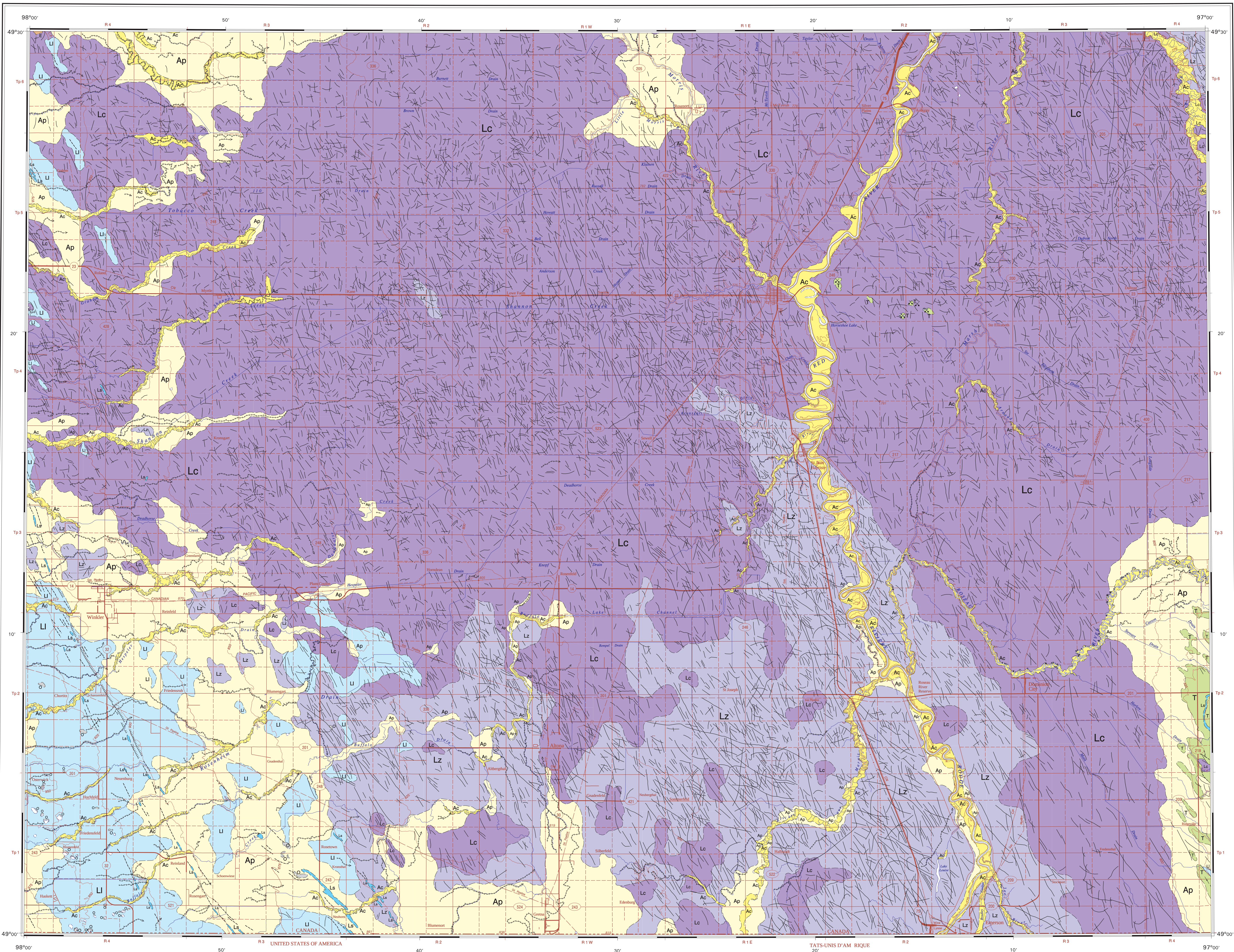




LEGEND

This legend is common to GSC maps 2049A–2060A, and MGS geoscientific maps MAP2003-1–MAP2003-12. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend necessarily appear on this map.

QUATERNARY

- NONGLACIAL DEPOSITS**
- O** Organic deposits: peat, muck; <1–5 m thick; very low relief wetland deposits; accumulated in fen, bog, swamp, and marsh settings.
 - E** Eolian sediments: fine sand; 1–5 m thick; dunes; formed by wind prior to stabilization by vegetation; in most cases on subaqueous outwash sand.
 - Lm** Shoreline sediments: sand and gravel; 1–2 m thick; beaches; formed by waves at the margins of modern lakes.
- ALLUVIAL DEPOSITS:** sand and gravel, sand, silt, clay, organic detritus; 1–20 m thick; channel and overbank sediments; deposited by postglacial rivers.
- Ap** Overbank deposits.
 - Ac** Channel deposits.

- GLACIALACUSTRINE DEPOSITS**
- GLACIAL LAKE SHORELINE SEDIMENTS:** sand and gravel; 1–20 m thick; beach ridges, spits, bars, littoral sand and gravel; formed by waves at the margin of glacial Lake Agassiz.
- Ls** Shoreline deposits.
 - Li** Littoral deposits.
- OFFSHORE GLACIALACUSTRINE SEDIMENTS:** clay, silt, minor sand; 1–20 m thick; very low relief massive and laminated deposits; deposited from suspension in offshore, deep water of glacial Lake Agassiz; commonly scoured and homogenized by icebergs.
- Lz** Clayey to sandy silt.
 - Lc** Clay to silty clay.

- GLACIOFLUVIAL DEPOSITS**
- Gs** Subaqueous outwash: fine sand, minor gravel, thin silt and clay interbeds; 1–75 m thick; subaqueous outwash fans; deposited near the ice margin in glacial Lake Agassiz by meltwater turbidity currents, commonly reshaped by wave erosion and reworked by wind.
 - Gc** Ice-contact glaciofluvial sediments: sand and gravel; 1–20 m thick; complex deposits, belts with single or multiple esker ridges and kames, as well as thin, low-relief deposits; deposited in contact with glacial ice by meltwater.
- Gc** Predominantly derived from carbonate rocks.
 - Gp** Predominantly derived from igneous and metamorphic rocks.

- GLACIAL DEPOSITS**
- T** Till: calcareous silt diamict; 1–75 m thick; low-relief, commonly streamlined deposits; subglacial deposits; largely derived from carbonate rocks; thicker sequences consist of multiple units of varying texture; commonly scoured by icebergs; covered discontinuously by thin veneers (<1 m) of glaciofluvial and glaciofluvial sediments.
- DISCONTINUOUS TILL AND ASSOCIATED GLACIOFLUVIAL SEDIMENTS:** gravelly silt to sand diamict, sand and gravel; 1–30 m thick; low-relief deposits; between bedrock outcrops making up 25–75% of the area; sandy till interbedded and interspersed with nearly equal and often greater amounts of sandy glaciofluvial sediments, as well as minor glaciofluvial sediments.
- Tc** Predominantly derived from carbonate rocks.
 - Tp** Predominantly derived from igneous and metamorphic rocks.

- PRE-QUATERNARY**
- ROCK:** >75% bedrock outcrop; Paleozoic carbonate-dominated rocks in areas west and south of Lake Winnipeg, exposed typically as glacially striated, low-relief surfaces; in Precambrian terrain, generally unweathered intrusive, metasedimentary, and metavolcanic rocks having a glacially scoured irregular surface with high local relief; includes patches of thin glacial sediments and organic material.
- Rc** Paleozoic sedimentary rocks.
 - Rp** Precambrian igneous and metamorphic rocks.

- Geological boundary (approximate)
- Built-up area (map GSC 2055A / MGS MAP2003-7 only)
- Mine waste
- Peat-extraction area
- Gravel pit
- Mine or bedrock quarry
- Stabilized dunes
- Abandoned channel
- Minor beach ridge
- Wave-cut scarp
- Groundwater sapping channel
- Piping depression
- Iceberg scour
- Tunnel valley
- Esker (direction of flow indicated)
- Streamlined landform
- Glacial striae
- Crossed striae (numbers indicate relative age, 1 being the oldest)
- Small bedrock outcrop

Copies of this map may be obtained from the Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1S 4L6, 3303 5th Street, N.W., Calgary, Alberta T2L 2A7, 101-0000 Robert Street, Vancouver, B.C. V6B 5Z8, Manitoba Industry, Economic Development and Mines, Manitoba Geological Survey, Publication Sales, 265-1885 Ellice Avenue, Winnipeg, Manitoba R2S 1P2.

Geology by G.L.D. Matile, Manitoba Geological Survey, 1997–1998

Co-ordinated by H. Threlkoff and G.L.D. Matile through the auspices of the Southern Prairies NATMAP Project and the Winnipeg Region NATMAP Project

Digital cartography by P. St-Amour, Earth Sciences Sector Information Division (ESS Info)

This map was produced from processes that conform to the ESS Info Publishing Services Subdivision Quality Management System, registered to the ISO 9001:2000 standard

GSC MAP 2058A
MGS GEOSCIENTIFIC MAP MAP2003-10
SURFICIAL GEOLOGY
WINKLER
MANITOBA

Scale 1:100 000/Échelle 1/100 000

kilomètres 2 0 2 4 6 8 kilomètres

Universal Transverse Mercator Projection
North American Datum 1983
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Projection transversale universelle de Mercator
Système de référence géodésique nord-américain, 1983
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Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada and the Manitoba Geological Survey

Digital base map from data compiled by Geomatics Canada, modified by ESS Info

Mean magnetic declination 2004, 5°03' E, decreasing 6.2' annually. Readings vary from 4°37' E in the SW corner to 5°31' E in the NE corner of the map

Elevations in feet above mean sea level

02-010	02-011	02-012	02-013	02-014
GSC 2048A	GSC 2050A	GSC 2051A	GSC 2052A	GSC 2053A
MGS MAP2003-1	MGS MAP2003-2	MGS MAP2003-3	MGS MAP2003-4	MGS MAP2003-5
02-015	02-016	02-017	02-018	02-019
GSC 2054A	GSC 2055A	GSC 2056A	GSC 2057A	GSC 2058A
MGS MAP2003-6	MGS MAP2003-7	MGS MAP2003-8	MGS MAP2003-9	MGS MAP2003-10
02-020	02-021	02-022	02-023	02-024
GSC 2059A	GSC 2060A	GSC 2061A	GSC 2062A	GSC 2063A
MGS MAP2003-11	MGS MAP2003-12	MGS MAP2003-13	MGS MAP2003-14	MGS MAP2003-15

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO GEOGRAPHIC COORDINATE SYSTEMS OF CANADA AND MANITOBA GEOLOGICAL SURVEY MAPS

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2004: Surficial geology, Winkler, Manitoba; Geological Survey of Canada, Map 2058A; Manitoba Industry, Economic Development and Mines, Manitoba Geological Survey, Geoscientific Map MAP2003-10, scale 1:100 000.