LEGEND

DEVONO-CARBONIFEROUS

SOUTH MOUNTAIN BATHOLITH

DCgEK **EAST KEMPTVILLE LEUCOGRANITE**[1]: buff to cream, medium-grained, equigranular, biotite[2] (< 2%), muscovite (2-5%), topaz (trace-5%), trace amounts of andalusite, fluorite, triplite, variable amounts of disseminated sulphide minerals, variably greisenized to dark grey and green.

DCg **LEUCOGRANITE:*** light grey to black, fine- to coarse-grained greisenized leucogranite - leucomonzogranite.

DCmDO **DOG LAKE LEUCOMONZOGRANITE**[3]: buff, pink, porphyritic, biotite (4-6%), muscovite (< 1-2%), disseminated sulphide minerals and fluorite occur in trace amounts, deformational features common.

DCmDL **DAVIS LAKE LEUCOMONZOGRANITE:** light grey to blue-white, buff, medium- to coarse-grained, megacrystic[4] (5-15%)[5], biotite (4-6%, locally up to 8%), muscovite (< 1-1%), trace cordierite, megacrysts mottled blue-grey, trace amounts of fluorite and quartz, carbonate veins common, disseminated sulphide minerals.

DCmSB **SABEANS LAKE LEUCOMONZOGRANITE:** light- to white-grey, predominantly fine- to medium-grained, slightly porphyritic with megacrysts of blue-grey feldspar, biotite (5-6%), muscovite (1-2%), trace cordierite, chlorite and calcite veins common.

DCmgSO-A **SOLOMON LAKE MONZOGRANITE**[6]: Variant (a) buff to white, fine grained, equigranular, biotite (8-10%), muscovite (trace-1%), trace fluorite, variably greisenized.

DCmgSO-B variant (b) same as above but fine- to medium-grained, moderately equigranular to slightly megacrystic.

DCmgSG **SCRAG LAKE MONZOGRANITE:** white-grey, medium- to coarse-grained, variable texture (seriate, megacrystic 5-15%), predominantly megacrystic, biotite (12-18%), trace muscovite and cordierite.

DCgdSG **SCRAG LAKE GRANODIORITE**[6]: white-grey, medium- to coarse-grained, variable texture (seriate, megacrystic 5-15%), predominantly megacrystic, biotite (15-18%), trace muscovite and cordierite.

MIDDLE DEVONIAN OR EARLIER(?)

DM **MAFIC INTRUSION:**** diorite, quartz diorite, monzonite, quartz monzonite.

ORDOVICIAN - SILURIAN

OSw **WHITE ROCK FORMATION:***** quartzite, slate, siltstone and volcanic rocks.

CAMBRO-ORDOVICIAN

MEGUMA GROUP***

COH **HALIFAX FORMATION:** finely laminated slate and siltstone, minor quartz greywacke.

COG **GOLDENVILLE FORMATION:** greenish-grey greywacke and minor interbedded slate.

* Geology of the leucogranite-leucomonzogranite cupola at Kempt Snare Lake is after Soehl et al. (1989).

** Geology of the mafic intrusion at Wentworth Lake is after O'Reilly (1978).

*** Geology of the White Rock Formation and Meguma Group rocks is primarily after Taylor (1967, 1969) with modifications to the geology of the Meguma Group rocks from Rogers (1986) and Donohoe and Grantham (1989).

[1] LEUCOGRANITE: A granitoid rock of monzogranite composition with less than 2% combined mafic minerals.

[2] PERCENT BIOTITE, MUSCOVITE, CORDIERITE: Percentage of biotite from point counting and visual modal estimates, percentage of muscovite and cordierite from visual modal estimates.

[3] LEUCOMONZOGRANITE: A granitoid rock of monzogranite composition with less than 6% combined mafic minerals.

[4] MEGACRYST: A nongenetic term for a crystal that is significantly larger than the surrounding groundmass. In the South Mountain Batholith, megacrysts are predominantly subhedral to euhedral K-feldspar, and rarely plagioclase, crystals (generally between 2.5-7 cm in length) in medium- to coarse-grained rocks; adj. megacrystic.

[5] MEGACRYST ABUNDANCE: Percentage of megacrysts from visual modal estimates.

[6] MONZOGRANITE, GRANODIORITE: After Streckeisen (1976).

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Donohoe, H.V., Jr., and Grantham, R.G. 1989: Geological Highway Map of Nova Scotia, second edition; Atlantic Geoscience Society, Halifax, AGS Special Publication No. 1.

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Streckeisen, A. L. 1976: To each plutonic rock its proper name; Earth Science Reviews, v. 12, p. 1-33.

Taylor, F. C. 1967: Reconnaissance geology of Shelburne map-area, Queens, Shelburne, and Yarmouth Counties, Nova Scotia; Geological Survey of Canada, Memoir 349.

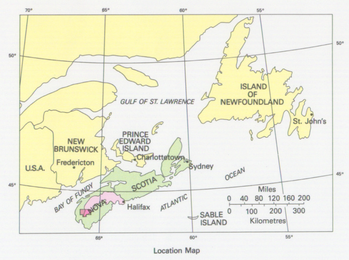
Taylor, F. C. 1969: Geology of the Annapolis-St. Mary's map area, Nova Scotia; Geological Survey of Canada, Memoir 358.

Planimetric base from National Topographic Series, Department of Energy, Mines and Resources, Ottawa.

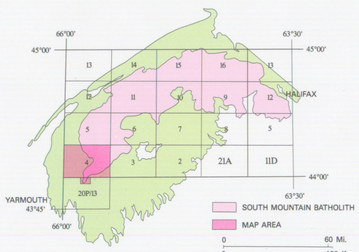
Updated from aerial photography that was available in May, 1988.

Cartography by Land Registration and Information Service, Amherst, Nova Scotia.

NOTE: Drillhole (conventional diamond-drill holes, overburden drillholes and auger/diamond-drill holes) numbers and locations are compiled from the drillhole database of Nova Scotia Department of Natural Resources, assessment reports from mineral exploration companies filed with the Nova Scotia Department of Natural Resources and other information available to the authors from Shell Canada Resources and Rio Algom Limited. **Figure 1** illustrates the drillholes examined in conjunction with the mapping. Additional drillholes not examined are compiled on the map. Because of space limitations, areas with numerous drillholes (particularly within the East Kemptville deposit area and other mineral occurrences) are outlined and not all drillholes in these areas are plotted. For additional information and locations of all drillholes, readers are referred to the report accompanying this map and to company assessment reports filed with the Nova Scotia Department of Natural Resources.



Location Map



SYMBOLS
(not all symbols occur on map)

Rock outcrop, probable outcrop, float

Geological boundary (defined, approximate, assumed, defined by till clasts, defined by airborne spectrometry)

Geological boundary — gradational (< 100 m; > 100 m)

Exposed intrusive contact (arrow pointing toward younger unit, age relation not determined)

Unconformity (hatching on younger side)

Limit of mineralogical or textural variation

Bedding (horizontal, inclined, vertical, overturned, dip unknown, younging direction unknown)

Anticline (defined, approximate, overturned)

Syncline (defined, approximate, overturned)

Preferred orientation of feldspar megacrysts (horizontal, inclined, vertical, dip unknown)

Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown)

Breccia

Schlieren banding (horizontal, inclined, vertical, dip unknown) poorly developed isolated bands and well developed (thin and heavy lines respectively)

Lineament (from air photos)

Fault (defined, approximate, assumed, inclined, vertical)

Fault (sinistral, dextral)

Shear zone, with central mylonite zone

Shearing and intense fracturing, fracture cleavage (horizontal, inclined, vertical, dip unknown)

Joint (horizontal, inclined, vertical, dip unknown)

Striations: sense of ice flow (known or unknown)

Dyke or vein: ALBI-albitite; APPG-aplite with minor pegmatite; DIAB-diabase; ELVA-elvan; LUGR-leucogranite; LUMZ-leucomonzogranite; LUPO-leucoporphyry; MIAP-mica aplite; MONZ-monzogranite; PEGM-pegmatite; PEGMZ-zoned pegmatite; PGAP- pegmatite with minor aplite; PORP-porphyry; QTZ-quartz (indicated if mineralized); all unlabelled dykes are aplites; < 1 m-thin lines > 1 m-heavy lines (inclined, vertical, dip unknown)

Stockwork (type indicated) — QTZ

Sheeted complex (type indicated) — QTZ

Area of abundant dyking (type or map unit indicated) — DCgd

Greisen: < 1 m, > 1 m (indicated if mineralized) — G

Megacryst-rich area — MR

Xenoliths (< 1 m, > 10 m, concentration of xenoliths) map unit indicated when known

Diamond-drill hole (DDH; reference number from N.S.D.N.R. drill hole database and assessment reports) — 82-158

Trench, adit, shaft

Mineral occurrence (commodities indicated at top; number on bottom refers to N.S.D.N.R. mineral occurrence cards) — U, Cu / A10-1

Mine, Prospect, Quarry (active, abandoned) — Sn

Skarn — SK

COMMON MINERAL ABBREVIATIONS

ad-andalusite; am-amethyst; ap-apatite; as-arsenopyrite; at-autunite; bi-biotite; bo-bornite; ca-calcite; cc-chalcocite; ka-cassiterite; cp-chalcopyrite; ch-chlorite; cd-cordierite; cy-chrysocola; fl-fluorite; gn-galena; gr-garnet; he-hematite; il-ilmenite; ka-kaolinite; ma-malachite; man-manganese minerals; mo-molybdenite; mu-muscovite; po-pyrrhotite; py-pyrite; qtz-quartz; sh-scheelite; sl-sillimanite; sp-sphalerite; se-sericite; to-torbernite; tr-tourmaline; wo-wolframite.

COMMON ALTERATION ABBREVIATIONS

ALB-albitization; CHL-chloritization; DES-desilicification; HAA-high alumina; HEM-hematization; KAO-kaolinitization; LIM-limonitization; POT-potassic (which includes biotitization and K-feldspathization); SAU-saussuritization; SIL-silicification; *intense and pervasive in capitals; slight to moderate in lower case.*

OTHER ABBREVIATIONS

por-development of porphyry texture; blue-quartz blue in colour; mag-magnetite

MINERAL OCCURRENCES

Occurrence No.	Occurrence name
A04-01	Carleton
A04-02	Hilton Gold, North Carleton, Fanning Lake
A04-03	Kemptville
A04-04	Snare Lake
A04-05	Wentworth Lake
A04-06	Pearl Lake
A04-07	Davis Lake, Ike's Ridge
A04-08	Oakland Lake
A04-09	East Kemptville
A04-10	Tusket, Tusket River
A04-11	Tusket
A04-12	Duck Pond
A04-13	Big Meadow Brook zones
A04-14	Gardners Meadow Brook
A04-15	Kempt Back Lake Gold
A04-16	Pearl Lake North
A04-17	Beaverhouse Lake
A04-18	Calling Meadows Brook
A04-19	Dog Lake
A04-20	Flintstone Rock
A04-21	Nepsedek Lake West
A04-22	Nepsedek Lake North

Table 1. Mineral occurrences compiled from Nova Scotia Department of Natural Resources mineral occurrences cards and assessment reports filed with the Department. Descriptive information on these mineral occurrences is found in the report accompanying this map. At the time of map printing, A04-12 to A04-21 are being compiled and are not incorporated into the Nova Scotia Department of Natural Resources mineral occurrence database.

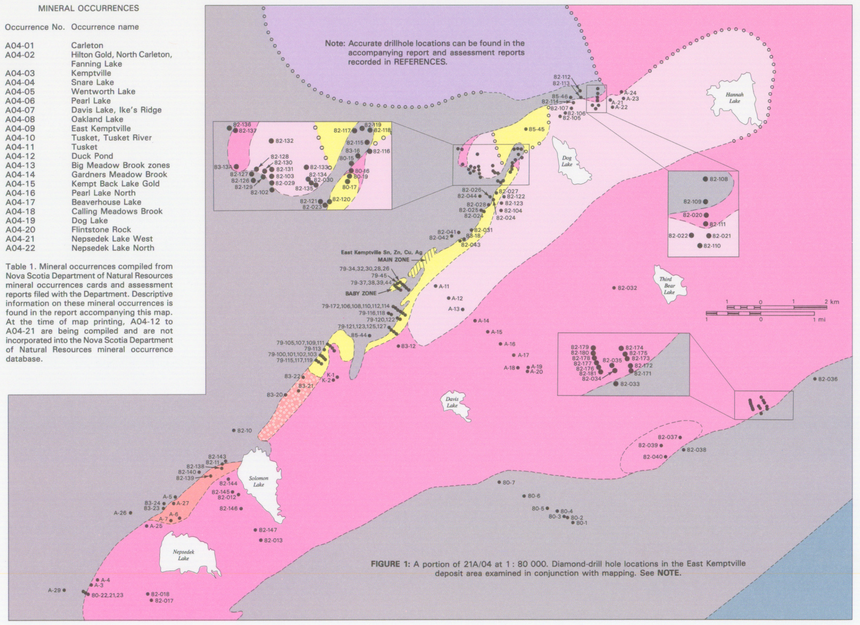


FIGURE 1: A portion of 21A/04 at 1 : 80 000. Diamond-drill hole locations in the East Kemptville deposit area examined in conjunction with mapping. See **NOTE.**

NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES

MINES AND ENERGY BRANCHES

MAP 94-03

GEOLOGICAL MAP OF

WENTWORTH LAKE

(N.T.S. SHEET 21A/04 and part of 20P/13)

SOUTH MOUNTAIN BATHOLITH PROJECT

L. J. HAM and M. A. MACDONALD

SCALE 1 : 50 000

kilometres 1 0 1 2 3 4 kilometres

miles 1 0 1 2 miles

NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES

HONOURABLE DONALD R. DOWNE, MINISTER

DARRELL D. HILTZ, DEPUTY MINISTER

HALIFAX, NOVA SCOTIA

1994

Nova Scotia Department of Natural Resources

Canada-Nova Scotia Mineral Development Agreement