



- PALEOPROTEROZOIC**
- PEca** **Cataclastic:** highly fractured, recrystallized gneiss with randomized fabric (little or no planar fabric and no shear fabric); weathers rust colour; minor breccia, mylonite
  - PEgm** **Amphibolite to Greenschist grade mylonite:** well foliated, layered, light coloured, mylonite to protomylonite with abundant sigma-type porphyroclasts. Protholites include leucogranite, Eastern Slave granite and Charles Lake granite in CLSZ, Western Slave granite and Arch Lake granite in LLSZ, and Taltson basement gneiss and high-grade mylonite in both shear zones (see Note 3)
  - PEgr** **Leucogranite:** weakly to non-foliated white to light grey to pink, muscovite-bearing pegmatitic coarse-grained granite, rare biotite
  - PEsl** **Charles Lake granite:** massive to foliated megacrystic granite with 15-30 percent K-feldspar megacrysts in a medium-grained biotite-rich matrix. Megacrysts have distinctive biotite inclusions. Local fine-grained porphyry with 2-3% disseminated fine-grained pyrite (unit is Granite F of Godfrey and Langenberg (1986))
  - PEsw** **Western Slave granite:** massive to weakly, locally moderately, foliated, medium- to coarse-grained quartz monzonite, monzogranite, and granite; colour varies from white to pink; small clots of garnet, biotite, hercynite, and cordierite. Locally abundant rafts of granitic gneiss, and pelitic and quartzitic paragneiss. Dikes on margin of main pluton intrude Arch Lake granite and high-grade mylonite of LLSZ
  - PEsv** **Eastern Slave granite:** massive to weakly foliated, locally cataclastic, medium- to coarse-grained granite with equant 1-4cm K-feldspar crystals in an equigranular matrix of quartz, feldspar, biotite, and locally abundant garnet in association with paragneiss xenoliths. Local abundance of xenoliths of paragneiss, banded basement gneiss, and high-grade mylonite (CLSZ?)
  - PEtm** **High-grade mylonite:** well banded, quartz-feldspathic mylonite, protomylonite, and ultramylonite with sparsely preserved sub-horizontal quartz stretching lineations; amphibolite-pull-aparts; ductile leucoparagmites indicative of amphibolite to granulite facies during shearing. Protholites include Taltson basement gneiss and Arch Lake granite. Variable greenschist and sub-greenschist overprint
  - PEtl** **Arch Lake granite:** massive, weakly foliated to well-foliated, mylonitic granite to granulite gneiss with 30 to 50 percent lenticular 1x3cm K-feldspar crystals in a fine- to medium-grained matrix of biotite, quartz, feldspar, and rare garnet. Locally forms L-S facies with rods of blue quartz in association with high-grade mylonite in CLSZ and LLSZ (see Note 3). Preliminary U-Pb age is ca. 1930 Ma (Note 1)
  - PEtm** **Metasedimentary rocks:** infers of quartzite, semipelite gneiss, and pelitic gneiss; common mineral assemblages in pelitic gneiss include biotite-garnet-sillimanite + cordierite in the Leland Lakes area, with biotite-garnet-sillimanite common in areas to the east; locally pervasive pegmatite veins and dikes
- ARCHEAN? or PALEOPROTEROZOIC**
- PEba** **Taltson basement complex:** well foliated, banded mylonitic biotite-hornblende granite to granulite gneiss, hornblende diorite gneiss, locally well layered, locally diamond-bedded and plagioclastically folded, highly sheared pervasively striated by medium-grained pink granite dykes, sills, and small intrusions similar to western Slave granite suite, which form up to 50 percent of outcrop; minor foliated amphibolite

**MAP SYMBOLS**

Geological contact (defined, approximate, assumed) .....

Fault, displacement unknown (approximate) .....

Antiform, trace of axial surface (approximate) .....

Synform, trace of axial surface (approximate) .....

Foliation, high-grade mylonite (inclined, vertical) .....

Foliation, greenschist mylonite (inclined, vertical) .....

First Foliation (inclined, vertical) .....

Second Foliation (inclined, vertical) .....

Lineation, high-grade stretching (inclined) .....

Lineation, greenschist stretching (inclined) .....

Lineation, mineral (inclined) .....

Mesoscopic fold axis, vergence indicated by tick (inclined) .....

Mesoscopic W-fold axis (inclined) .....

Mesoscopic U-fold axis (inclined) .....

Mesoscopic sheath-fold axis (inclined) .....

Axial plane of mesoscopic fold (inclined, vertical) .....

Veins: quartz (inclined, vertical) .....

pegmatite (inclined, vertical) .....

epidote (inclined, vertical) .....

granite (inclined, vertical) .....

Shear bands: ductile, dextral (inclined, vertical) .....

ductile, sinistral (inclined, vertical) .....

brittle, dextral (inclined, vertical) .....

brittle, sinistral (inclined, vertical) .....

Joint (inclined, vertical) .....

K-Ar (K) or Ar-Ar (A) date (Ma; h, hornblende; b, biotite) .....

Brecciation .....

Mineral occurrence (py, pyrite; mo, molybdenite; mt, magnetite) .....

Gossan .....

- SOURCES OF MAP INFORMATION:**
- McDonough, M.R., Grover, T.W., McNicoll, V.J., and Lindsay, D.D. 1993. Geol. Surv. Canada, Paper 93-1C, p.221-232; and unpublished mapping, 1993.
  - Godfrey, J.G. and Langenberg, C.W., 1986, Alta Res. Coun., Report 1986-4.

Scanning of topography and hydrology by: On-Site Scanning Ltd., Calgary

Digital editing by M.R. McDonough and R.E. McCallum, ISPG, Calgary

Recommended citation: McDonough, M.R., Grover, T.W., McNicoll, V.J., Lindsay, D.D., Kelly, K.L., and Guerstner, P.G. 1994. Revised Geology, Mercredi Lake, Alberta - NWT, (74M/15) Geological Survey of Canada, Open File 2904, scale 1:50 000.

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75Q3 GSC O.F. 859	75Q2 GSC O.F. 859	75D1 GSC O.F. 859
Tulip Lake 74M/14 GSC O.F. 2820 ARC 1984-33,34	Mercredi Lake 74M/15 GSC O.F. 2904 ARC 1984-33,34	Andrew Lake 74M/16 GSC O.F. 2905 ARC 58-3A, 61-2A,65-6A,8C
Hay Camp 74M/11 GSC O.F. 2832 ARC 1984-28,29	Cornwall Lake 74M/10 GSC O.F. 2896 ARC 1984-30,31	Colin Lake 74M/9 GSC O.F. 3407 ARC 3,4,7,8

REVISED GEOLOGY  
**MERCREDI LAKE (74M/15)**  
ALBERTA - NORTHWEST TERRITORIES  
Scale 1:50 000 Echelle  
Kilometres 1 2 3 Kilometres  
Transverse Mercator Projection  
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