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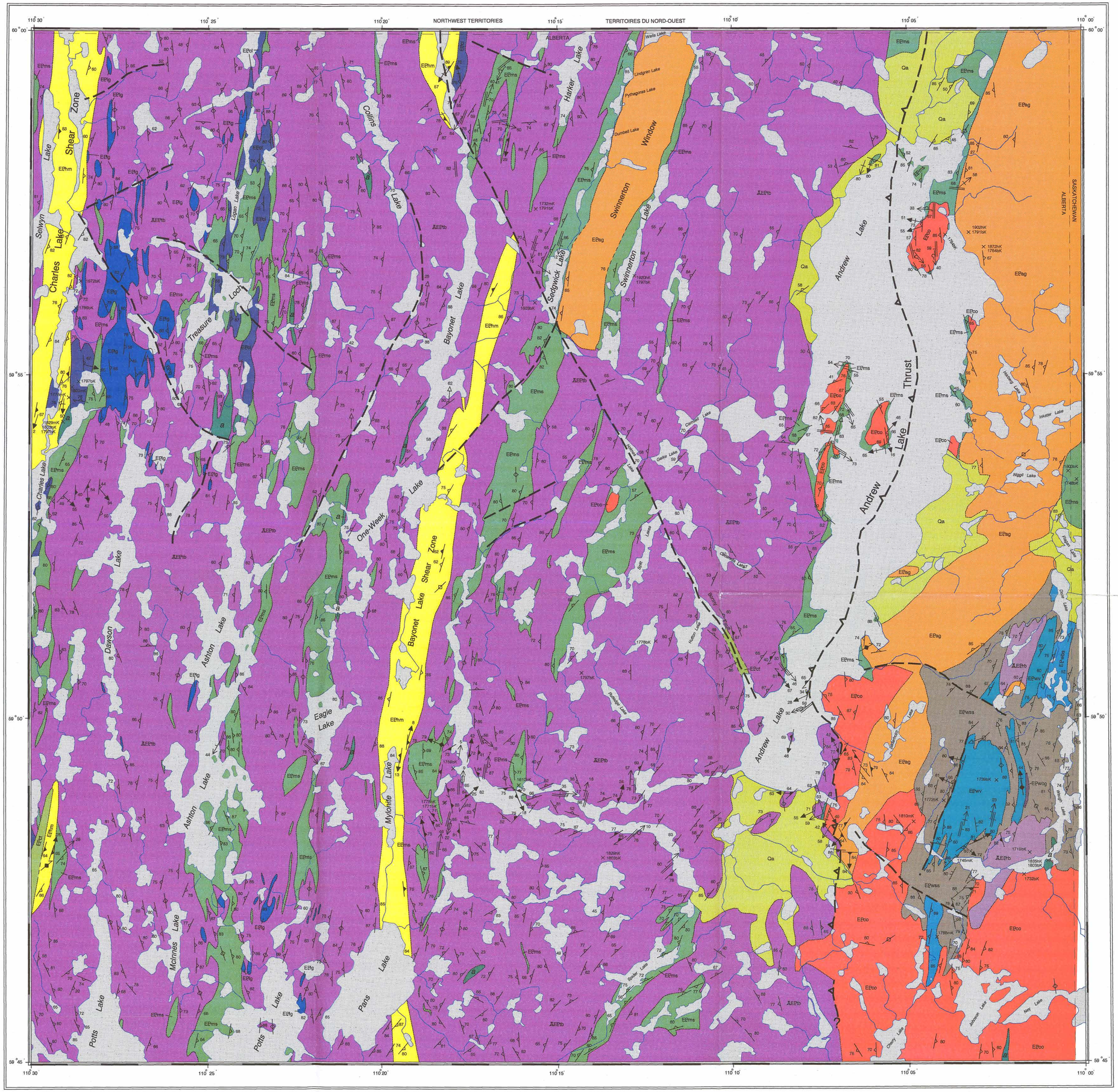
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



QUATERNARY

Qa — *Alluvium, colluvium*

EARLY PROTEROZOIC

EEct — *Cataclasite: highly fractured, disorganized, recrystallized gneiss with little or no planar fabric and no linear fabric; weathers rust colour; minor breccia, mylonite*

EEpg — *Leucogranite: weakly to non-foliated white to light grey to pink, muscovite-bearing pegmatitic coarse-grained granite, rare biotite*

EEpco — *Colin Lake granite: massive to weakly foliated, locally cataclasized, medium- coarse-grained granite to pegmatitic granite with equant 1-4cm K-feldspar crystals in a matrix of quartz, feldspar, muscovite, minor garnet, and rare tourmaline. Truncates L-S tectonites in the Andrew Lake shear zone; intrudes Waugh Lake Group.*

WAUGH LAKE GROUP

EEpwbs — *Waugh Lake Biotite Schist: foliated biotite-rich schist, phyllite, phyllonite, minor quartzite; local abundant quartz veins; minor pegmatite*

EEpwv — *Waugh Lake Volcanic Rocks: foliated, medium- coarse-grained chlorite- biotite-rich mafic schistose gneiss deformed at greenschist to sub-greenschist grade*

EEpwcg — *Waugh Lake Conglomerate: foliated, medium- coarse-grained muscovitic feldspathic pebble to granule conglomerate; metagraywacke*

EEpwss — *Waugh Lake Paragneiss: foliated, medium- coarse-grained sericitic gniess, schistose gneiss; minor conglomerate, chlorite-rich schistose gneiss, quartzite*

EEpcc — *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).*

EEhm — *High-grade mylonite: well banded, quartzo-feldspathic mylonite, protomylonite, and ultramylonite with sparsely preserved sub-horizontal quartz stretching lineations; amphibolite pull-aparts; ductile feldspars indicative of amphibolite to granulite facies during shearing. Protoliths include Taltson basement gneiss, Andrew Lake granite and metasedimentary rocks. Variable greenschist and sub-greenschist overprint*

EEpag — *Andrew Lake granodiorite: massive, well foliated biotite-hornblende granodiorite to diorite orthogneiss with 30 to 40 percent equant 5-10 mm K-feldspar phenocrysts in a medium- to coarse-grained matrix of biotite, hornblende, quartz, and feldspar. Locally cut by pink Slave? granite dykes. Deformed into high grade mylonite in Andrew Lake shear zone*

EEms — *Metasedimentary rocks: large inliers of quartzite, semipelitic gneiss, and pelitic gneiss; common mineral assemblages are pelitic gneiss is biotite+garnet+sillimanite +cordierite in the Leland Lakes area, with biotite+garnet+sillimanite common in areas to the east; locally pervasive pegmatite veins and dykes*

ARCHEAN? or EARLY PROTEROZOIC

ΣEErb — *Rae Province? basement gneiss: annealed granitic to granodioritic mylonite, well foliated to layered, minor K-feldspar phenocrysts; minor aplite; possibly in part mylonitic Andrew Lake granodiorite. Unconformably overlain by Waugh Lake Group*

ΣEEtb — *Taltson basement complex: well foliated, banded mylonitic biotite-hornblende granite to granodiorite gneiss, hornblende diorite gneiss, locally well layered, locally dismembered and ptygmatically folded, highly sheared; pervasively intruded by medium-grained pink granite dykes, sills, and small intrusions similar to western Slave granite suite, which form up to 50 percent of outcrop; a, amphibolite*

a — *amphibolite*

MAP SYMBOLS

- *Geological contact (defined, approximate, assumed)*
- *Fault, displacement unknown (approximate (assumed under water))*
- *Thrust fault, dextral oblique (approximate (assumed under water))*
- *Antiform, trace of axial surface (approximate)*
- *Bedding, tops unknown (inclined, vertical)* — 18
- *Foliation, high-grade mylonite (inclined, vertical)* — 76
- *Foliation, greenschist mylonite (inclined, vertical)* — 82
- *First foliation (inclined, vertical)* — 83
- *Second Foliation (inclined, vertical)* — 13
- *Lineation, high-grade stretching (inclined)* — 47
- *Lineation, greenschist stretching (inclined)* — 28
- *Mesoscopic fold axis, vergence indicated by tick (inclined)* — 32
- *Mesoscopic W-fold axis (inclined)* — 38
- *Mesoscopic U-fold axis (inclined)* — 15
- *Mesoscopic sheath-fold axis (inclined)*
- *Axial plane of mesoscopic fold (inclined, vertical)* — 80
- *Veins: quartz (inclined, vertical)* — 85
- *pegmatite (inclined, vertical)* — 78
- *epidote (inclined, vertical)* — 67
- *granite (inclined, vertical)* — 72
- *Shear bands: ductile, dextral (inclined, vertical)* — 85
- *ductile, sinistral (inclined, vertical)* — 78
- *brittle, dextral (inclined, vertical)* — 83
- *brittle, sinistral (inclined, vertical)* — 67
- *Joint (inclined, vertical)* — 77
- *K-Ar date (Ma; h, hornblende; b, biotite; m, muscovite)* — x 1835 hK

NOTES:

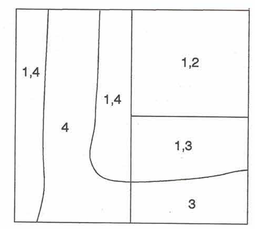
1) Ages of granitoid units are not precisely known. Relative ages of Charles Lake granite and Andrew Lake granodiorite are not known. U-Pb and Ar-Ar dating in progress.

2) High grade shear zones were deformed at upper amphibolite to granulite facies, and were overprinted by greenschist grade mylonitization, and local subgreenschist facies cataclasis (McDonough et al. 1993 (reference #1)).

3) Andrew Lake thrust is an upper amphibolite to granulite facies shear zone with downdip stretching lineations indicating that Taltson basement gneisses were thrust to the east-north-east in a dextral oblique sense over Andrew Lake granodiorite (ref. #1).

4) K-Ar data recalculated by H. Plint from Baadsgaard and Godfrey (1967, 1971: CJES).

SOURCES OF INFORMATION:



1. McDonough, M.R., Grover, T.W., McNicoll, V.J., and Lindsay, D.D. 1993. Geol. Surv. Canada, Paper 93-1C, p.221-232.
3. Godfrey, J.G., 1961, Alta Res. Coun., Preliminary Report 58-3.
3. Godfrey, J.G., 1963, Alta Res. Coun., Preliminary Report 61-2.
4. Godfrey, J.G., 1966, Alta Res. Coun., Preliminary Report 65-6.

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Publications Office
Geological Survey of Canada
3303 - 33rd Street NW
Calgary, Alberta T2L 2A7
Phone: 403/292-7030

Canada

75D/2 O.F. 859	75D/1 O.F. 859	75C/4
Mercredi Lake 74M/15 O.F. 2629 ARC 1984-35,36	Andrew Lake 74M/16 O.F. 2664 ARC 58-3A, 61-2A,66-6A,8C	Thainka Lake 74N/13 SRC 61A, 71A
Cornwall Lake 74M/10 ARC 1984-30,31	Colin Lake 74M/9 ARC 3,4,7,8	Harper Lake 74N/12 SRC 81A, 111A

GEOLOGY

ANDREW LAKE

ALBERTA - SASKATCHEWAN - NORTHWEST TERRITORIES

Scale 1:50 000 Echelle

Kilometres 1 0 1 2 3 Kilomètres

Transverse Mercator Projection

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