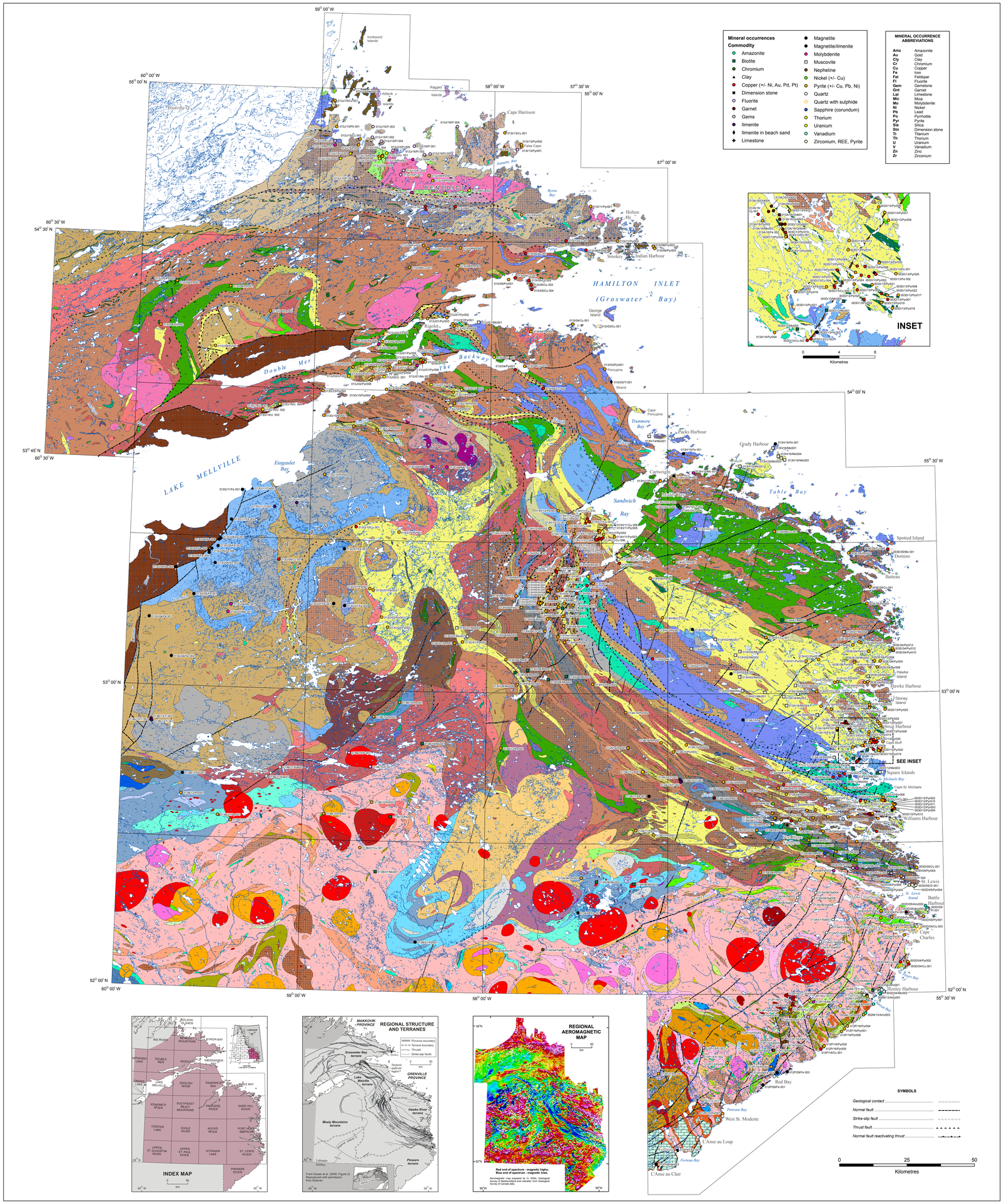
MAP 2010-51

OPEN FILE LAB/1571

MINERAL OCCURRENCES IN EASTERN LABRADOR

Note: Occurrence symbol colour follows the author's commodity groupings, and may not concur with the historic label to be found in the Mineral Occurrence Data System of the Geological Survey of Newfoundland and Labrador.



Mineral occurrences

Commodity

- Amazonite
- Biotite
- Chromium
- Clay
- Copper (+/- Ni, Au, Pd, Pt)
- Dimension stone
- Fluorite
- Garnet
- Gems
- Ilmenite
- Ilmenite in beach sand
- Limestone
- Magnetite
- Magnetite/Ilmenite
- Molybdenite
- Muscovite
- Nepheline
- Nickel (+/- Cu)
- Pyrite (+/- Cu, Pb, Ni)
- Quartz
- Quartz with sulphide
- Sapphire (corundum)
- Thorium
- Uranium
- Vanadium
- Zirconium, REE, Pyrite

MINERAL OCCURRENCE ABBREVIATIONS

Amz	Amazonite
Au	Gold
Cly	Clay
Cr	Chromium
Cu	Copper
Fe	Iron
Fel	Feldspar
Fl	Fluorite
Gem	Gemstone
Grt	Garnet
Lst	Limestone
Mic	Mica
Mo	Molybdenite
Ni	Nickel
Pb	Lead
Py	Pyrrhotite
Pyr	Pyrite
Sil	Silica
Stn	Dimension stone
Ti	Titanium
Th	Thorium
U	Uranium
V	Vanadium
Zn	Zinc
Zr	Zirconium

LEGEND FOR GRENVILLE PROVINCE, EASTERN LABRADOR

DEVONIAN (?)

Dd — Sandwich Bay and Battle Harbour dykes

EARLY CAMBRIAN

Fo — Forteau Formation

CdFm — Bradore Formation (subdivided into L'Anse-au-Clair, Crow Head and Blanc-Sablon members)

NEOPROTEROZOIC – EARLY CAMBRIAN

LCv — Lighthouse Cove Formation

NCBa — Bateau Formation

NEOPROTEROZOIC

NDmN | NGrN | NSbN

NDm — Double Mer Formation

NGr — Gilbert arkose

NSb — Sandwich Bay conglomerate

Nc | Nd | Nq

Nc — Clastic dykes

Nd — Long Range dykes

Nq — Quartz veins

LATE MESOPROTEROZOIC (M_2 1200 – 900 Ma)

LATE POST-GRENVILLIAN INTRUSIONS (M_{2D} ca. 975 – 955 Ma)
e.g., Chateau Pond granite

M_{2D}gD | M_{2D}gr | M_{2D}ln | M_{2D}mn | M_{2D}mq | M_{2D}mz | M_{2D}vq | M_{2D}d

M_{2D}gD — Massive to weakly foliated megacrystic/porphyritic granite to quartz monzonite

M_{2D}gr — Massive to weakly foliated granite to alkali-feldspar granite

M_{2D}ln — Massive to weakly foliated leucogabbro to leuconorite

M_{2D}mn — Massive to weakly foliated monzogabbro and monzonorite

M_{2D}mq — Massive to weakly foliated quartz monzonite; mantled feldspar textures

M_{2D}mz — Massive to weakly foliated monzonite to monzodiorite

M_{2D}vq — Massive to weakly foliated syenite, quartz syenite and alkali-feldspar quartz syenite

M_{2D}d — Unnamed mafic dykes

EARLY POST-GRENVILLIAN INTRUSIONS (M_{2C} ca. 985 – 975 Ma)
e.g., Beaver Brook and Picton Pond plutons

M_{2C}gr | M_{2C}ln | M_{2C}mn | M_{2C}mq | M_{2C}vq | M_{2C}d

M_{2C}gr — Weakly to moderately foliated granite to alkali-feldspar granite

M_{2C}ln — Weakly to moderately foliated leucogabbro to leuconorite

M_{2C}mn — Weakly to moderately foliated monzogabbro to monzonorite

M_{2C}mq — Weakly to moderately foliated monzonite to quartz monzonite

M_{2C}rg — Weakly to moderately foliated gabbro, norite and troctolite

M_{2C}vq — Weakly to moderately foliated syenite, quartz syenite and alkali-feldspar syenite

M_{2C}d — L'Anse-au-Diable, York Point, Gilbert Bay mafic dykes

SYN-GRENVILLIAN INTRUSIONS (M_{2B} ca. 1085 – 985 Ma)

M_{2B}gD | M_{2B}gr | M_{2B}rg | M_{2B}ym | M_{2B}d

M_{2B}gD — Moderately to strongly foliated granodiorite to quartz diorite

M_{2B}gD — Moderately to strongly foliated megacrystic/porphyritic granodiorite to quartz diorite

M_{2B}gr — Moderately to strongly foliated granite to alkali-feldspar granite

M_{2B}ym — Moderately to strongly foliated augerine- or nepheline-bearing syenite

M_{2B}d — Unnamed mafic dykes (Makkovik Province and adjacent Grenville Province)

PRE-GRENVILLIAN INTRUSIONS (M_{2A} ca. 1200 – 1085 Ma)
e.g., Gilbert Bay pluton

M_{2A}gr | M_{2A}mn

M_{2A}gr — Weakly to strongly foliated granite

M_{2A}mn — Weakly to strongly foliated monzonite to monzonorite

MIDDLE MESOPROTEROZOIC (M_1 1350 – 1200 Ma)
e.g., Upper North River intrusion

M$_1$gr | M$_1$rg | M$_1$vq | M$_1$d

M$_1$gr — Weakly to strongly foliated granite and alkali-feldspar granite

M$_1$rg — Weakly to strongly foliated gabbronorite (in database only - Lourdes-de-Blanc-Sablon intrusion, Quebec)

M$_1$vq — Weakly to strongly foliated syenite, quartz syenite and alkali-feldspar syenite

M$_1$d — Mealy dykes

EARLY MESOPROTEROZOIC (M, 1600 – 1350 Ma)
e.g., Upper Paradise River and Kyfanan Lake intrusions, and Michael gabbro

M-an | M-am | M-dr | M-gp | M-gr | M-ln | M-mn | M-mq | M-mz | M-rg | M-um | M-yq | M-d

M-an — Massive- or weakly-foliated anorthosite to leucogabbronorite, indistinctly layered in places

M-am — Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants; granulite facies equivalents

M-dr — Massive, weakly or strongly foliated diorite to amphibolite, may be metamorphic derivative of monzodiorite or leucogabbronorite

M-gp — Moderately to strongly foliated megacrystic/porphyritic granitoid rocks

M-gr — Massive, weakly or strongly foliated granite to quartz monzonite

M-ln — Massive, weakly or strongly foliated leucogabbronorite and anorthositic gabbro, locally grading into gabbronorite, locally coronitic

M-mn — Moderately to strongly foliated monzonorite

M-mq — Moderately to strongly foliated monzonite to quartz monzonite

M-mz — Moderately to strongly foliated monzonite to monzodiorite

M-rg — Massive- to strongly foliated gabbro, norite and troctolite. Commonly layered. Subophitic and locally coronitic; includes recrystallized derivatives retaining igneous textures

M-um — Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

M-yq — Moderately to strongly foliated syenite and quartz syenite

M-d — Mafic dykes; includes Michael gabbro

LATE PALEOPROTEROZOIC AND EARLY MESOPROTEROZOIC (PM 1800 – 1350 Ma)
Ages generally unknown, but ca. 1650 Ma and 1500 – 1470 Ma rocks identified
RECRYSTALLIZED IGNEOUS ROCKS

PMdr | PMgd | PMgr | PMln | PMmd | PMmq | PMrg | PMtn | PMyq | PMam

PMdr — Medium grained, equigranular, recrystallized weakly to strongly foliated diorite, quartz diorite and to leucoamphibolite

PMgd — Weakly to strongly foliated granite to granodiorite

PMgp — Megacrystic/porphyritic recrystallized granite to quartz monzonite

PMgr — Medium- to coarse-grained, recrystallized weakly to strongly foliated granite and alkali feldspar granite

PMln — Medium- to coarse-grained, recrystallized leuconorite, leucogabbro

PMmd — Medium- to coarse-grained, recrystallized, weakly to strongly foliated, monzodiorite to monzonite

PMmq — Medium- to coarse-grained, recrystallized, weakly to strongly foliated quartz monzonite

PMrg — Medium- to coarse-grained, gabbro, norite and troctolite

PMtn — Medium- to coarse-grained, recrystallized, weakly to strongly foliated tonalite to granodiorite

PMyq — Medium- to coarse-grained, recrystallized, weakly to strongly foliated syenite, alkali-feldspar syenite and quartz syenite

PMam — Amphibolite; generally thought to be derived from mafic dykes

SUPRACRUSTAL ROCKS PROVISIONALLY ASSIGNED AS PITTS HARBOUR GROUP

PMsc | PMsp | PMss | PMsx | PMvf | PMvm

Sedimentary protolith

PMsc — Calc-silicate rocks, compositionally layered, medium grained

PMsp — Pelitic schist and gneiss

PMsq — Quartzite, meta-arkose, thin to thick bedded

PMss — Quartz-feldspar psammitic schist and gneiss; medium grained

PMsx — Coarse-grained to pegmatitic-granitic material (diatexite), characteristically associated with psammitic gneiss and quartzite

Volcanic protolith

PMvf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally having lensoid shapes, possibly indicating felsic volcaniclastic protolith

PMvm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods. Interpreted as mafic volcanic rocks

AGE GENERALLY POORLY CONSTRAINED

β | δ

β — Brittle deformation; cataclastic rocks, pseudotachylite

δ — Ductile deformation; mylonite, straight gneiss

AGE GENERALLY POORLY CONSTRAINED

f | k | p | q

f — Aplite, microgranite (felsite)

k — Carbonate vein

p — Pegmatite

q — Quartz vein

SYMBOLS

Geological contact

Normal fault

Strike-slip fault

Thrust fault

Normal fault reactivating thrust

NOTES

1. Uncoloured units do not appear as polygons on maps, but are in unit-designator strings in database.
2. Some mafic dykes are also shown as polygons (especially where orientation is unknown).

LATE PALEOPROTEROZOIC (P_2 1800 – 1600 Ma)

LATE LABRADORIAN GRANITOID INTRUSIONS (P_{2C} 1660 – 1600 Ma)
e.g., Paradise Arm intrusion and Hawke Bay intrusive suite

P_{2C}dr | P_{2C}gA | P_{2C}gD | P_{2C}gG | P_{2C}gr | P_{2C}mn | P_{2C}mq | P_{2C}mz | P_{2C}vq | P_{2C}d

P_{2C}dr — Diorite, quartz diorite and tonalite; locally grading into leucogabbronorite

P_{2C}gA — Alkali-feldspar granite, granite and quartz syenite forming discrete plutons

P_{2C}gD — Granite to granodiorite forming discrete unmigmatized plutons

P_{2C}gG — Megacrystic/porphyritic granite to granodiorite

P_{2C}gr — Granite and minor alkali-feldspar granite

P_{2C}mn — Monzonorite and monzogabbro

P_{2C}mq — Quartz monzonite, including rare quartz syenite

P_{2C}mz — Monzonite, including minor syenite

P_{2C}vq — Syenite to quartz syenite forming discrete plutons

P_{2C}d — Unnamed mafic dykes

LATE LABRADORIAN ANORTHOSITIC AND MAFIC INTRUSIONS (P_{2C} 1660 – 1600 Ma)
e.g., White Bear Arm complex and Sand Hill Big Pond intrusion

P_{2C}dg | P_{2C}am | P_{2C}an | P_{2C}rg | P_{2C}ln | P_{2C}lt | P_{2C}um

P_{2C}dg — Weakly to markedly foliated mafic granulite, plus leucocratic and melanocratic variants

P_{2C}am — Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants

P_{2C}an — Massive- to strongly foliated anorthosite and leucogabbronorite

P_{2C}rg — Massive- to strongly foliated gabbro and norite, commonly layered. Subophitic and locally coronitic

P_{2C}ln — Primary textured to recrystallized leucogabbronorite and leucogabbro. Coronitic locally

P_{2C}lt — Primary textured to recrystallized leucotroctolite

P_{2C}um — Massive-, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

EARLY LABRADORIAN GRANITOID AND ASSOCIATED ROCKS (P_{2B} 1710 — 1660 Ma)
e.g., Alexis River anorthosite (assigned here although age is uncertain)

P_{2B}dg | P_{2B}an | P_{2B}ln | P_{2B}mn | P_{2B}rg | P_{2B}um

P_{2B}dg — Weakly foliated to gneissic amphibolite and mafic granulite, plus leucocratic and melanocratic variants

P_{2B}an — Weakly foliated to gneissic anorthosite and leucogabbronorite

P_{2B}ln — Weakly foliated to gneissic leucogabbronorite and leucogabbro. Coronitic locally

P_{2B}mn — Weakly foliated to gneissic monzonorite and monzogabbro

P_{2B}rg — Weakly foliated to gneissic gabbro and norite

P_{2B}um — Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

EARLY LABRADORIAN GRANITOID AND ASSOCIATED ROCKS (ca. 1678 and 1671 Ma)
e.g., Nevaish Island and Red Island events

P_{2A}dr | P_{2A}gD | P_{2A}gG | P_{2A}gr | P_{2A}mq | P_{2A}vq | P_{2A}am

P_{2A}dr — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss; in part derived from leucogabbronorite

P_{2A}gD — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{2A}gG — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{2A}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{2A}mq — Foliated to gneissic quartz monzonite, grading into diorite or syenite, and compositionally equivalent well-banded gneiss

P_{2A}vq — Foliated to gneissic syenite, alkali-feldspar syenite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{2A}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

PRE-LABRADORIAN GRANITOID ROCKS (P_{2A} 1800 – 1710 Ma)

P_{2A}dg | P_{2A}df | P_{2A}gD | P_{2A}gG | P_{2A}gr | P_{2A}ln | P_{2A}am

P_{2A}dg — Mafic granulite skialiths, lenses and layers

P_{2A}df — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss

P_{2A}gD — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{2A}gG — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{2A}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{2A}ln — Foliated to gneissic leucogabbronorite, and compositionally equivalent well-banded gneiss

P_{2A}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

PRE-LABRADORIAN SUPRACRUSTAL ROCKS (P_{2A} 1800 – 1710 Ma)
(Age uncertain; certainly pre-1670 Ma, probably 1800 – 1770 Ma)

P_{2A}sc | P_{2A}sp | P_{2A}ss | P_{2A}sx | P_{2A}vf | P_{2A}vm

Sedimentary protolith

P_{2A}sc — Calc-silicate rocks, compositionally layered, medium grained

P_{2A}sp — Fine- to medium-grained pelitic schist and gneiss

P_{2A}sq — Quartzite, meta-arkose, thin- to thick-bedded

P_{2A}ss — Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

P_{2A}sx — Metasedimentary diatexite; coarse-grained to pegmatitic and characteristically white-weathering

Volcanic protolith

P_{2A}vf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P_{2A}vm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods. Interpreted as mafic volcanic rocks

MID PALEOPROTEROZOIC (P_2 2100 – 1800 Ma)

LATE MID PALEOPROTEROZOIC (P_{2C} 1900 – 1800 Ma)
Granitoid and related intrusive rocks

P_{2C}dr | P_{2C}gA | P_{2C}gD | P_{2C}gG | P_{2C}gr | P_{2C}mq | P_{2C}mz | P_{2C}yq

P_{2C}dr — Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss

P_{2C}gA — Alkali-feldspar granite, granite and quartz syenite

P_{2C}gD — Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P_{2C}gG — Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P_{2C}gr — Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P_{2C}mq — Foliated to gneissic quartz monzonite, grading into diorite or syenite, and compositionally equivalent well-banded gneiss

P_{2C}mz — Foliated to gneissic monzonite to monzodiorite, and compositionally equivalent well-banded gneiss

P_{2C}yq — Foliated to gneissic syenite to alkali-feldspar syenite, and compositionally equivalent well-banded gneiss

P_{2C}yq — Syenite to quartz syenite

Mafic and associated intrusive rocks

P_{2C}am | P_{2C}rg | P_{2C}d

P_{2C}am — Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

P_{2C}rg — Massive- to strongly foliated gabbro and norite, commonly layered. Subophitic and locally coronitic

P_{2C}d — Unnamed mafic dykes

Sedimentary protolith

P_{2C}sc | P_{2C}so | P_{2C}sp | P_{2C}sq | P_{2C}ss

P_{2C}sc — Calc-silicate rocks, compositionally layered, medium grained

P_{2C}so — Conglomerate and agglomerate, partially of volcanic origin

P_{2C}sp — Fine- to medium-grained pelitic schist and gneiss

P_{2C}sq — Quartzite, meta-arkose, thin to thick bedded

P_{2C}ss — Quartz-feldspar psammitic schist and gneiss; medium-grained and commonly rusty-weathering

Volcanic protolith

P_{2C}vb | P_{2C}vf | P_{2C}vl | P_{2C}vm | P_{2C}vp

P_{2C}vb — Volcanic breccia, angular clasts, grading into agglomerate

P_{2C}vf — Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P_{2C}vl — Intermediate volcanic rocks

P_{2C}vm — Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods. Interpreted as mafic volcanic rocks

P_{2C}vp — Felsic volcanic porphyry interpreted to be hypabyssal

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