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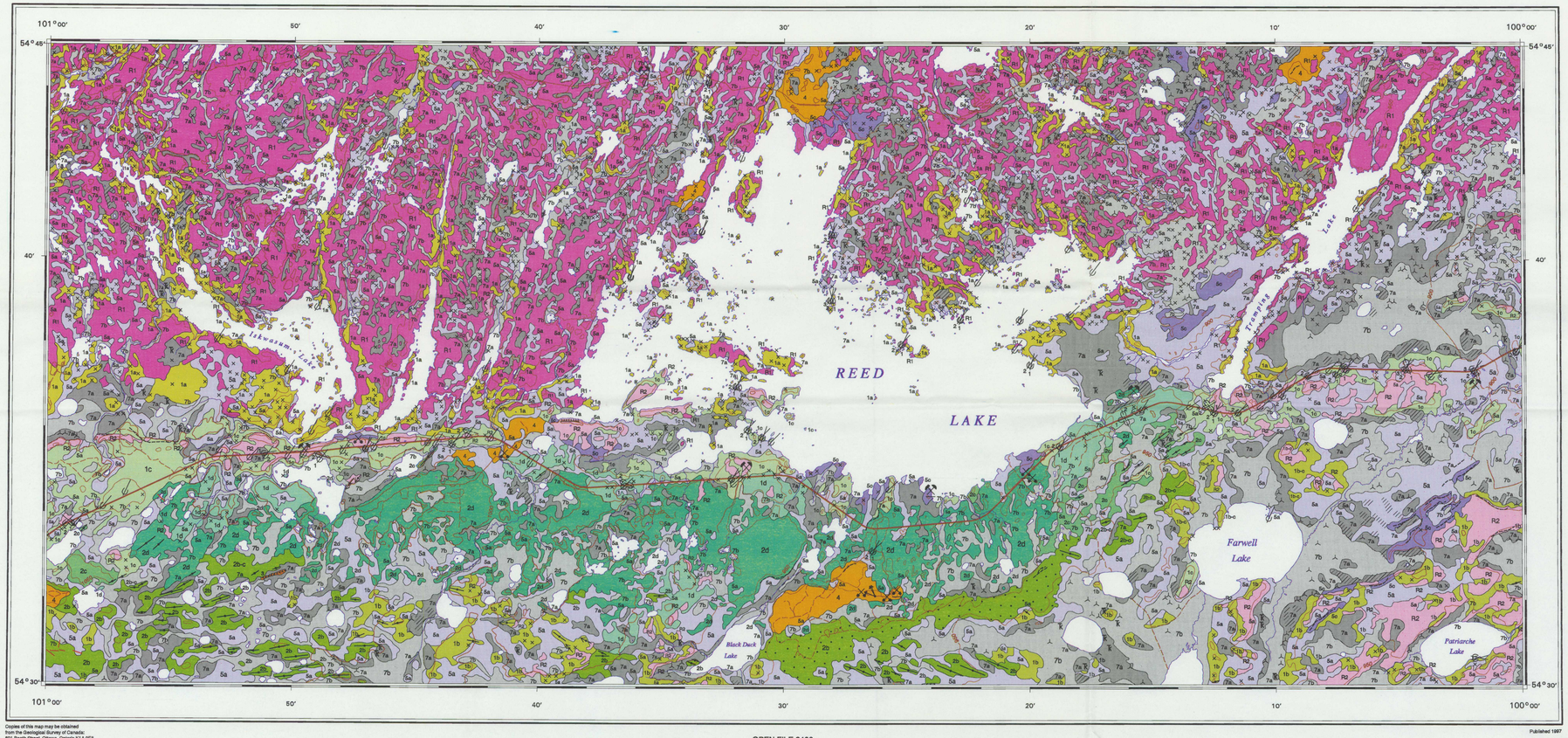
GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA

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



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

Published 1997

LEGEND

Coloured legend blocks indicate map units that appear on this map

QUATERNARY - SURFICIAL DEPOSITS

NONGLACIAL ENVIRONMENT

ORGANIC DEPOSITS: peat, muck; 1 to 5 m thick; commonly underlain by fine glacial lake deposits; marttes extensive areas on the Paleozoic terrain or occurs in more confined low-lying poorly drained parts of the Shield

7b — *Fen peat: wet sedge, and moss peat; includes string fen, floodplain and riverine marshes; occurs as flat grassy surfaces with few trees, and commonly visible surface water; derived from sedge and moss vegetation; permafrost present in isolated palsa or peat plateau which occur within the fen bog*

7a — *Bog peat: moss and woody peat; occurs as raised irregular surfaces with an open to closed tree cover; derived from spruce forest vegetation; thermokarst depressions and ponds, wooded palsas and forested peat plateaus are common; contains some areas of collapse scar fens*

6 — *ALLUVIAL DEPOSITS: silt, sand, and gravel, up to 30 m thick; deposited by running water in both modern and old streams; occurs mostly in the drainageway of Saskatchewan River, as floodplains, terraces, point bars, channel-fills, and deltas*

PROGLACIAL ENVIRONMENT

GLACIAL LAKE DEPOSITS: massive to stratified clay, silt, sand, and gravel; thickness ranges from a thin veneer to tens of metres; sediments reworked by the wave action of glacial Lake Agassiz, or carried to the basin in large part by glacial meltwater and deposited in offshore and deep water of Lake Agassiz

5c — *Nearshore and littoral sediments: sand, gravel, and rock rubble, moderately well sorted and commonlly horizontally bedded; occurs either as a blanket of sand, commonly less than 2 m thick, grading basinward into finer sediments, or as isolated or series of ridges, 1 to 3 m in height, including beaches, bars, and spits, commonly well developed on glaciofluvial deposits; flights of rubble beach deposits occur along carbonate bedrock escarpments in the southeast part of the NATMAP Shield Margin Project area*

5b — *Offshore sediment blanket: clay, silt and silty sand, minor sand, gravel and diamicton; fine grained sediments are commonly massive and brownish near surface, or laminated, greyish, and weakly calcareous at depth; 2 to 25 m thick, up to 45 m thick in the Grass River Basin; forms flat plains in low relief areas, mantled with peat; deposited in deep water environment; surfaces locally inscribed by iceberg scours*

5a — *Offshore sediment veneer: clay, silt and silty sand; less than 2 m thick; forms a discontinuous blanket mimicking underlying glacial and bedrock topography; includes undifferentiated glaciolacustrine sediments deposited in deep water beyond or near the ice margin; surfaces locally inscribed by iceberg scours*

GLACIAL ENVIRONMENT

GLACIOFLUVIAL DEPOSITS: stratified sand and gravel, minor diamicton; sorted coarse grained sediment deposited by flowing glacial meltwater in contact with or near the glacier

4 — *Subaqueous outwash sediments: well sorted fine sand; commonly rippled and/or crossbedded; interbedded with clay, gravel and diamictic units of variable thicknesses; 1 to 20 m thick; deformation and faulting commonly evident; deposits occur as fans or elongated terraces and ridges; sediments deposited in glacial Lake Agassiz at or near the retreating ice front by meltwater turbidity currents*

3 — *Proximal glaciofluvial sediments: well rounded interstratified sand and gravel, minor diamicton; 3 to 25 m thick; forming eskers, kames, ceruvasse fillings, and ice-side deposits; includes undifferentiated ice contact sediments; deposited by sub- or englacial meltwater streams in contact with glacier ice*

GLACIAL DEPOSITS: unsorted to poorly sorted diamictons deposited as till at the ice margin or beneath the glacier. The area has been glaciated by ice from two lobes, the Keewatin lobe of northern provenance and the Hudson lobe of eastern provenance. Glacial deposits have been subdivided into 4 units as follows based on provenance, underlying bedrock, and surface morphology: a) those of northern provenance overlying Precambrian rocks are generally sandy, permeable, non to slightly calcareous, and contain almost exclusively debris derived from Shield terrane; b) glacial deposits of eastern provenance are generally silty sandy, weakly permeable, moderately to strongly calcareous, and contain fewer Shield clasts; c) those of northern provenance but underlain by Paleozoic bedrock are sandy silty or sandy clayey, weakly to strongly calcareous, and locally derived; d) hummocky till deposited by stagnant Keewatin ice south of Reed Lake is highly calcareous, bouldery, may include pebbly gravel layers, and forms and east-west ice contact trending belt

2a, 2b, 2c, 2d — *Till blanket: forms a continuous cover, 2 to several metres thick, locally up to 50 m thick, masking underlying bedrock topography; deposits form till plain, flutings, and moraines; surface may be covered by a discontinuous blanket of Lake Agassiz clay or littoral sand and gravel; 2a - till of northern provenance underlain by Precambrian rocks; 2b - till of eastern provenance; 2c - till of northern provenance underlain by Paleozoic rocks; 2d - hummocky till in ice contact belt*

1a, 1b, 1c, 1d — *Till veneer: forms a discontinuous cover, ranging from 1 to 2 m thick; commonly occurs on the lee side of bedrock outcrops or forms a thin veneer over the Paleozoic bedrock; interspersed with isolated areas of thicker till in bedrock depressions; surface morphology reflects underlying bedrock structure; 1a - till of northern provenance underlain by Precambrian rocks; 1b - till of eastern provenance; 1c - till of northern provenance underlain by Paleozoic rocks; 1d - hummocky till in ice contact belt*

PRE-QUATERNARY - BEDROCK

R2 — *Paleozoic sedimentary rocks: primarily dolomite and dolomitic limestone, minor sandstone and shale; surfaces are commonly pitted and frost shattered, but glacially polished and striated surfaces are preserved locally; occurs as flat-lying outcrops with patches of thin drift*

R1 — *Precambrian rocks: metavolcanic and metasedimentary rocks, associated intrusive bodies; glacially scoured outcrops forming abundant roches moutonnées and striated or grooved surfaces; gently rolling topography with thin patchy drift cover*

Geological boundary (defined)
Thermokarst depressions (small, large)
Palsen and peat plateau
Beach ridge, spit, or bar
Iceberg scour
Moraine
Esker
Paleocurrent direction
Streamlined landform
Crag and tail landform
Roches moutonnées
Striae (ice flow direction known, unknown, poorly defined, unknown and poorly defined)
Crossed striae (1 = oldest)
Small bedrock outcrop
Rock escarpment
Quarry or mine (active, abandoned)
Gravel pit (active, abandoned)

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OPEN FILE
DOSSIER PUBLIC
3406
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
05/1997

LOCATION MAP

Geology by I. McMartin, 1992-1994

Digital cartography by M.M. Proulx, Geoscience Information Division

Coordinated through the auspices of the NATMAP Shield Margin Project by I. McMartin

Electrostatic plot produced by the Geoscience Information Division

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

OPEN FILE 3406

SURFICIAL GEOLOGY

REED LAKE AREA

MANITOBA

Scale 1:100 000 - Échelle 1/100 000

Kilometres 2 1 0 2 4 6 8 Kilomètres

Transverse Mercator Projection
CM 100°00', Scale Factor 1.0

Projection transverse de Mercator
M.C. 100°30', facteur d'échelle 1,0

Digital base supplied by Geomatics Canada and modified by the Geoscience Information Division

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, National Resources Canada, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1997, 9°04' E, decreasing 7.7' annually. Readings vary from 8°31' E in the SE corner to 9°38' E in the NW corner of the map

Elevations in feet above mean sea level

63 M/2	63 M/1	63 N/4	63 N/3	63 N/2	63 N/1	63 O/4 OF 3324	63 O/3
63 L/15	63 L/16	63 K/13	63 K/14	63 K/15	63 K/16	63 J/13	63 J/14
63 L/10	63 L/9 OF 3314	63 K/12	63 K/11	63 K/10 OF 3406	63 K/9	63 J/12 OF 2835	63 J/11
63 L/7 OF 3100	63 L/8	63 K/5 OF 3342	63 K/6	63 K/7 OF 3060	63 K/8	63 J/5 OF 2744	63 J/6
63 L/2	63 L/1	63 K/4	63 K/3	63 K/2	63 K/1	63 J/4	63 J/3

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

Canada

Recommended citation:
McMartin, I.
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