MINERAL DEVELOPMENT DIVISION
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

DEPARTMENT OF ENERGY, MINES AND RESOURCES
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
GOVERNMENT OF CANADA

13K/9,10,15,16

SYMBOLS

- Geological boundary (defined, approximate, assumed, gradational)
- Unconformity (defined, approximate, assumed)
- Bedding, tops known (horizontal, inclined, overturned)
- Bedding, tops unknown (inclined, vertical)
- Igneous foliation: flow banding, compositional layering, eutaxitic structure (inclined)
- Facing direction on pillow lava (dip known, dip unknown)
- Foliation of unknown relative and/or absolute age, only foliation recognized in outcrop: schistosity, cleavage (horizontal, inclined, vertical, dip unknown)
- Gneissic layering (horizontal, inclined, vertical, dip unknown)
- Composite regional foliation (S_m) in pre-Helikian rocks: schistosity, slaty cleavage (inclined, vertical)
- S_{m+1} foliation (inclined, vertical, dip unknown)
- S_{m+2} foliation (inclined)
- Mineral rodding lineation, age unspecified
- Axis of minor fold, age unspecified
- Axis of minor fold of S_m (B_{m+1})
- Shape of folded planar feature on flat outcrop surface or sense of symmetry of small folds looking along plunge direction
- Structural trend observed on aerial photographs
- Lineament observed on aerial photographs
- Fault (defined, approximate, assumed)
- Thrust (defined, approximate, assumed)
- Anticline
- Antiform
- Syncline
- Synform
- Overturned anticline, antiform, syncline, synform
- Esker (direction of flow known; unknown)
- Locality where mineral age has been determined (in millions of years) — Ⓐ 1035
- Whole-rock age derived from samples collected at various localities in unit (in millions of years) — 1795±50
- Mineral occurrence — ×py
- Drumlinoid ridge

MINERAL OCCURRENCE ABBREVIATIONS

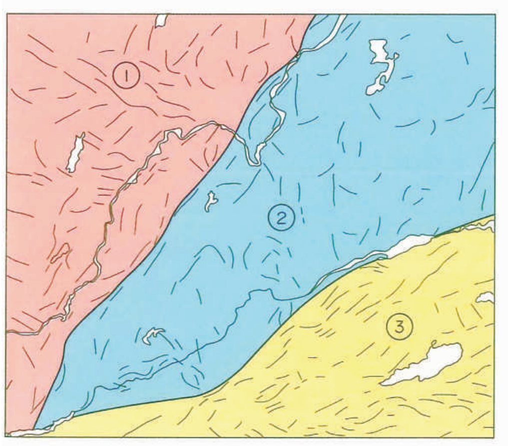
py	pyrite	mag	magnetite
cp.	chalcopyrite	i-f.	iron formation
bo	bornite	hem	specular hematite
cc.	chalcocite	fl	fluorite
gn.	galena	mo	molybdenite
sp.	sphalerite	U	uranium
po	pyrrhotite	RA	radioactivity
asb	asbestos	G	gossan zone

ISOTOPIC AGES

For whole-rock and mineral ages shown on the map the abbreviations preceding the ages refer to the following methods and minerals:

- Ri - Rubidium - strontium whole rock isochron
- Re - Rubidium - strontium whole rock errorchron
- Kb - Potassium - argon mineral age on biotite
- Kh - Potassium - argon mineral age on hornblende
- Km - Potassium - argon mineral age on muscovite
- Pbi - Lead-lead isochron age
- Pbp - Lead-lead mineral age on pitchblende

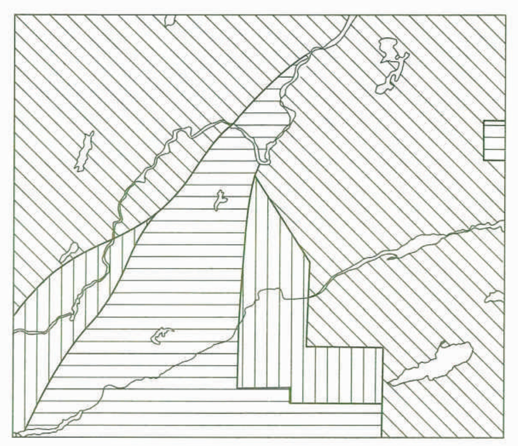
STRUCTURAL PROVINCES



1. NAIN PROVINCE (ARCHEAN)
2. MAKKOVIK SUBPROVINCE (EARLY PROTEROZOIC)
3. GRENVILLE PROVINCE (LATE PROTEROZOIC)

Lines indicate trend of major aeromagnetic elevations and depressions

RELIABILITY DIAGRAM



Diagonal rule: Compiled from published and unpublished reports and maps cited in text; minor ground checking

Vertical rule: Helicopter reconnaissance; limited ground traversing

Horizontal rule: Ground traversed

Geology compiled by B. Ryan, 1979. *Sources given in Appendix I of the accompanying report.*

Geological cartography by Mineral Development Division, Department of Mines and Energy, Government of Newfoundland and Labrador, St. John's.

Copies of this map may be obtained from the Publications and Information Section, Mineral Development Division, Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland A1C 5T7.

Base map assembled and produced by Maritime Resource Management Services Ltd., Amherst, Nova Scotia. The eastern half has been recontoured to metric intervals by hand from National Topographic System 1:50,000 sheets with contours in feet. Therefore metric elevations indicated on these portions of the map are not precise, but are close approximations based on the form of the original contours and elevations given on the NTS sheets.

Many of the names of lakes and rivers shown on this map are of informal useage and are not shown on NTS maps for this area.

Magnetic declination is approximately 34° westerly at the center of sheet.

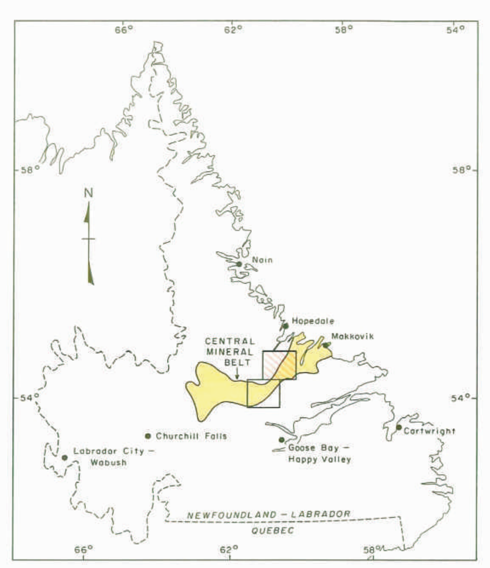
Many of the mineral occurrences shown on this map are taken from exploration company maps, and some may not be accurately located at this scale.

All bedrock units exhibit varying degrees of metamorphism and deformation. See accompanying report for descriptions.

This project was financed under the Canada/Newfoundland Mineral Development Subsidiary Agreement (1977-1981) by contributions from the Government of Newfoundland and Labrador (10 percent) and from the Departments of Regional Economic Expansion (45 percent) and Energy, Mines, and Resources (45 percent) of the Government of Canada.

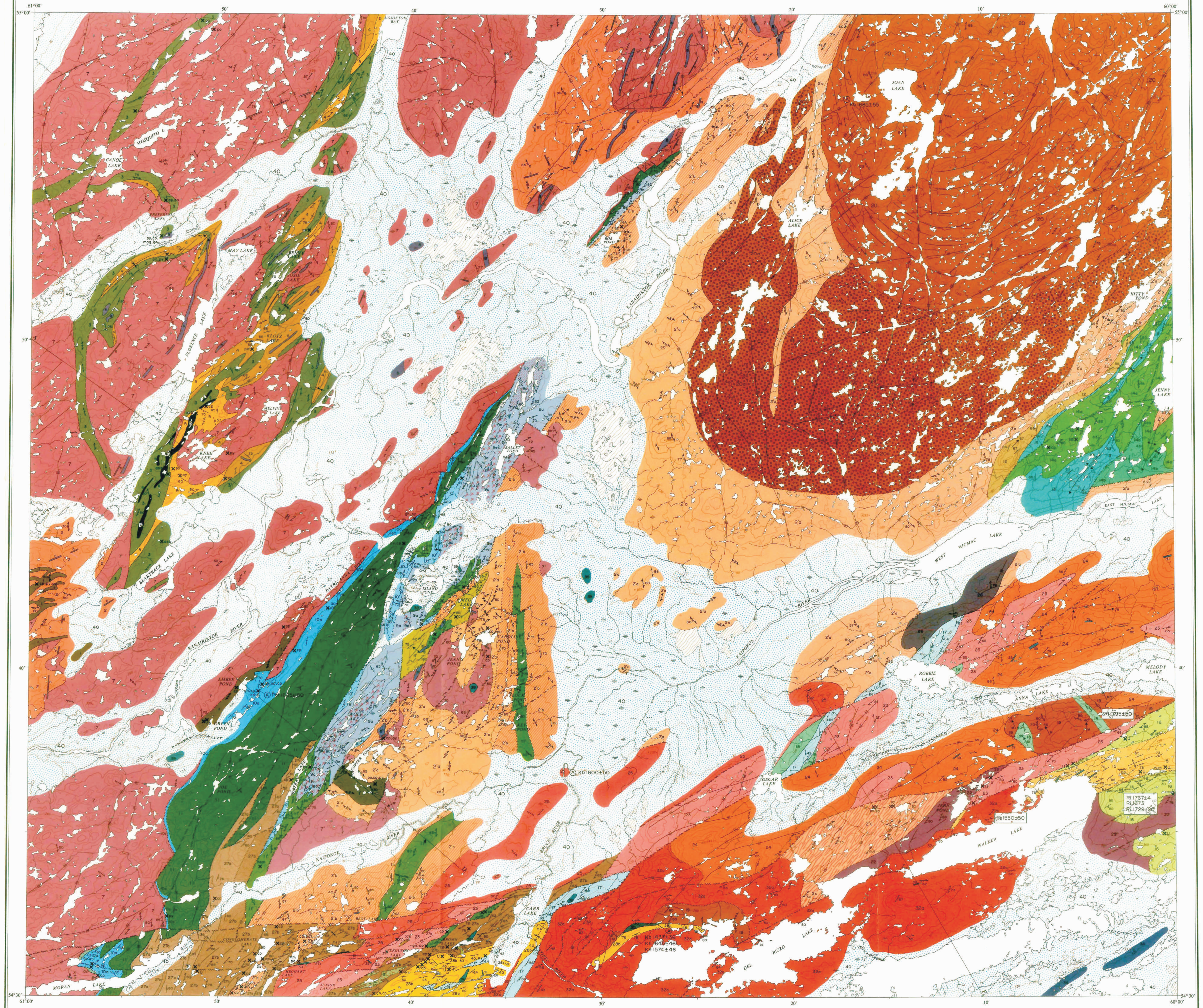
Legend and symbols are common to Sheet 1 and Sheet 2. Some map units and symbols may not appear on this map.

For an explanation of the use of the foliation designations S_m, S_{m+1}, etc., see Appendix III of accompanying report.



INDEX MAP

MAP 82-3



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GEOLOGY OF THE CENTRAL MINERAL BELT

(CENTRAL PART – SHEET 1)

elevations in metres above mean sea level
contour interval 40 metres

SCALE 1:100,000 ÉCHELLE

Miles 1 0 1 2 3 4 5 Milles

Kilometres 1 0 1 2 3 4 5 6 Kilomètres

LEGEND

QUATERNARY

- 40 — *Poorly sorted glacial till, boulder fields, and sandy outwash. Extensive areas of swamp along Kaipokok River.*

PROTEROZOIC — HELIKIAN

SEDIMENTARY, IGNEOUS, AND METAMORPHIC ROCKS OF THE GRENVILLE PROVINCE FORELAND ZONE

NEOHELIKIAN

GABBRO, DIORITE, DIABASE

- 39 — *Medium to fine grained, mafic and intermediate intrusive rocks of unknown absolute age.*

SEAL LAKE GROUP

- 38 — SALMON LAKE FORMATION: *Red shale, basaltic flows, and diabase sills.*
- 37 — WHISKY LAKE FORMATION: *Red and gray shale, slate, and argillite; minor red quartzite.*
- 36b, 36a — WUCHUSK LAKE FORMATION: *36a, gray to red quartzite, shale, chert, and limestone; 36b, diabase and gabbro sills.*
- 35b, 35a — BESSIE LAKE FORMATION: *35a, white, gray and pink, quartzite, arkose, and conglomerate; 35b, amygdaloidal and vesicular basalt.*

PALEOHELIKIAN

MICHAEL GABBRO

- 34 — *Medium to fine grained olivine gabbro; actinolite-plagioclase-biotite schist (metagabbro).*

NIPISHISH LAKE INTRUSIVE SUITE

- 33 — CROOKED RIVER GRANITE: *Pink to gray, undeformed to gneissose muscovite and biotite bearing aplite and fine to medium grained pink biotite granite.*
- 32b, 32a — OTTER LAKE - WALKER LAKE GRANITE: *32a, pink to gray equigranular and porphyritic, medium to coarse grained, massive to strongly foliated, biotite ± hornblende granite, granodiorite and monzonite; 32b, green to gray medium grained diorite.*

BRUCE RIVER GROUP

- 31 — *Red to pink, quartz-feldspar porphyry.*
- 30 — *Gray to black, plagioclase porphyry. May be extrusive in part.*
- 29f, 29e, 29d, 29c, 29b, 29a — SYLVIA LAKE FORMATION: *29a, brown to green, flow brecciated rhyolite; 29b, dark green to gray, massive to slightly porphyritic, andesite and basalt; 29c, mauve to green, plagioclase porphyritic, andesite and trachyandesite; 29d, 29e, undivided sequence of massive to porphyritic, gray and green basalt, andesite, and trachyandesite flows, agglomerate, breccia and bedded tuff (29d), alternating with massive to porphyritic, red, purple, gray, and black trachyte and rhyolite ignimbrite, flows, breccia, agglomerate, and bedded tuff (29e); 29f, volcaniclastic mudstone, sandstone and conglomerate (interbedded with above units). Sequence is strongly schistose and recrystallized in the Minisinakwa Lake - Stormy Lake area.*
- 28b, 28a — BROWN LAKE FORMATION: *28a, red, polymictic conglomerate and minor white oligomictic conglomerate; 28b, pink, red, buff, and green volcaniclastic sandstone, cherty dust tuff, minor conglomerate, and subarkose.*
- 27c, 27b, 27a — HEGGART LAKE FORMATION: *27a, massive to well bedded, buff to maroon, arkosic sandstone, minor polymictic conglomerate, and mudstone 27b, red and gray, pebble to cobble, polymictic conglomerate; 27c, massive and porphyritic mafic flows, sills and dikes.*

SOUTHERN KAIPOKOK VALLEY INTRUSIVE SUITE (relative and absolute ages not firmly established)

- 26 — *Diorite.*
- 25 — JUNIOR LAKE GRANODIORITE: *Undeformed to weakly foliated, medium grained, hornblende granodiorite to quartz diorite.*
- 24 — *Megacrystic, medium to coarse grained, undeformed to weakly foliated, biotite granodiorite.*
- 23 — *Pink, undeformed to weakly foliated, medium grained, potassic granite.*
- 22 — *Gray, medium to fine grained, foliated quartz monzonite.*

APHEBIAN OR EARLIER

- 21 — *Quartz-feldspar-hornblende-biotite gneiss and migmatite.*

PROTEROZOIC — APHEBIAN

SEDIMENTARY, IGNEOUS, AND METAMORPHIC ROCKS OF THE NAIN PROVINCE AND THE MAKKOVIK SUBPROVINCE FORELAND ZONE

MORAN LAKE GROUP (in depositional contact with Archean granite and gneiss)

- 11 — JOE POND FORMATION: *Massive and pillowed basalt, pillow breccia and bedded tuff; minor dolostone and chert.*
- 10c, 10b, 10a — WARREN CREEK FORMATION: *10a, gray to black mudstone, slate, siltstone, and sandstone with minor limestone, dolostone and chert; 10b, gray sandstone; 10c, brown dolostone.*

SEDIMENTARY, IGNEOUS, AND METAMORPHIC ROCKS OF THE MAKKOVIK SUBPROVINCE MOBILE ZONE

SYNKINEMATIC AND LATE KINEMATIC GRANITES

- 20a, 20 — ISLAND HARBOUR GRANITE: *Pink and gray, medium grained, equigranular to porphyritic, granodiorite. Border zone (20a), contains numerous gneiss xenoliths and is mylonitic.*
- 19 — *Foliated, medium grained granite, granodiorite and quartz monzonite.*

UNDIVIDED SUPRACRUSTAL ROCKS (lithologically similar to Moran Lake Group equivalents and lower Aillik Group).

- 18 — *Metavolcanic rocks varying in composition from bedded mafic and felsic tuffs to banded amphibolite.*
- 17 — *Metasedimentary rocks varying in composition from slate, phyllite, and psammite to garnetiferous muscovite-biotite schist.*

AILLIK GROUP

UPPER SEQUENCE

- 16 — *Gray to pink, porphyritic and nonporphyritic rhyolite (in part intrusive), ignimbrite, and air-fall tuff, and volcanic breccia.*
- 15 — *Pink, gray and green, laminated, volcaniclastic siltstone and sandstone.*

LOWER SEQUENCE (in tectonic contact with refoliated Archean gneiss)

- 14b, 14a — *14a, schistose, intermediate to mafic metavolcanic flows, sills, bedded tuffs, and breccias; 14b, laminated garnetiferous mafic tuffs.*
- 13 — *Gray to black, siltstone, mudstone, and slate, locally containing andalusite porphyroblasts; garnetiferous biotite-muscovite schist.*
- 12 — *Banded white quartzite; minor actinolite and biotite schist.*

MORAN LAKE GROUP EQUIVALENTS (in tectonic contact with refoliated Archean gneiss and granite)

- 11′ — *Schistose mafic metavolcanic rocks of diverse origin; bedded tuffs present east of Island Pond. Metagabbro locally present east of Boiteau Lake and north of Island Pond.*
- 10′ — *Black, graphitic, and chlorite-sericite phyllite and slate; minor chert, dolostone, and sandstone.*

ARCHEAN

KANAIRIKTOK VALLEY COMPLEX

GABBRO AND DIABASE

- 8 — *Coarse to fine grained mafic dikes, generally undeformed but locally schistose. May include post-Archean dikes.*

KANAIRIKTOK INTRUSIVE SUITE

- 7 — *Massive to weakly foliated to gneissose, medium grained, gray to pink, granite, granodiorite, and tonalite.*

ULTRAMAFIC ROCKS

- 6 — *Serpentinized peridotite and talc-carbonate rocks.*

FLORENCE LAKE GROUP

- 5 — LISE LAKE FORMATION: *Felsic lapilli tuff, lapillistone, minor chert and marble.*
- 4 — ADLATOK FORMATION: *Intermediate to felsic tuff, volcanic breccia, porphyritic sills, minor marble.*
- 3 — SCHIST LAKES FORMATION: *Massive and pillowed mafic flows and sills, intermediate and felsic tuffs and sills; minor marble.*

MAGGO GNEISS AND WEEKES AMPHIBOLITE

- 2 — *Layered, quartzofeldspathic gneiss with numerous amphibolite inclusions, cut by pegmatite and aplite dikes, and locally highly migmatized.*
- 1 — *Layered amphibolite, locally garnetiferous.*

KAIPOKOK VALLEY COMPLEX

BALLET POND SCHISTS

- 9c, 9b, 9a — *9a, quartzofeldspathic and mafic schist tectonically derived from 1′, 2′a, 7′, 8′, undivided; 9b, retrogressed and partially refoliated banded gneiss; 9c, schistose leucogranite.*

GABBRO AND DIABASE

- 8′ — *Coarse to fine grained mafic dikes, locally as swarms. Undeformed to slightly schistose, and discordant to layering in 1′, 2′a, but commonly rotated parallel to superimposed foliation in 2′b.*

KANAIRIKTOK INTRUSIVE SUITE EQUIVALENTS

- 7′ — *Massive to weakly foliated, medium grained, gray tonalite and granodiorite.*

FLORENCE LAKE GROUP EQUIVALENTS

- 4′ — *Deformed, felsic lapilli tuff, volcanic breccia, and siliceous volcanogenic sediments; minor chert and marble.*
- 3′ — *Deformed pillow lava.*

MAGGO GNEISS AND WEEKES AMPHIBOLITE EQUIVALENTS

- 2′c, 2′b, 2′a — *2′a, layered, quartzofeldspathic gneiss and amphibolite; 2′b, partially retrogressed and refoliated layered gneiss and amphibolite, commonly mylonitic. 2′c, gray refoliated migmatite.*
- 1′ — *Layered amphibolite, locally garnetiferous.*