Energy, Mines and Resources Canada
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Geological Survey of Canada
Commission géologique du Canada

DESCRIPTIVE NOTES

The Oxford House, Manitoba map area is distinct from the surrounding regions because it contains a large area of surface till. This represents a striking difference from the Island Lake map area to the immediate south, where no exposures of till have been identified.

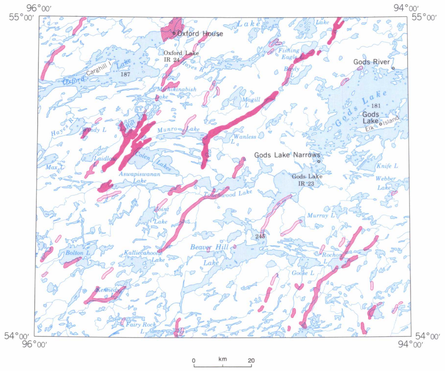
The region is characterized by rolling hills of low to moderate relief and vegetated by boreal forest. The topography is controlled by the structure of commonly exposed bedrock and slopes gently from elevations of approximately 260 m a.s.l. in the south to about 200 m a.s.l. at the northeast corner of the map area. All drainage is to the northeast towards Hudson Bay.

The area is situated within the Superior Province of the Canadian Shield. Precambrian rocks, primarily massive granite, granodiorite, and quartz diorite account for most of the bedrock. Three main belts of volcanic rock, consisting largely of basalt and andesite, which are partly overlain by arkose, feldspathic quartzite, and quartzite, trend roughly west-northwest to east-southeast. Smaller areas of greywacke, subgreywacke, and argillite are also found in the region.

Glaciolacustrine silt and clay, which were deposited in glacial Lake Agassiz, are generally 1-2 m thick and exist primarily as patches in low-lying areas. This represents a marked difference from the adjacent Island Lake map area to the south where these same Lake Agassiz sediments commonly exceed 3 m in thickness. An irregular thin veneer of glaciolacustrine silt and clay overlies much of the till in the map area. Limited field checking by aircraft reconnaissance did not permit detailed ground investigations and till has been mapped in all areas where the silt and clay deposits, likely less than 1 m thick, have not masked the underlying topography.

Ice contact deposits are limited to several eskers ranging from small and discontinuous to large and continuous. No major end or interlobate moraines were identified. Local ice contact deposits have been modified by lake action to a much lesser degree than have similar deposits in the Island Lake area to the south. This suggests a comparatively shorter duration of lacustrine reworking of the glaciofluvial sand and gravel and possibly a shorter period of inundation by glacial Lake Agassiz in the study area.

The large number of ice contact deposits in the region offer good economic potential as aggregate resources. The few communities in the area can meet their sand and gravel requirements with local deposits but in order for the full aggregate potential of the region to be realized an improved network of roads is required.



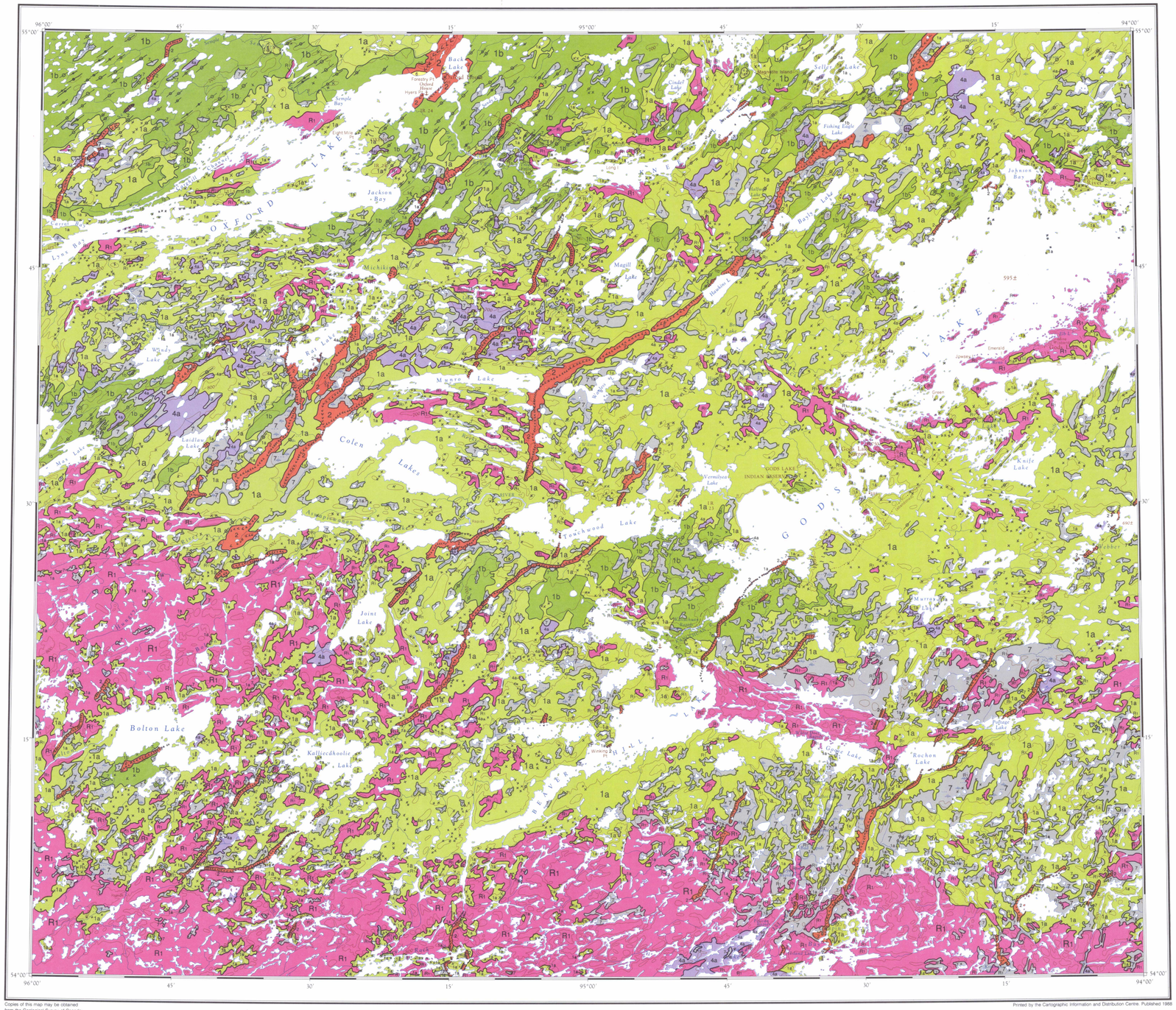
POTENTIAL AGGREGATE RESOURCES

SAND AND GRAVEL DEPOSITS

High potential for economic feasibility: large volume of ice contact and esker deposits. Ideally, gravel content is greater than 35%, oversize gravel (>10 cm diameter) content is less than 20%, and lithological deficiencies (i.e., chert, shale, mica, etc.) are kept to a minimum

Medium potential for economic feasibility: small volume of ice contact and esker deposits and large volume of nearshore lacustrine and nearshore marine deposits. Deposit lacks either in volume or in quality of aggregate to be considered of high potential

Low potential for economic feasibility: small volume of nearshore lacustrine or nearshore marine deposits and very small volume of ice contact and esker deposits



Copies of this map may be obtained from the Geological Survey of Canada:
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3303-33rd Street, N.W., Calgary, Alberta T2L 2A7

Contribution to Canada-Manitoba Mineral Development Agreement 1984-89, a subsidiary agreement under the Economic and Regional Development Agreement. Project funded by the Geological Survey of Canada

Manitoba Energy and Mines

Canada

MAP 1673A

SURFICIAL GEOLOGY

OXFORD HOUSE

MANITOBA

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilometres

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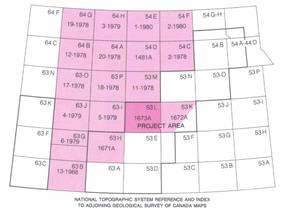

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

LEGEND

Coloured legend blocks indicate map units that appear on this map

SURFICIAL DEPOSITS
QUATERNARY

NONGLACIAL ENVIRONMENT

HOLOCENE

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*

6 — *FLUVIAL DEPOSITS: material deposited by streams within active drainage systems since the retreat of the sea, proglacial lakes, or glacial ice*
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 deltaic 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 offlap; commonly overlain by peat

5c — *Deltaic 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 windblown 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: massive to bedded silt-clay with granules, overlain by a veneer of sand. Deposited in glacial Lake Agassiz; where deposits are thin, they mirror the underlying glacial and bedrock structures, and where thick, they form a flat plain

4d — *Littoral sediments: nearshore blanket of sand grading basinward into undifferentiated silt and clay*

4c — *Nearshore sediment veneer: well sorted sand and gravel; occurs as a ridge or series of ridges with 1 to 4 m of relief on wave washed glaciofluvial deposits pre-dating glacial Lake Agassiz*

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

LATE PLEISTOCENE

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

3 — *Outwash sediments: well rounded, cross-stratified sands and gravels, 3 m to 20 m thick, characterized by braided 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 kame deposits, 10 to 30 m high, stratified sand and minor gravel esker deposits, 5 to 20 m high, and recessional, end, or interlobate moraines. Kames occur as irregular mounds flanking eskers. Eskers occur as elongate ridges, generally parallel to the direction of ice movement*

GLACIAL DEPOSITS (TILL): poorly sorted debris deposited at the front of or beneath glaciers or under ice shelves. The tills of the western side of the province are sandy to silty sand and have a high percentage of clasts derived from granitic terrain; the tills of the eastern side are generally silty and highly calcareous

1b — *Till blanket: 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 veneer: 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

R_2 — *Paleozoic rock: sedimentary carbonate rocks; dolomitic limestone and dolomite*

R_1 — *Precambrian rock: largely massive granitic and gneissic rock with isolated bands of volcanic rock*

Geological boundary
Small bedrock outcrop
Drumlin
Fluting
Crag and tail (direction of ice flow known)
Recessional, lateral, or end moraine ridge
Ribbed moraine
Esker (direction of flow known, unknown)
Meltwater channel (large, small)

Geology by M.D. Clarke, 1985, 1986, based mainly on airphoto interpretation with limited ground checking

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Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the same scale published by Surveys and Mapping Branch in 1977

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1988, 03°12' East, decreasing 20.4' annually. Readings vary from 04°35' E in the SW corner to 01°42' E in the NE corner of the map

Elevations in feet above mean sea level

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Recommended citation:
Clarke, M.D.
1988: Surficial geology, **Oxford House, Manitoba;** Geological Survey of Canada, Map 1673A, scale 1:250 000

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