



SURFICIAL GEOLOGY

SURFICIAL DEPOSITS QUATERNARY

NONGLACIAL ENVIRONMENT

7 ORGANIC DEPOSITS: lichen-moss, sedge, and woody peat; 1.5 to 3 m thick; may occur at or up to 3 m above the water table; includes both bog peat and fen peat. Peat mantles most geological features.

FLUVIAL DEPOSITS: material deposited by streams within active drainage systems since the retreat of the ice, proglacial lakes, or glacial ice.

6 Alluvial sediments: silt, sand, and rounded gravel, commonly terraced; thicknesses range from a thin veneer up to 30 m deposited by running water as floodplains, spits, point bars, and islands; this unit contains minor detrital sediments.

NONGLACIAL AND GLACIAL ENVIRONMENT

MARINE/GLACIOMARINE DEPOSITS: well sorted, stratified sand to stony silt deposited in Tyrrell Sea, and glacial deposits modified by marine processes during estuary commonly overlain by peat.

5c Detritic sediments: sand, pebbly sand, and gravel deposited in Tyrrell Sea by glacial or nonglacial streams.

5b Nearshore sediments: well sorted silt, sand, and gravel; up to 3 m thick; occurs as a series of ridges in the form of beaches, bars, spits, and ice-pushed ridges, or as a flat plain.

5a Offshore sediments: poorly sorted clayey silt, stony silt, and sand with pockets of nearshore sand and gravel and winnowed sand; probably a till plain levelled by filling of depressions and planation by wave action; thicknesses of up to 2 m near marine limit and increasing towards Hudson Bay to a maximum of 7 m; may contain marine fossils and is commonly overlain by organic materials.

LACUSTRINE/GLACIOLACUSTRINE DEPOSITS

4b Nearshore sediments: well sorted sand and gravel; occurs as a ridge or series of ridges with 1 to 4 m of relief; includes beaches, bars, spits, and ice-pushed ridges.

4a Offshore sediments: well sorted clay, silt, and sand; thickness ranges from a thin veneer up to 20 m; surface characterized by iceberg scours and extensive areas of peat.

GLACIAL ENVIRONMENT

GLACIOFLUVIAL DEPOSITS: water sorted, stratified sand and gravel; sand deposited in, around, or near a glacier, largely as a result of meltwater flow.

3a Outwash sediments: well rounded, cross-stratified sands and gravels, 3 m to 20 m thick, characterized by broader channels and kettle depressions; occurs along the flanks of eskers or in the bottom of subglacial and proglacial meltwater channels; surfaces are commonly terraced and hummocky.

2 Ice contact stratified drift: well sorted, poorly stratified sand and gravel karne deposits, 10 to 30 m high, stratified sand and minor gravel esker deposits, 3 to 20 m high, and recessional, end, or interlobate moraines. Karne occur as irregular mounds flanking eskers. Eskers occur as eskerlike ridges, generally parallel to the direction of ice movement.

GLACIAL DEPOSITS (TILL)

1b Till blankets: silty to sandy, 1 to 10 m thick; masks most of the bedrock features; surface features include drumlins, fluting, ribbed moraine, and hummocks.

1a Till veneers: sandy, usually less than 1 m thick, interspersed with areas of thicker till, bedrock, marine or lacustrine sediments. Surface reflects the underlying bedrock structure.

BEDROCK PRE-QUATERNARY

R2 Paleozoic rocks: sedimentary carbonate rocks; dolomitic limestone and dolomite.

R1 Precambrian rocks: largely massive granitic and gneissic rock with isolated bands of volcanic rock.

- x small bedrock outcrop
- strike (ice flow direction known, unknown)
- drumlin
- fluting
- crag and tail (direction of ice flow known)
- kettle hole
- recessional, lateral, or end moraine ridge
- ribbed moraine
- esker (direction of flow known, unknown)
- meltwater channel (large, small)
- beach ridge
- trimline or terrace slope break
- Tyrrell Sea limit
- thermokarst depressions
- dunes

*Does not appear on this map

Geology by R.N.W. Dilabio, C.A. Kaszycki, 1984, 1985; E. Nielsen, 1983 and V.J. Way Nee, 1985. Geology of 64C/14, 15 is largely taken from O'Donnell, 1976a, b.

References:
O'Donnell, N.D.
1976a: Quaternary geology of the Lynn Lake area; Manitoba Department of Energy, Resources and Environmental Management, Mineral Resources Division, Preliminary Map 1976A-1.
1976b: Quaternary geology of the Cochrane Lake area; Manitoba Department of Energy, Resources and Environmental Management, Mineral Resources Division, Preliminary Map 1976B-2.

Compiled by C.A. Kaszycki and V.J. Way Nee, 1985



SURFICIAL GEOLOGY GRANVILLE LAKE MANITOBA

Scale 1:125 000

Contribution to the CANADA-MANITOBA MINERAL DEVELOPMENT AGREEMENT 1984-1989

Energy, Mines and Resources Canada
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Manitoba Energy and Mines