

QUATERNARY

Holocene

NONGLACIAL ENVIRONMENT

O **ORGANIC DEPOSITS:** peat and muck up to 2 m thick but commonly less than 1 m thick; formed predominantly by the accumulation of vegetative material in bogs, occurs in depressions, along valley bottoms, and on marine silt and clay; frozen ground is commonly present at depths greater than 30 cm; may contain ice-wedge polygons and thermokarst collapse structures. Small unmapped organic deposits occur in most terrain units.

A **ALLUVIAL DEPOSITS:** gravel to silt size sediment deposited by modern streams and rivers; deposits generally are stratified and moderately sorted, 1 to 5 m thick; occurs as floodplains and alluvial fans, in places covered by icings.

MARINE DEPOSITS: clay, silt, sand, and gravel; massive to well laminated silt and clay, and massive to cross-stratified and planar bedded sands; 1 to 20 m thick; deposited during marine regression resulting in a coarsening-upward sequence; may include fine grained glaciomarine sediments exposed at the base of stratigraphic sections; unit contains segregated and disseminated ground ice; rounded pebbles and cobble gravel form raised beaches and deltas indicated by symbols.

M3 **Littoral sediments:** medium to coarse grained sand with pebbles, may also consist of small cobbles and shingles, 1 to 3 m thick; blanket deposits with flat to gently undulating surface which in places overlie fine grained sediments, may contain beach ridges and ice-wedge polygons indicated by symbols.

M2 **Marine blanket:** undifferentiated silt and clay with minor sand, from 2 to 30 m thick; commonly occurs as coarsening-upward sequence with flat to gently undulating surface, contains segregated ice, may be extensively gullied and exhibit retrogressive thaw slumps, some pebble to cobble lag on surface.

M1 **Marine veneer:** undifferentiated sand, silt, and clay, but predominantly silt and clay, less than 2 m thick; occurs as sediments infilling depressions between bedrock outcrops and as a lag on washed bedrock and till surfaces below marine limit.

PLEISTOCENE (WISCONSIN GLACIATION)

GLACIAL ENVIRONMENT

D **GLACIOMARINE and MARINE DELTAS:** sand, gravel, and cobbles, massive to cross-stratified; 5 to 20 m thick; exhibits channelled surfaces, ice-wedge polygons, and more rarely, kettle lakes; commonly associated with the distal end of glaciofluvial complexes terminating at, or directly below, marine limit.

GLACIOFLUVIAL DEPOSITS: sand, gravel, and minor silt more than 1 m thick, sorting ranges from good to poor, and stratification from massive or cross-stratified to planar bedded; deposited by water flowing from, or in contact with, glacier ice. Zones of washed bedrock (meltwater scours), isolated kame deposits, and boulder lags shown by symbols.

G2 **Outwash:** rounded gravel and sand; massive to cross-stratified; 2 to 20 m thick; deposited at or beyond the ice margin, occurs as braided fans and outwash plains with ice-wedge polygons.

G1 **Esker sediments:** sand, silt, and gravel, in planar, cross-stratified, and massive beds; 1 to 20 m thick; forms ridges with both sharp-crested and flat-topped segments, mounds, and flanking aprons; formed subglacially or in subaerially exposed ice-walled channels.

TILL DEPOSITS: unsorted glacial debris (diamiction), consisting of a silt to sand matrix containing pebbles, cobbles, and boulders; deposited beneath, or along the margin of, glaciers as lodgment till, meltout till, and gravity flow deposits.

T2 **Till blanket:** from 2 to 10 m thick, occurs as till plains mimicking bedrock topography or as drumlinoids. Small rock outcrops in this unit are shown by symbols.

T1 **Till veneer:** less than 2 m thick; rock structure is generally visible on airphotos, unit includes patches of bedrock, till blanket, and marine sediments below marine limit.

PRE-QUATERNARY

R **Bedrock:** Archean granitic, gneissic, metasedimentary, and metavolcanic rocks. Proterozoic sedimentary rocks, mafic dykes, and sills, may include patches of till and marine veneer; areas of shattered and frost-heaved rock are shown by symbols. R1-volcanic rocks and pillowed basalt flows, R2-metasedimentary rocks, R3-granitoid rocks, R4-sedimentary rocks, R5-gabbro sills.

- Geological boundary
- ↪ Retrogressive thaw flow slide
- ⊕ Large solifluction lobes
- ▲▲ Frost heaved and shattered rock
- ⊥ Thermokarst depression
- # Ice-wedge polygon
- Raised beach
- Limit of postglacial marine submergence
- ∇ Delta (observed in stratigraphic section, with little or no surface expression)
- °° Lag concentration of glacially abraded boulders
- ⋯ Area of meltwater scour
- Subglacial or proglacial meltwater channel
- Esker (direction of flow known, unknown)
- * Kame
- Moraine
- Drumlinoid till form
- Rock crag-and-till tail form
- Roche moutonnée or whaleback
- Striation (ice flow direction known, unknown, 1=oldest)
- ⊙ Gossan
- x Small rock outcrop
- ↗ Bedrock escarpment with talus slope
- ⊙ Fossil locality
- ⊙ Radiocarbon date
- Sample site

CONTRIBUTION TO THE SLAVE PROVINCE NATMAP (NATIONAL MAPPING PROGRAM)

Related publications:

Kerr, D.E. 1994. Late Quaternary stratigraphy and depositional history of the Parry Peninsula-Perry River area, District of Mackenzie, Northwest Territories, Geological Survey of Canada, Bulletin 465, 34 p.

St-Onge, D.A. 1995. Surficial geology, Coppermine, District of Mackenzie, Northwest Territories (86 O E/2), Geological Survey of Canada, Open File 3076, scale 1:125 000.

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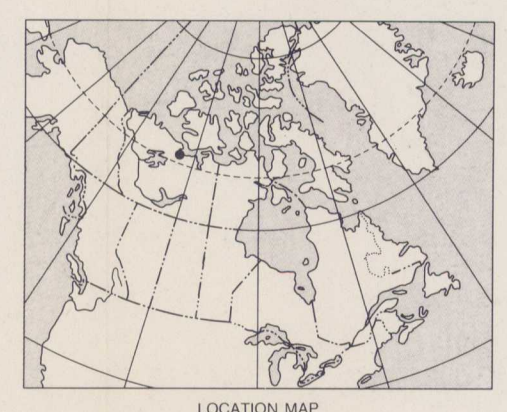
SURFICIAL GEOLOGY
COPPERMINE, DISTRICT OF MACKENZIE,
NORTHWEST TERRITORIES (86 O E/2)

Scale 1:125 000 - Échelle 1/125 000

Kilometres 0 2 4 6 8 10 Kilomètres

Universal Transverse Mercator Projection / Projection transverse universelle de Mercator

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Geology by L.A. Dredge, G.C. Ward and D.E. Kerr, 1995, with assistance from R. Roberts, P. Wilson, and S. Wolfe, and logistical support from the Polar Continental Shelf Project

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

Base map at the scale of 1:250 000 published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources in 1979.

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

The proximity of the North Magnetic Pole causes the magnetic compass to be erratic in this area.

Mean magnetic declination 1985, 31°26' E, decreasing 25.2" annually. Readings vary from 30°26' E in the SE corner to 32°29' E in the NW corner of the map.

Elevation in metres above mean sea level

87A	77B
86J	86I
86K	86L

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OTTAWA

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