COMMISSION GÉOLOGIQUE DU CANADA
MINISTÈRE DE L'ÉNERGIE DES MINES ET DES RESSOURCES

Index of Geologic Source Maps

Scale of Source Maps

- 1:1,000,000
- 1:500,000
- 1:250,000
- ≤1:100,000

QUATERNARY

Glacial drift cover

SUPRACRUSTAL/METAMORPHIC ROCKS

ORDOVICIAN AND SILURIAN

Ps — Fossiliferous limestone, dolomite, sandstone, shale

HELIKIAN

DUBAWNT GROUP (Ht-Ax)

Ht — THELON FORMATION: sandstone, pebbly sandstone, conglomerate

APHEBIAN

Ap — PITZ FORMATION: acid lavas, welded tuffs; minor red sandstone and conglomerate

Ac — CHRISTOPHER ISLAND FORMATION, MARTELL SYENITE AND KUNWAK FORMATION: alkaline flows, subvolcanic plugs and sills, volcaniclastic sedimentary arkose, pebbly arkose and conglomerate

Ax — SOUTH CHANNEL AND KAZAN FORMATIONS: polymictic conglomerate, pebbly arkose, arkose; minor siltstone and mudstone

Af — FOLSTER LAKE FORMATION: weakly metamorphosed arkose; minor conglomerate, marble, phyllite and schist

AMER GROUP

Aas — Arkose, feldspathic sandstone, siltstone and mudstone

Aaq — Orthoquartzite, dolomitic limestone, siltstone, mudstone-slate-phyllite; minor mafic volcanics and gabbro

As — PENRHYN GROUP: quartzite, amphibolite, marble, calc-silicate gneiss, psammitic and pelitic gneiss, graphite and biotite schist

ARCHEAN/APHEBIAN (unassigned)

Agn — Granitic gneiss and gneissic granitoid rocks; includes granite, granodiorite and quartz diorite

Agns — Sherman Inlet gneisses*

An — Mixed gneiss; amphibolite gneiss, hornblende-biotite gneiss, granitoid gneiss and migmatites in part derived from sedimentary and volcanic rocks; minor mylonite, calc-silicate gneiss and anorthosite

Ans — Sherman Inlet gneisses*

Ang — Granulite grade; hypersthene paragneiss, spinel-sillimanite-garnet-cordierite gneiss, hypersthene granitoid gneiss

Ah — Plagioclase-hornblende and/or -biotite schist and gneiss, amphibolite, calc-silicate gneiss, garnetiferous schist and gneiss; minor mixed gneiss and granite

Ahs — Sherman Inlet gneisses*

Angf — Layered quartzofeldspathic gneiss; biotite-hornblende gneiss, minor garnetiferous gneiss and amphibolite

Ac — CHANTREY GROUP: impure quartzite, marble, metasiltstone-mudstone, orthoquartzite, pelitic schist and metaconglomerate

UNCORRELATED SUPRACRUSTAL ROCKS

Asv — Unsubdivided supracrustal rocks: greenstone, hornblende schist, amphibolite, biotite schist and paragneiss; minor micaceous quartzite, iron formation and calc-silicate rocks

Aq — Quartzite; minor mica schist

As — Metasedimentary rocks: paragneiss, mica schist, marble, calc-silicate gneiss and quartzite

Av — Hornblende schist and amphibolites probably derived from basic to intermediate volcanic rocks

ARCHEAN

Agn — Granitic gneiss, K-feldspar augen granitic gneiss and gneissic granitoid rocks; mainly granite and granodiorite, hornblende- and/or biotite-bearing, mylonitic in part

An — Mixed gneiss; layered tonalite and granodiorite gneiss, hornblende-biotite gneiss and migmatite, minor biotite- and garnet-biotite paragneiss and amphibolite

Ang — Granulite grade; pyroxene granulite**

Ans — Gneiss complexes; basement to Archean supracrustal rocks; includes Aljaqutaliq Complex and Brown River Gneiss Complex

Ash — Layered gneiss, garnet-quartz-feldspar gneiss, sillimanite gneiss and schists in part at granulite grade**

PRINCE ALBERT GROUP

APm — Metasedimentary and metavolcanic rocks; conglomerate, iron formation, pelitic schist, biotite schists; phyllite, chlorite schist, amphibolite and metarhyolite; minor metagabbro

APu — Metakomatiite

APq — Quartzite

UNCORRELATED SUPRACRUSTAL ROCKS (includes WOODBURN and KEITYET RIVER GROUPS)

Asv — Unsubdivided supracrustal rocks; includes impure quartzite, chlorite schist, mica schist, paragneiss, metavolcanic rocks, amphibolite and iron formation

Aq — Quartzite, minor muscovite schist and conglomerate

Av — Mafic to felsic metavolcanic rocks; includes flows, breccias, tuffs and volcaniclastic rocks; minor metagabbro sills and dykes

Au — Metakomatiite, serpentinite

As — Greywacke, slate, chlorite and mica schist; minor conglomerate, carbonate and iron formation

MASSIVE AND FOLIATED INTRUSIVE ROCKS

APHEBIAN

Ay — Syenite and mafic syenites; minor pyroxenite, pyroxene monzonite and quartz syenite

Ag — Biotite and biotite-hornblende granite and granodiorites; equigranular to porphyritic, massive to weakly foliated, locally fluorite- and/or sphene-bearing

Ad — Diorite, gabbro; minor ultramafic rocks

ARCHEAN/APHEBIAN (unassigned)

Ag — Granite, granodiorite, quartz diorite, minor syenite, monzonite and syenodiorites; massive to foliated

Ab — Diorite, gabbro; minor anorthositic gabbro, anorthosite, pyroxenite and peridotite

ARCHEAN

Ag — Granite, granodiorite and quartz diorite; massive to well foliated

Ab — Diorite, gabbro; minor ultramafic rocks; locally deformed and metamorphosed

Aa — Anorthosite, gabbroic anorthosite and layered gabbro, locally metamorphosed to amphibolite or granulite grade**

* Western parts of the Queen Maud Block (Heywood and Schau, 1978) contain high grade gneisses informally named the Sherman Inlet gneisses during Operation Back River (Heywood, 1961). These gneisses form part of a predominantly granulite terrane and the subscript S distinguishes them from compositionally similar units in lower grade terranes.

** These units include the Daly Bay Complex (Heywood, 1966) and the Kramanituar Complex (Schau et al., 1982).

NOTE: Relative ages of gneissic rocks are for the most part uncertain and no stratigraphic order is implied by the arrangement of units in the legend. Relative ages of the Aphebian Folster Lake Formation, Amer Group and Penrhyn Group are unknown.

- Geological boundary (defined/approximate, assumed, gradational)
- Interpreted boundary (aeromagnetic/topographic data)
- Boundary between unassigned/unsubdivided units and assigned/subdivided units
- Fault (defined, approximate, inferred from geophysical data)
- Shear zones: mylonite, porphyroclastic gneiss, protomylonite gneiss; gradational into adjacent rock units where no boundaries are defined
- Thrust fault (defined, approximate)
- Bedding, tops known (inclined, overturned), tops unknown
- Foliation (inclined, vertical, dip unknown)
- Axial trace of antiform/anticline, synform/syncline; arrow indicates direction of plunge)
- Axial trace of overturned antiform/anticline, synform/syncline

COMPILATION AND MARGINAL LEGEND BY

Judith G. Patterson and A.N. LeCheminant

February, 1983

This open file consists of a 1:1 000 000 scale preliminary geological map of NTS areas 46, 56 and parts of 47, 57 and 66. Accompanying the map are a marginal legend and an index of source maps. A bibliography of publications on bedrock geology and mineral deposits is appended.

Subject to revision. Corrections or additional geological information would be welcomed and acknowledged by the authors.

Users interested in detailed aspects of the geology are urged to consult the source maps and references listed in the accompanying bibliography.

The "Metamorphic Map of the Canadian Shield" (Map 1475A) was consulted to define granulite terrains, to assess the age of granitic plutons and to determine the location of some faults. Petrographic data for areas covered by regional reconnaissance mapping can be requested from A.N. LeCheminant.

Dykes have been omitted from this compilation. A map of regional diabase dyke swarms has been prepared by W.F. Fahrig and will be published at a scale of 1:2 000 000. Metadiabase dykes of local extent are known from Melville Peninsula (Henderson, 1983; Schau and Heywood, 1984) and the Baker Lake area (Schau, 1983). Data on lamprophyre and syenite dyke swarms in 56D, 66A and 66B can be obtained from Mikkel Schau or A.N. LeCheminant.

Aeromagnetic, gravity and radiometric data were considered during the preparation of this map. Compilation maps of this geophysical data at 1:1 000 000 are available for much of the region:

Magnetic Anomaly Maps:
Quoich River, Map NQ 15-16-17-M, 64°-68°N; 85°-96°W
Thelon River, Map NQ 12-13-14-M, 64°-68°N; 96°-112°W

Manuscript Maps for Gravity Map of Canada 1980:
Quoich River, Map 64080, 64°-68°N; 85°-96°W
Murchison River, Map 68080, 68°-72°N; 85°-96°W
Thelon River, Map 64096, 64°-68°N; 96°-112°W

Gamma Ray Spectrometry Maps:
Quoich River, Map NQ 15-16-17, 64°-68°N; 85° - 96°W, Geological Survey of Canada Open File 1033
Murchison River, Map NR 15-16-17, 68°-72°N; 85°-96°W, Geological Survey of Canada Open File 1030
Thelon River, Map NQ 12-13-14, 64°-68°N; 96°-112°W, Geological Survey of Canada Open File 1032

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OPEN FILE
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GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
1985

A PRELIMINARY GEOLOGICAL COMPILATION MAP OF THE NORTHEASTERN BARREN GROUNDS, PARTS OF THE DISTRICTS OF KEEWATIN AND FRANKLIN

(NTS 46, 56 and parts of 47, 57 and 66)

Scale 1:1 000 000

Kilometres 25 0 25 50 75 Kilometres

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