

EXPLANATORY NOTES

The Oak Ridges Moraine and environs NATMAP project

This 1:50,000 scale preliminary surficial geology attribute map for Oshawa (NTS 30M/15) 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 multi-agency/multi-disciplinary 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.

Oshawa Preliminary Surficial Geology Site Attributes

Surficial geological attributes for 738 field sites, supplemented by 20 archival borehole records, are presented as coloured circles (field sites) and squares (boreholes) superimposed on the existing surficial geology map. Fieldwork was completed in the summer of 1993. Field sites include 71 sections, 160 rail and road cuts, and 507 auger and probe holes. Archival borehole records are taken from Ontario Ministry of Transportation foundation reports (1972-1989).

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 1 m depth below the land surface.

Attribute data, in combination with air photograph interpretation, will form the basis of a new 1:50,000 surficial geology map of the Oshawa area (NTS 30M/15) to be released by the ORM and environs NATMAP project. Not all anomalous site data will be assigned a new map unit. Attribute 3.4 will be rationalized to 4b or 3a during data analysis and 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 suggest that the Halton drift dominates the surficial geology north of the Glacial Lake Iroquois shoreline, whereas the Newmarket Till is exposed south of that shoreline.

- 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**
- This map was compiled from source maps which were at a variety of scales. Consequently, accuracy and detail are not the same in all areas. 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 neotines 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**
- Gravenor, C.P., 1957. Surficial geology of the Lindsay-Peterborough area, Durham, Peterborough, Victoria, Northumberland and Ontario Counties, Ontario, Geological Survey of Canada, Map 1050A, scale 1:126,720.
- Oling, A.B., Wicklund, R.E., and Richards, N.R., 1956. Soil survey of Ontario County, Ontario Soil Survey, report 23, 80 p., map scale 1:63,360.
- Ontario Geological Survey Aggregate Resource Inventory, 1981: City of Oshawa, Regional Municipality of Durham, ARIP report 40, map scale 1:50,000.
- Ontario Geological Survey Aggregate Resource Inventory, 1981: The Town of Whitby, Regional Municipality of Durham, ARIP report 41, map scale 1:50,000.
- Ontario Geological Survey Aggregate Resource Inventory, 1984: The Town of Newcastle, Regional Municipality of Durham, ARIP report 94, map scale 1:50,000.
- Webber, L.R., Marmick, F.F., and Richards, N.R., 1946. Soil survey of Durham County, Ontario Soil Survey, report 9, 68 p., map scale 1:126,720.

PRELIMINARY SURFICIAL GEOLOGY SITE ATTRIBUTE LEGEND

RECENT

- 13 Fill
- 12 Aeolian
- 11 Colluvium
- 10 Alluvium
- 9 Organic Deposits

PLEISTOCENE

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

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

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

- 7 massive to laminated 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 silt; sand, silt and clay interbeds; <5% clasts

- 4b Halton

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

- 3.4 Undifferentiated

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

- 3a Newmarket

Undetermined

- ARCHIVAL BOREHOLE
- 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

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

- 8 a) sand and silty sand
- b) gravely sand and gravel

Glaciolacustrine Deposits: massive to laminated silt and clay (Peel/Schomberg Ponds above, Lake Iroquois/Algonquin below raised shoreline)

- 7 a) includes interbedded diamicton
- b) deformed silt and clay

Glaciofluvial Deposits:

- a) mainly sand
- b) mainly gravel

Ice Contact Stratified Drift Deposits:

- a) mainly sand
- b) mainly gravel

Till: clayey silt to silt

- c) Wildfield/Kettleby
- d) Halton
- a) Tavistock

Till: sandy silt to sand

- c) Wentworth
- b) Port Stanley
- a) Newmarket

Older Glacigenic Drift:

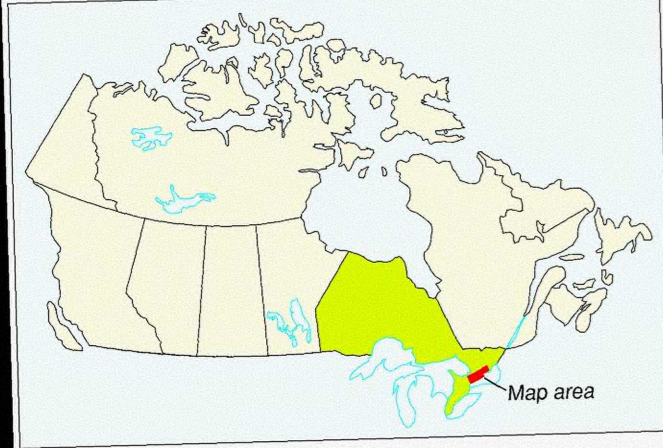
- a) Meadowcliffe Till
- a) Sunnybrook drift

PALEOZOIC

- 1 Bedrock: carbonate
- a) bedrock-drift complex
- b) sandstone or shale

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

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



Mean magnetic declination 1971 varies from 08°16' westerly at centre of west edge to 10°28' 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

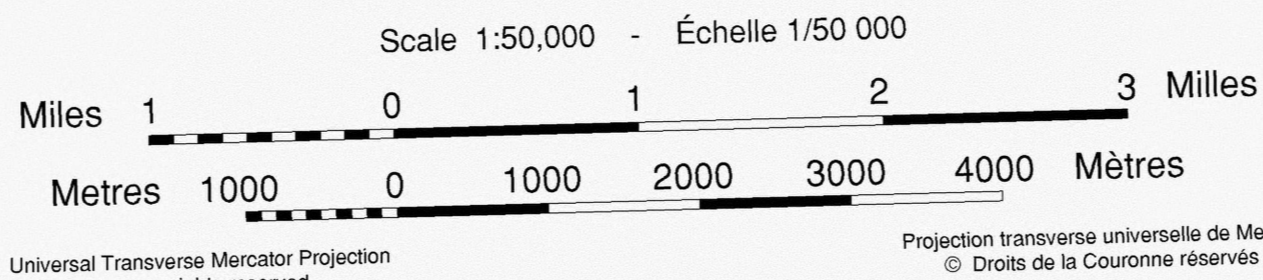
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PRELIMINARY SURFICIAL GEOLOGY SITE ATTRIBUTES

OSHAWA AREA

ONTARIO



CREDITS

Field survey by T. A. Brennand, 1993.
 Field assistance by T. Shaw and C. Miller, 1993.
 Compilation and editing of surficial geology map by D.R. Sharpe and W.D. Finley, 1993.
 Contribution of the NATMAP and Oak Ridges Moraine project.
 Archival borehole records from Ontario Ministry of Transport foundation reports, 1972-1989.
 Digital cartographic production by Northwood Geoscience Ltd., Ottawa.

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