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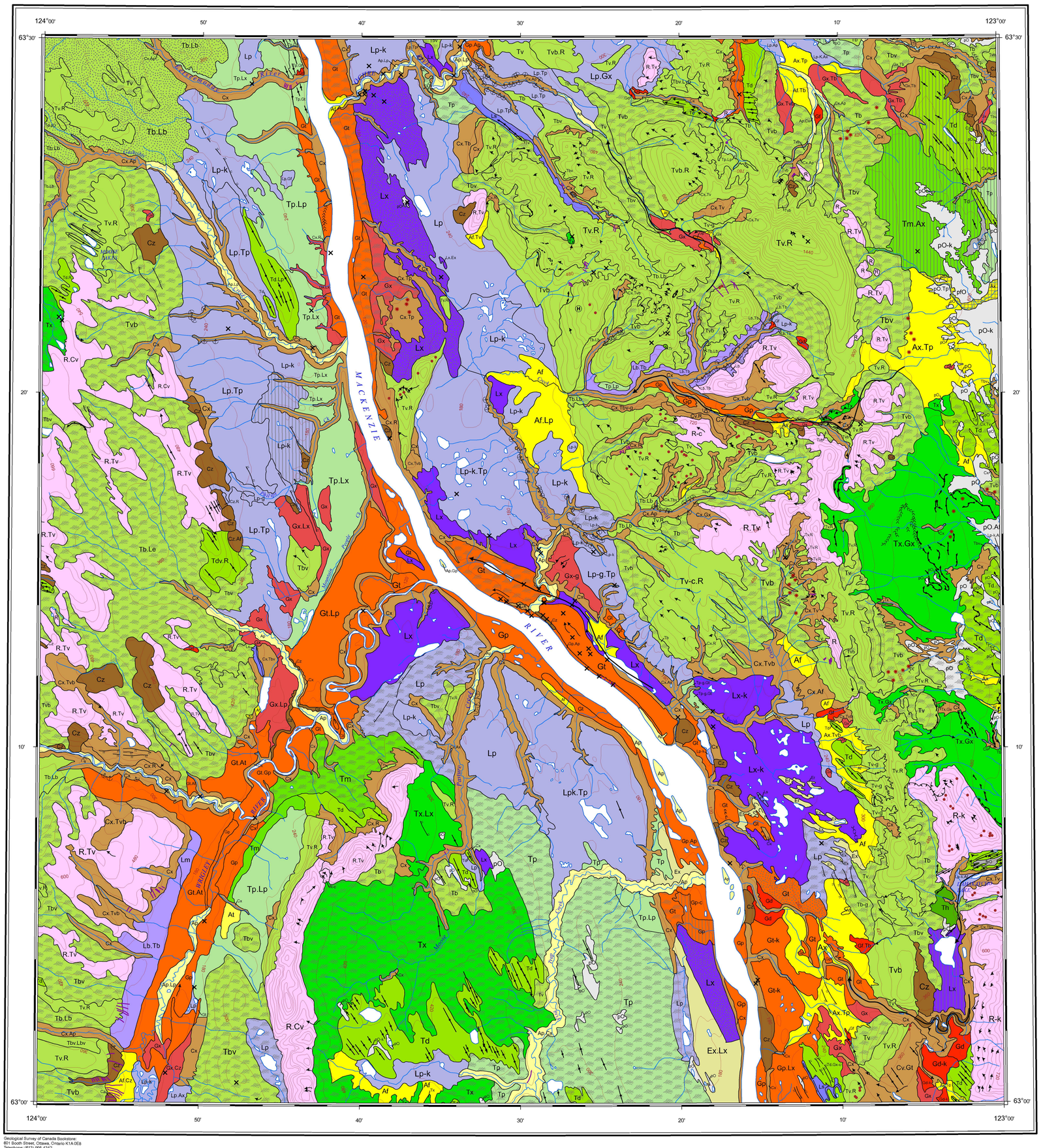

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OPEN FILE 6014

SURFICIAL GEOLOGY

WRIGLEY (95O/SW)

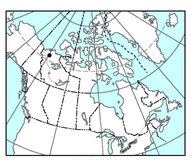
NORTHWEST TERRITORIES

Scale 1:100 000/Échelle 1/100 000

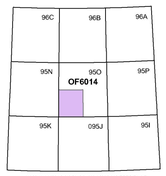
kilometres 2 0 2 4 6 8 kilomètres

Universal Transverse Mercator Projection
North American Datum 1983

Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983



LOCATION MAP



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

Canada

Holocene

Organic deposits
peat and muck, occurring as flat to gently sloping plains

- pO — PEATLAND: sphagnum peat generally underlain by woody sedge peat; 0.5-2 m thick
- pO-k — PEATLAND: contains thermokarst depressions
- pfO — PEATLAND (> 50%) AND FENLAND
- fpO — FENLAND (> 50%) AND PEATLAND

Alluvial deposits
sand, silt and minor gravel in association with modern drainage regime

- Ap — ALLUVIAL PLAIN: coarse sand and gravel with silt and fine sand occurring as channel and overbank floodplain sediments or in-channel bars; 3-5 m thick
- Af — ALLUVIAL FAN: mainly sand and silt with minor gravel and discontinuous layers of peat occurring as fan deposits
- At — ALLUVIAL TERRACE: mainly sand and silt with minor gravel; well stratified; < 5 m thick
- Ax — ALLUVIAL COMPLEX: floodplain and fan deposits; may contain small areas of colluvium

Colluvial and landslide deposits
diamicton and rubble derived from bedrock and/or surficial material through a variety of colluvial and landslide processes

- Cv — COLLUVIAL VENEER: discontinuous veneer of diamicton and rubble that conforms to local topography; < 2 m thick
- Cx — COLLUVIAL COMPLEX: slope complex consisting of diamicton and rubble; may include minor landslides (Cz) and/or alluvial fan (Af) units; > 2 m thick
- Cz — LANDSLIDE: bedrock, rubble and/or diamicton occurring as stepped or fan-shaped deposits; formed by rotational slumping, retrogressive thaw flow, debris flows, rock topple and translational slides in surficial sediments and/or bedrock; they are prominent along former meltwater channels

Late Pleistocene

Eolian deposits
fine to medium sand, minor silt derived from deltaic or glaciolacustrine deposits in association with deglacial wind direction

- Ev — EOLIAN VENEER: discontinuous cover of mainly fine sand and silt over other surficial units and bedrock; < 1 m thick
- Ex — EOLIAN COMPLEX: veneer to blanket deposited over other surficial materials particularly lacustrine and till plains; may include parabolic dunes
- Er — PARABOLIC DUNES: sand; < 15 m thick

Glaciolacustrine deposits
silt and clay with minor sand and diamicton; sediments deposited in a glacial lake

- Lp — LACUSTRINE PLAIN: flat to gently sloping cover; locally overlain by eolian sand, commonly associated with glacial Lake Mackenzie; 1-10 m thick
- Lp-k — LACUSTRINE PLAIN WITH THERMOKARST DEPRESSIONS: flat to gently sloping cover; locally overlain by eolian sand, commonly associated with glacial Lake Mackenzie; 1-10 m thick
- Lp-g — LACUSTRINE PLAIN, GULLIED: flat to gently sloping cover; locally overlain by eolian sand; 1-10 m thick
- Lb — LACUSTRINE BLANKET: deposit conforms to local topography up to 25 m of relief; locally overlain by eolian sand, commonly associated with glacial Lake Mackenzie; 2-30 m thick
- Lvb — LACUSTRINE VENEER TO BLANKET; locally overlain by eolian sand; < 3 m thick
- Lbv — LACUSTRINE BLANKET TO VENEER; locally overlain by eolian sand, commonly associated with glacial Lake Mackenzie; < 3 m thick
- Lm — LACUSTRINE PLAIN, ROLLING: rolling, occurring as low ridges; locally overlain by eolian sand; 2-15 m thick
- Ls — SHORELINE DEPOSITS: low, ridged beach deposits of sand and gravel; the deposits maybe intercalated with till deposits, commonly deposited locally along the margins of glacial Lake Mackenzie; < 5 m thick
- Lx — LACUSTRINE COMPLEX: deltaic sediments transitional between glaciofluvial and glaciolacustrine deposits with upper 0-5 m consisting of sand; locally overlain by eolian sand; < 20 m thick
- Lx-k — LACUSTRINE COMPLEX WITH THERMOKARST DEPRESSIONS: subject to active layer detachment, retrogressive thaw flow and debris slides; locally overlain by eolian sand; < 20 m thick
- Le — LACUSTRINE COVER, DISCONTINUOUS: highly modified by landsliding

Glaciofluvial deposits, outwash
sand and gravel locally with a veneer of eolian silt and/or sand; deposited as proglacial sediment by glacial meltwater

- Gp — GLACIOFLUVIAL PLAIN: flat to gently sloping; 2-20 m thick
- Gp-c — GLACIOFLUVIAL PLAIN, CHANNELLED: flat to gently sloping
- Gt — GLACIOFLUVIAL TERRACE; 10-50 m thick
- Gt-k — GLACIOFLUVIAL TERRACE WITH THERMOKARST DEPRESSIONS; 2-30 m thick
- Gd — GLACIOFLUVIAL DELTA: gently sloping, deposited in a glacial lake; 5-15 m thick
- Gd-k — GLACIOFLUVIAL DELTA WITH THERMOKARST DEPRESSIONS: gently sloping, deposited in a glacial lake
- Gf — GLACIOFLUVIAL FAN: mainly coarse gravel with minor sand, locally with mudflow deposits ; commonly deposited in a meltwater channel or lake where no sudden water level changes had occurred; 5-7 m thick

Glaciofluvial deposits, ice contact
sand and gravel locally with a veneer of eolian silt and/or sand; deposited as ice-contact sediment by glacial meltwater

- Gx — GLACIOFLUVIAL COMPLEX: includes eskers, kames and plains, commonly with thermokarst ponds in places; 2-30 m thick
- Gx-c — GLACIOFLUVIAL COMPLEX, CHANNELLED: containing ridges, hummocks and kettled plains, affected by glaciofluvial channelling; common along Blackwater River; 2-50 m thick
- Gx-g — GLACIOFLUVIAL COMPLEX, GULLIED: containing ridges, hummocks and kettled plains, affected by Holocene gullying; 2-50 m thick

UNDERSTANDING THE LEGEND

The genetic category of surficial material is indicated by the first upper case letter, e.g., G (glaciofluvial). The morphologic category is indicated in lower case following the genetic category, e.g., Gp (glaciofluvial plain). The modifying processes are indicated in lower case separated from the morphologic category by a (-) e.g., Gp-k (glaciofluvial plain with thermokarst processes).

Combined units are used where, for reasons of scale, the units cannot be separated. The main unit, covering over 50% of the geologic polygon, is separated by a (.) from the secondary unit, e. g., Gp-k.Lp. In cases where the polygon has a third unit it is represented by a patterened symbol, e.g., eolian sand cover, peatlands or fenlands.

Geology by A. Duk-Rodkin and D. Huntley, 2005-06

Digital cartography by F. Hardjowirogo and D.A. Lemay

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

Digital base from Geomatics Canada, modified by the Geological Survey of Canada

Elevations in feet above mean sea level

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2009

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Glacial deposits

unsorted silt, sand, and clay with clasts (pebbles, cobbles and some boulders) deposited by glacial ice in a variety of landforms

- Tp — TILL PLAIN: flat to gently sloping; 3-5 m thick
- Tp-g — TILL PLAIN, GULLIED: flat to gently sloping, affected by gullying processes, subject to active layer detachment; 3-5 m thick
- Tb — TILL BLANKET: gently to moderately sloping plain conforming to underlying topography; 2-8 m thick
- Tb-g — TILL BLANKET, GULLIED: gently to moderately sloping plain conforming to underlying topography, affected by gullying processes
- Tbv — TILL BLANKET TO VENEER: conforming to underlying topography; 2-8 m thick
- Tbv-g — TILL BLANKET TO VENEER, GULLIED: conforming to underlying topography; 2-8 m thick
- Tvb — TILL VENEER TO BLANKET: conforming to underlying topography
- Tv — TILL VENEER: with slopes conforming to underlying topography; < 2 m thick
- Tv-c — TILL VENEER, CHANNELLED: with slopes conforming to underlying topography, incised by glaciofluvial channels
- Tv-g — TILL VENEER, GULLIED: with slopes conforming to underlying topography, affected by gullying processes; < 2 m thick
- Tdv — TILL, DRUMLINOID TO VENEER: over glacially eroded streamline bedrock ridges; < 3 m thick
- Td — TILL, DRUMLINOID: hilly till plain with individual drumlins or extensive flutes; 3-15 m thick
- Tr — TILL, RIDGED: plain of generally coarse till (20-50% pebbles) deposited as ridges; commonly lateral and frontal moraines and hummocks; < 9 m thick
- Tm — TILL PLAIN, ROLLING: till plain with broad hummocks 10-20 m high (5-20% pebbles and larger); typically bouldery till in mountains; < 10 m thick
- Th — TILL, HUMMOCKY: generally coarse diamicton (20-50% pebbles) deposited as hummocks; may contain thermokarst ponds
- Tx — TILL COMPLEX: largely hummocky, ridged, and/or hilly with patches of gravel; in some places Tx forms veneer over bedrock

Paleozoic to Mesozoic

Bedrock
primarily prominent ridges, escarpments and hills associated with Devonian rocks

- R — Cretaceous shale (various colours) and limestone mostly in plains area; Paleozoic limestone, dolomite, shale (various colours), siltstone, mudstone and sandstone mostly in mountainous areas
- R-k — KARSTED: carbonate rocks affected by solution and collapse. Karst forms expressed as sinkholes and channels commonly developed in Mackenzie and Franklin Mountains; Cretaceous shale (various colours) and limestone mostly in plains area; Paleozoic limestone, dolomite, shale (various colours), siltstone, mudstone and sandstone mostly in mountainous areas
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Organic Deposits
This pattern is used when organic deposits appear as a second or third component in a polygon

- Peatland constituting 10 - 50% of the map unit
- Peatlands and fenlands undivided constituting 10 - 50% of the map unit

Eolian Deposits
This pattern is used when eolian sand veneer appears as a second or third component in a polygon, eg. Tp.Gx.Ev

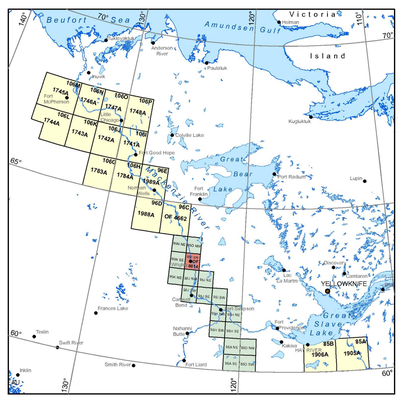
- Discontinous veneer (<1m) mainly fine sand and silt covering other surficial units and bedrock

Colluvial Deposits
This pattern is used when colluvial veneer appears as a second or third component in a polygon, eg. Tv.Cx, Tv.Lb.Cx

- Discontinous veneer (<1m) mainly diamicton and rubble that conforms to local topography

- Geological boundary (defined)
- Moraine ridge: unconsolidated sediments (till, sand and gravel) deposited in ridges at terminal, recessional, lateral and medial positions with respect to ice margins
- Drumlin, drumlinoid ridge or flute (direction uncertain): streamlined hill or ridge of till with long axis parallel to direction of iceflow
- Drumlin, drumlinoid ridge or flute (direction certain): streamlined hill or ridge of till with long axis parallel to direction of iceflow; elliptical base and arched profile with long gentle slope pointing in downstream direction
- Cirque: steep-walled, half bowl-like basins situated high on mountainsides; horseshoe or semi-circular in planform and produced by glacial erosion of valley headwalls
- Meltwater channel (*major*): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided, flat-bottomed valleys; channels may run across or along slope contours; may be presently dry, poorly drained or contains an underfit stream or small lakes
- Meltwater channel (*minor*): erosion and channel formation by meltwater flow along, beneath or in front of a glacier or ice sheet; range from broad, shallow channels to deeply incised, steep-sided, flat-bottomed valleys; channels may run across or along slope contours; may be presently dry, poorly drained or contains an underfit stream or small lakes
- Esker (direction certain): sinuous, low ridge composed of sand and gravel; formed by deposition from meltwater running through a channel beneath or within glacier ice
- Esker (direction uncertain): sinuous, low ridge composed of sand and gravel; formed by deposition from meltwater running through a channel beneath or within glacier ice
- Tension cracks
- Shoreline of former lake: low, ridged beach deposits of sand and gravel
- Dune ridge
- Kame
- Landslide
- Debris flow
- Sinkhole
- Ground Station *
- Helicopter observation

* Water mask is standard throughout the map. It has not been adapted to reflect changes of water levels for consequent years, therefore certain stations appear to be under water.



Surficial Geology Location Map, Southern Mackenzie Corridor

Duk-Rodkin, A. and Huntley, D., 2009. Surficial geology, Wrigley (95O/SW), Northwest Territories; Geological Survey of Canada, Open File 6014, scale 1:100 000