



**LEGEND**

Note: weighted legend blocks indicate map-units that appear on this map

**HELVETIAN**

**QUATERNARY**

11 Till, gravel, sand

**HELVETIAN**

10 Diabase, quartz diabase

9 Pyroxenite (age relations not known)

**APHEBIAN**

8 Predominantly massive, equigranular, pink granite or adamellite; contains schlieren and lenses of darker gneiss in places, forming migmatite that is gradational to 7

7 Irregularly layered, swirled, or nebulitic gneiss and migmatite of varied composition and grain size, and containing dykes and sheets of granite, aplite, pegmatite

6 Layered gneiss, predominantly hornblende-bearing, in places with garnet, clinopyroxene, alternating layers of amphibole and biotite-quartz-feldspar gneiss in places; locally cut by dykes of granite, aplite; may be in part equivalent to mafic volcanic rocks of the Kaminaq Group

HURWITZ GROUP (Ah)

Ahd Massive or pillowed andesitic greenstone, in part intercalated with Ahc; associated mafic sills and dykes

Ahc Slate, siltstone, greywacke; commonly very thin-bedded; minor pink and cream dolomite, in part stromatolitic

Ahb Pink and white, thin-bedded orthoquartzite, commonly ripple-marked

Aha Polymictic conglomerate, greywacke, siltstone, impure quartzite

5 Massive, equigranular, pink granite; locally grades into migmatites with A's and A's; may be Kaminak and/or Helvetican in age; younger than 3

**MACKENZIE LAKE METASEDIMENTS**

Aq Metamorphosed arkose, granite- and quartz-pebble conglomerate, impure quartzite; pink and grey schist and gneiss; relation to Hurwitz Group and Montgomery Lake sediments not known; A'q, layered quartzofeldspathic gneiss and pink granitic gneiss; nebulitic granite gneiss; migmatite formed from A'q and 5

3 Chiefly massive, homogeneous pink, porphyritic (microcline) biotite adamellite; minor pink granite, granodiorite, and pegmatite; younger than 2; 3a, pink, medium-grained, nonporphyritic adamellite; 3b, chiefly massive, pink granodiorite; minor quartz diorite; 3' and 3b', ortho-gneiss derived from 3 and 3b in Helvetican Orogeny; locally cut by granitic dykes (3a, 3b, 3b' do not occur on this map)

2 Chiefly massive, grey hornblende tonalite; minor leucodiorite and grey biotite-hornblende granodiorite; minor gneiss with Av and 1; younger than 2; 2', fine-grained, recrystallized tonalite or granodiorite; ortho-gneiss derived from 2 in Helvetican Orogeny; locally cut by granite and apite dykes

1 Chiefly grey hornblende diorite or leucogabbro; minor tonalite and gabbro with Av; 1', fine- to medium-grained biotite-hornblende diorite orthogneiss; derived from 1 in Helvetican Orogeny; locally cut by granitic dykes

**KAMINAK GROUP**

As Greywacke and slate, in part graded; minor tuff, and/or tuffaceous greywacke, volcanic pebble conglomerate, argillite and iron-formation; locally contains felsic volcanics; As', biotite schist and leucogneiss derived from As in the Helvetican Orogeny; locally contains garnet, endolite, cordierite, and sillimanite; Asn, grey and pink leucogneiss and schist; 11-13-14 granitic migmatites (A's + 5); grades into As' to which it may, in part, be equivalent (As does not occur on this map)

Av Undifferentiated volcanic rocks, largely pillowed volcanics and agglomerates; includes mafic and felsic flows (Av + Av); Avs, undivided volcanic and sedimentary rocks; Av', intercalated amphibolitic and quartzofeldspathic schist; Avn, layered mafic schist and gneiss with layers of quartzofeldspathic gneiss; minor metagabbro and metavolcanics with relict structures

At Felsic tuff, agglomerate, flow breccia; includes associated quartz and quartz-feldspar porphyry intrusions (At does not occur on this map)

Am Massive or pillowed basaltic and andesitic greenstones; includes associated mafic intrusions; Amg, undivided mafic flows and gabbroic sills; Am', predominantly amphibolitic greenstones, amphibole schist and gneiss; minor metagabbro and quartzofeldspathic schist; Amn, amphibole gneiss, in places intercalated with quartzofeldspathic gneiss; minor metagabbro (Amn does not occur on this map)

**PRECAMBRIAN**

Drift covered area

Geological boundary (defined, approximate, assumed)

Geological boundary (gradational)

Bedding, tops known (inclined, overturned, dip unknown)

Bedding, tops unknown (inclined, overturned, dip unknown)

Foliation, cleavage, schistosity (inclined, vertical)

Foliation defined by mineral orientation in gneissic rocks, commonly called gneissic foliation (inclined, vertical)

Compositional layering, metamorphic layering, commonly called gneissic layering (inclined, vertical, dip unknown)

Mineral lineation (inclined)

Lineation, foliation-layering intersection (minor foldaxes)

Fault (defined, approximate, assumed)

Mineral occurrence

pyrite, goethite

chalcocite

iron-formation

pyrrhotite

Geology by R. T. Bell, 1968

To accompany Paper 70-61 by R. T. Bell

This preliminary edition may be subject to revision and correction.

Geological cartography by the Geological Survey of Canada

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base-map at the same scale published by the Army Survey Establishment, R. C. E., in 1966

Copies of the topographical edition of this map may be obtained from the Map Distribution Office, Department of Energy, Mines and Resources, Ottawa

Magnetic declination 1970 varies from 3° 00' easterly at centre of east edge to 7° 43' easterly at centre of west edge. Mean annual change increasing 5.4' annually

Elevations in feet above mean sea-level



**LEGEND**

**GENOZOIC**

**QUATERNARY**

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**HELVETIAN**

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**APHEBIAN**

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HURWITZ GROUP (Ah)

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**MACKENZIE LAKE METASEDIMENTS**

A'q Porphyritic (plagioclase) diabase, metadiabase, amphibole; age relations to Mackenzie Lake metasediments A and to granite 5 not known

A'qn Layered quartzofeldspathic gneiss; minor intercalated quartz gneiss and pelitic gneiss

**PLUTONIC ROCKS (1-4)**

4 Syenite, nepheline syenite, apite melilitite melagite, biotite pyroxenite; cancrinite, albite, and biotite-rich altered equivalents

3 Chiefly massive, homogeneous, pink, porphyritic (microcline) biotite adamellite; minor granite, granodiorite, apite, pegmatite; 3a, adamellite with inclusions of amphibolite; 3, cut by adamellite dykes

2 Chiefly massive, grey hornblende tonalite; minor leucodiorite, biotite-hornblende granodiorite; 2a, tonalite with abundant inclusions of amphibole; fine-grained diorite; 2b, isolated or gneissic tonalite; 2, cut by tonalite dykes

1 Chiefly hornblende gabbro or diorite; minor agite gabbro, norite, hornblende; 1a, hornblende gabbro or diorite with abundant inclusions of amphibolite; 1b, isolated or gneissic hornblende gabbro or diorite; 1, cut by gabbro or diorite dykes

1' Fine- to medium-grained biotite-hornblende diorite orthogneiss

**KAMINAK GROUP (A)**

As Greywacke and slate, in part graded; minor tuff, volcanic pebble conglomerate; includes iron-formation where marked; As', metagreywacke, pelitic schist, locally with garnet, andalusite, cordierite, staurolite

Asn Pelitic schist and gneiss in places with garnet, staurolite, kyanite

At Felsic tuff, agglomerate, flow breccia; includes associated quartz and quartz-feldspar porphyry intrusions; Ats, intercalated felsic volcanic and sedimentary rocks; quartzofeldspar schist, commonly containing minor amphibole

Av Mafic flows with some intercalated felsic flows and tuffs (Av + Av); Avs, undivided volcanic and sedimentary rocks; Av', intercalated amphibolitic and quartzofeldspathic schists

Avn Layered mafic schist and gneiss, with some layers of quartzofeldspathic gneiss; locally garnetiferous

Am Massive or pillowed basaltic and andesitic greenstones; some intercalated mafic pyroclastic rocks; includes associated mafic intrusions; Am, hornblende schist and amphibolite, pillow structure locally present

Amn Layered amphibolite and hornblende gneiss

\*For example: Am/3 indicates hornblende schist and amphibolite of unit Am' cut by adamellite dykes of unit 3

Geological boundary (defined, approximate, assumed)

Geological boundary (gradational)

Bedding, tops known (inclined, vertical, overturned, dip unknown)

Bedding, tops unknown (inclined, vertical, overturned, dip unknown)

Schistosity, cleavage, undefined foliation (inclined, vertical, dip unknown)

Gneissosity (horizontal, inclined, vertical, dip unknown)

Attitude of minor fold axial plane (inclined, vertical)

Plunge of minor fold axis (inclined, horizontal)

Plunge of mineral lineation (inclined, horizontal)

Trend of folded gneisses

Fault (defined, assumed)

Master joints in massive granitoid rocks (inclined, horizontal)

Axial trace of syncline (upright or inclined, overturned)

Axial trace of anticline (upright or inclined)

Occurrence of sedimentary iron-formation

Location of radiometric age determination, by K-Ar method, and age in millions of years

Site of trenching and/or drilling

Metallic mineral occurrence (chalcocite, py, sphalerite, sp, molybdenite, ms, nickeliferous pyrrhotite, ks, unmarked, pyrite-garnetite goass)

Metamorphic mineral occurrence (garnet, gt, cordierite, ct, andalusite, ad, staurolite, st, kyanite, ky, sillimanite, sl, diopside, dp)

Geology by A. Davidson, 1968 and 1967, and R. T. Bell, 1967

To accompany GSC Paper 69-51 by A. Davidson

**GOLD AND BASE METAL EXPLORATION USING DRIFT AS A SAMPLE MEDIUM, KAMINAK LAKE - TURQUETIL LAKE AREA**  
W. W. Shilts and P. A. Wyatt

