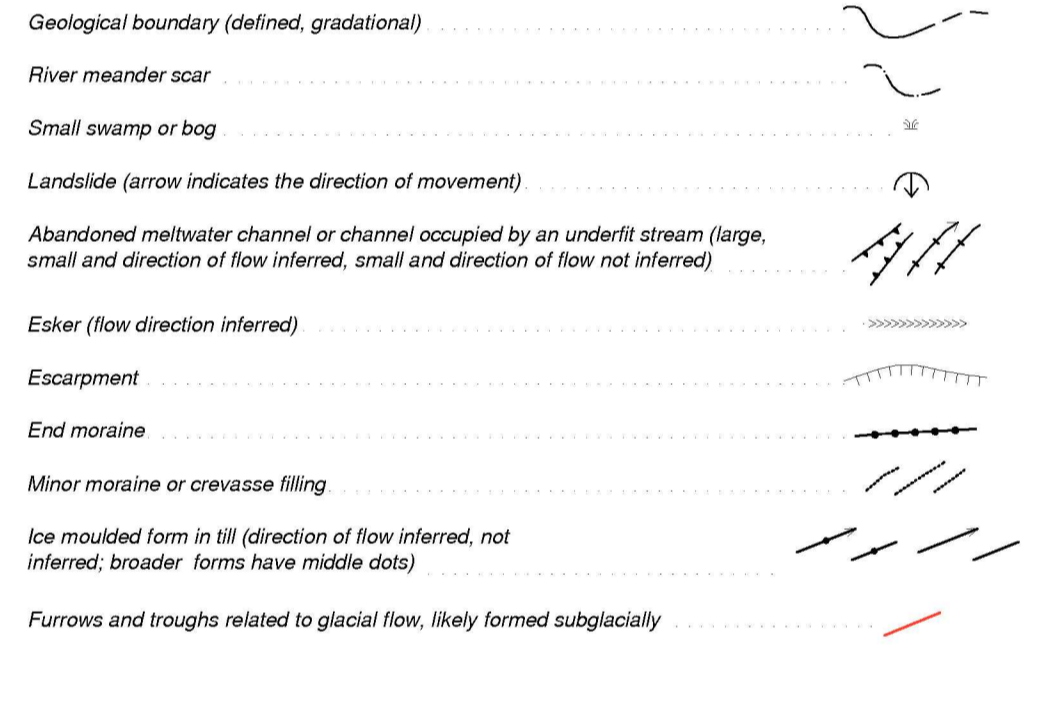


- Coloured legend blocks indicate map units that appear on this map
- QUATERNARY**
- SURFICIAL DEPOSITS**
- POST LAST GLACIATION**
- NONGLACIAL ENVIRONMENTS**
- ORGANIC DEPOSITS:** peat; 1 to 2 m thick; formed by the accumulation of vegetation in poorly drained depressions (swamps and bogs); produces flat, wet terrain; generally overlying glaciolacustrine deposits or till
- O<sup>1</sup>** Bog peat: Sphagnum or forest peat formed in an ombrotrophic environment, may be forest or treeless with a cover of ericaceous shrubs; hummocky, wet terrain, in places underlain by ground ice. O<sup>1</sup>h: undifferentiated bog and fen deposits. O: undifferentiated hummocky bog and fen deposits. O<sup>h</sup>
  - O<sup>2</sup>** Fen peat: peat derived from sedges and partially decayed shrubs in a eutrophic environment; forms relatively open peatlands with a mineral rich water table that persists seasonally near the surface, often covered with low shrubs and sometimes a sparse tree cover
- COLLUVIAL DEPOSITS:** mass wasting debris <1-100 m thick; nonsorted to poorly sorted, massive to stratified debris deposited by direct, gravity-induced movement
- C** Landslide and slump debris: active and inactive landslides
- ALLUVIAL DEPOSITS:** sorted gravel, sand, and organic detritus deposited by flowing water
- A** Fluvial deposits: sorted gravel and sand >1 m thick; forming active flood plains with meander channels and scroll marks. Ap: alluvial fan deposits, poorly sorted gravel and sand >1 m thick. At: undifferentiated. A
  - Ac** Fluvial channels: numerous subparallel alluvial channels covering gentle to moderate slopes
  - At** Fluvial terraces: low, inactive terraces immediately adjacent and higher than active floodplains
  - L<sup>1</sup>** LACUSTRINE DEPOSITS: sand, silt and minor clay deposited in a former lake; generally overlain by organic deposits; exposed by recent fluctuations in lake levels; usually <1 m thick
- POSTGLACIAL OR LATE WISCONSINAN**
- PROGLACIAL AND GLACIAL ENVIRONMENTS**
- L** GLACIOLACUSTRINE DEPOSITS: fine sand, silt, and clay, deposited in glacier-dammed lakes in valleys or along margins of the retreating Laurentide Ice Sheet; >1 m thick; level topography; usually overlain by organic deposits in lowlands; hummocky topography, Lh
  - G** GLACIOFLUVIAL DEPOSITS: proglacial outwash, gravel and sand with minor diamictites deposited in front of the ice margin, usually 1-10 m thick; forming distal outwash terraces Gt: ice-contact ridges, Gr: undifferentiated, G
- TILL:** nonsorted debris deposited directly by glaciers; matrix is sandy to clayey and contains striated clasts of various lithologies, including many Canadian Shield erratics
- Tb** Till blanket: >1 m thick; forming undulating topography; contains Canadian Shield erratics; kettled topography. Tbk: extensively fluted and drumlined till blanket, Td: hummocky moraine, Th: rolling topography, Tm
  - Tr** Ridged moraine: >1 m thick; moraines or crevasse fillings forming a ridged topography
- NOTE:** In areas where the surficial cover forms a complex pattern, the area is coloured according to the dominant unit and labelled in descending order of cover; slash between two units indicates that the former unit overlies the latter
- Geological boundary (defined, gradational) .....  
River meander scar .....  
Small swamp or bog .....  
Landslide (arrow indicates the direction of movement) .....  
Abandoned meltwater channel or channel occupied by an underfit stream (large, small and direction of flow inferred, small and direction of flow not inferred) .....  
Esker (flow direction inferred) .....  
Escarpment .....  
End moraine .....  
Minor moraine or crevasse filling .....  
Ice moulded form in till (direction of flow inferred, not inferred, broader forms have middle dots) .....  
Furrows and troughs related to glacial flow, likely formed subglacially .....
- NOTES ON GLACIAL HISTORY:**
- During the Late Wisconsinan glaciation (ca. 25 000-10 000 years ago), the Arrowhead Lake map area was glaciated from the northeast by the continental Laurentide Ice Sheet. Many ice-moulded landforms indicate a strong glacial flow to the southwest. In particular, a broad ridge of thick till, cutting north-south across the area, is characterized by numerous lakes and ice-moulded landforms. The ridge may have been formed either by subglacial thrusting when the ice sheet was forced to flow uphill out of the Lard River valley, or it may be recessional moraine that has been overridden by a readvance. If the ridge is an end moraine, then it would have been deposited about 12 ka <sup>14</sup>C BP (Dyke and Prest, 1987). During deglaciation, the regional drainage through the Lard River system to the Mackenzie River was blocked by the ice sheet as it retreated northeastward. This caused glacial Lake Lard to flood the Lard River valley, as well as several other short-lived glacial lakes in broad depressions. Most broad depressions in the area are now covered by extensive organic terrain and underlain by discontinuous permafrost. Peat palsas, plateaus and thermokarst features are common in these areas.



**NOTES ON GLACIAL HISTORY:**

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**REFERENCE**

Dyke, A.S. and Prest, V.K. 1987. Late Wisconsinan and Holocene Retreat of the Laurentide Ice Sheet; Geological Survey of Canada, Map 1702-A, scale 1:5 000 000

**OPEN FILE DOSSIER PUBLIC 1775**

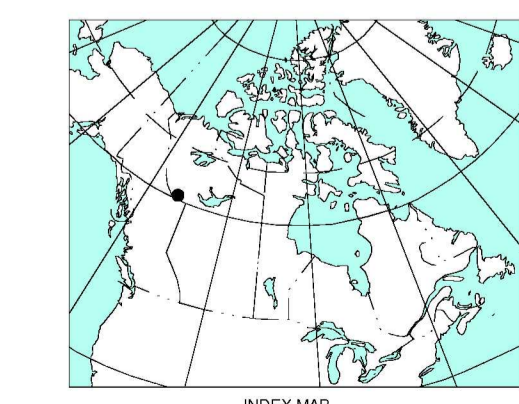
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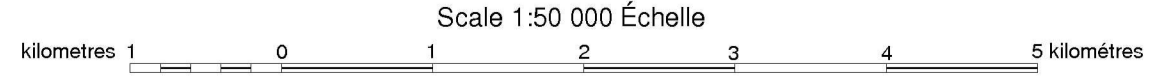
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CONTOUR INTERVAL 100 FEET  
Elevations in Feet above Mean Sea Level

Digital Topographic Data provided by Geomatics Canada, Natural Resources Canada and adjusted to conform to Landair Geoserver image standard by the author

OPEN FILE 1775  
SURFICIAL GEOLOGY  
**ARROWHEAD LAKE**  
NORTHWEST TERRITORIES



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Geology by J. Bednarski, 2000, 2001, 2002  
Geological compilation and digital cartography by J. Bednarski, 2002

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

95 G/2 Dehjdja Island	95 G/1 No Title	95 H/4 No Title
95 B/15 Emile Lake	95 B/16 Arrowhead Lake GSC OF 1775	95 A/13 Cormack Lake
95 B/10 Arrowhead River	95 B/9 Pointe-de-fleche River GSC OF 1773	95 A/12 No Title

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