sand; sand, silt and clay interbeds; <5% clasts

- 4c Wildfield/kettleby
- 4b Halton

**Till:** sandy silt to sand; generally massive; >5% clasts

- 3c Wentworth
- 3b Port Stanley
- 3a Newmarket
- 1 **Bedrock:** carbonate, siltstone

FIELD SITE

## REGIONAL SURFICIAL GEOLOGY MAP UNIT LEGEND

**PHANEROZOIC**

**CENOZOIC**

**QUATERNARY**

**RECENT**

- 11 **Recent Deposits:** includes colluvium, shoreline and anthropogenic features
- 10 **Alluvium:** gravel, sand, silt, clay, muck (includes Pleistocene alluvium)
- 9 **Organic Deposits:** peat, muck

**PLEISTOCENE**

- 8 **Glaciolacustrine Deposits:** silty sand to gravel, undifferentiated (Peel/Schomberg ponds above, Lake Iroquois/Algonquin below raised shoreline) a) sand and silty sand b) gravelly sand and gravel
- 7 **Glaciolacustrine Deposits:** massive to laminated silt and clay (Peel/Schomberg Ponds above, Lake Iroquois/Algonquin below raised shoreline) a) includes interbedded diamicton b) deformed silt and clay
- 6 **Glaciofluvial Deposits:** a) mainly sand b) mainly gravel
- 5 **Ice Contact Stratified Drift Deposits:** a) mainly sand b) mainly gravel
- 4 **Till:** clayey silt to silt c) Wildfield/Kettleby b) Halton / a) Tavistock
- 3 **Till:** sandy silt to sand c) Wentworth b) Port Stanley a) Newmarket
- 2 **Older Glacigenic Drift:** b) Meadowcliffe Till a) Sunnybrook drift

**PALEOZOIC**

- 1 **Bedrock:** carbonate c) sandstone or shale, silt b) limestone or dolostone a) bedrock-drift complex

/ Facies change to silty sand eastward across the ORM NATMAP/Greater Toronto Area

## EXPLANATORY NOTES

**The Oak Ridges Moraine and environs NATMAP project**

This 1:50,000 scale surficial geology attribute map for Bolton (NTS 30M/13) is one in a series of new map products to be released as part of the Oak Ridges Moraine (ORM) and environs NATMAP project. NATMAP is an initiative of the Geological Survey of Canada to increase the level of geoscience mapping in Canada for both traditional and environmental purposes. The program encourages multiagency/multidisciplinary projects aimed at reducing operating costs and duplication of effort, and providing integrated, digital products. The ORM and environs NATMAP project developed in response to increasing concern over the management and protection of groundwater and resources associated with the ORM.

**Bolton Preliminary Surficial Geology Site Attributes**

Present work on the Bolton sheet is concentrating on the northern part of the map sheet, particularly the Oak Ridges and Palgrave moraines. Surficial geology attributes for 408 sites are presented as coloured circles superimposed on the existing surficial geology map (White, 1973, 1975). Fieldwork was completed in the summer of 1993. Field sites include 325 road cuts, 86 probe holes ( to 1 metre depth ) and 17 miscellaneous exposures.

Circle size and order correspond to the stratigraphically ordered map unit legend; the largest, lowest circle represents the oldest surficial material. This convention allows for complete data representation, even where sites are closely spaced. Surficial geological attributes were assigned on the basis of geological characteristics at 1m depth below the land surface.

Attribute data, in conjunction with air photograph interpretation, will form the basis of a new 1:50 000 surficial geology map of the Bolton area (NTS 30M/13) to be released by the ORM and environs NATMAP project. Not all anomalous site data will be assigned a new map unit as individual sites may be rationalized in the course of air photograph interpretation.

This digitally produced compilation allows rapid cross-checking of the existing surficial geology map, and highlights areas of conflict with existing map units. Site attributes have a high degree of correlation with the existing map. Within the area of the Singhampton moraine previously unmapped lacustrine sands occur in an area of swamp and marsh.

## SYMBOLS

- Geological contact (approximate)
- Esker
- Streamlined form
- Trend of moraine crest
- Raised shoreline (Lake Iroquois)
- Aeolian dunes
- Thin till over sand and gravel

## USER NOTES

The surficial geology base is from Sharpe and Finley (in Press) which for the Bolton area is from White (1973).
The map unit legend is a composite for the Greater Toronto and ORM NATMAP areas; not all units or symbols appear on this 1:50,000 map.
Base neatlines are registered to the EMR base (1985).
Some alluvial units have been adjusted to fit the 1985 base.
Till sub-units are arranged in stratigraphic order.

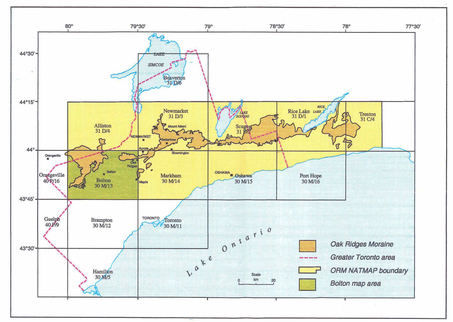
## REFERENCES


Sharpe, D.R. and Finley, W.D. Surficial Geology of the Greater Toronto Area (Digital Compilation), Geological Survey of Canada, Open File, in press.

White, O.L. 1973:
Quaternary geology of the Bolton area, southern Ontario; Ontario Division of Mines, Map 2275, scale 1:63,360.

White, O.L. 1975:
Quaternary geology of the Bolton area, southern Ontario; Ontario Division of Mines, Geological Report 117, 119 p.


## INDEX MAP




Copies of this map may be obtained from the Geological Survey of Canada 601 Booth Street, Ottawa, Ontario K1A 0E8


LOCATION MAP

Mean magnetic declination 1971 varies from 08°18' westerly at centre of west edge to 10°35' westerly at centre of east edge. Mean annual change 0.7' westerly.

Digital base map from Surveys, Mapping and Remote Sensing published at 1:250,000 scale.
North American Datum 1927

Canada

Open File 2991

# SURFICIAL GEOLOGY SITE ATTRIBUTES
## BOLTON AREA
## NTS 30M/13
## ONTARIO

Scale 1:50,000 - Échelle 1/50 000

Miles 1 0 1 2 3 Milles

Metres 1000 0 1000 2000 3000 4000 Mètres

Universal Transverse Mercator Projection


Projection transverse universelle de Mercator


## CREDITS

Field survey by: H. A. J. Russell, 1993.
Field assistance by A. Grignon, J. Borgonon, 1993.
Data management assistance by R. Lathambolse.
Compilation and editing of surficial geology map by D.R. Sharpe and W.D. Finley, 1993.
Contribution of the Oak Ridges Moraine and NATMAP Hydrogeology projects.

Digital cartographic production by Northwood Geoscience Ltd., Ottawa.

## RECOMMENDED CITATION:

Russell, H.A.J. 1996:
Surficial geology site attributes, Bolton area, (NTS 30M/13), Ontario; Geological Survey of Canada Open File 2991, 1 sheet, scale 1:50,000.

**OPEN FILE**
**DOSSIER PUBLIC**

**2991**

**GEOLOGICAL SURVEY OF CANADA**
**COMMISSION GÉOLOGIQUE DU CANADA**
**OTTAWA**

**1996**