Nova Scotia Department of Natural Resources
Mineral Resources Branch

Open File Map ME 2005-119

Geological Map of the Hopewell Area (NTS 11E/07), Nova Scotia

R. D. Naylor, P. S. Giles and D. C. Brisco

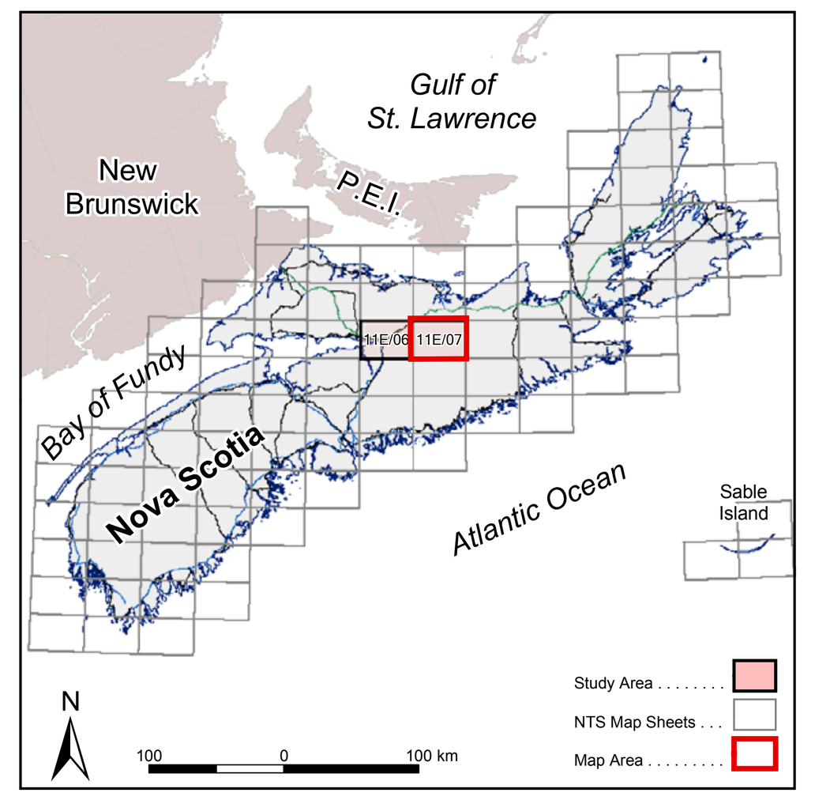
Scale 1:50 000

1 0 1 2 3 km

Halifax, Nova Scotia

NOVA SCOTIA Natural Resources

Regional Key Map



Introduction

The outcrop data on this map have been obtained from a variety of sources. The most recent data were collected during the 2003 and 2004 field seasons as part of a federal-provincial Targeted Geoscience Initiative (Phase 2) project that concentrated on geological mapping and mineral resource evaluation for NTS areas 11E/06 and 11E/07. Data were compiled from Stevenson (1956 and 1958 a and b), Benson (1967 a and b), Bingley (1968-71 a and b), Donohoe and Wallace (1982), Pe-Piper and Piper (2005 a and b), Chandler et al. (1997), Giles (1992) and Giles et al. (2005). Map interpretation was aided by review and analysis of a number of geophysical surveys. These include unpublished industry seismic data acquired by Contact Resources, and regional magnetic and radiometric surveys (see King, 2005 a and c).

Sources of the individual outcrop data are not indicated on the map. The digital database from which this map was derived (Brisco et al., 2005) contains source information for all the outcrop data illustrated.

The map illustrates a number of important advancements not shown on previous maps. These include more detailed stratigraphic subdivision of Carboniferous strata, more accurate delineation of major faults, updated mineral occurrence data, and the location of localized mafic and felsic units that appear to intrude Carboniferous strata.

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Map Notes

Universal Transverse Mercator Projection (UTM), Zone 20, Central Meridian 63°00' West.

North American Datum (NAD) 1927.

Base and digital data derived from the Nova Scotia Topographic Database (NSTDB). The NSTDB is available from Service Nova Scotia and Municipal Relations (SNSMR), Land Information Services Division (LIS), Nova Scotia Geomatics Centre (NSGC), Amherst, Nova Scotia.

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Disclaimer

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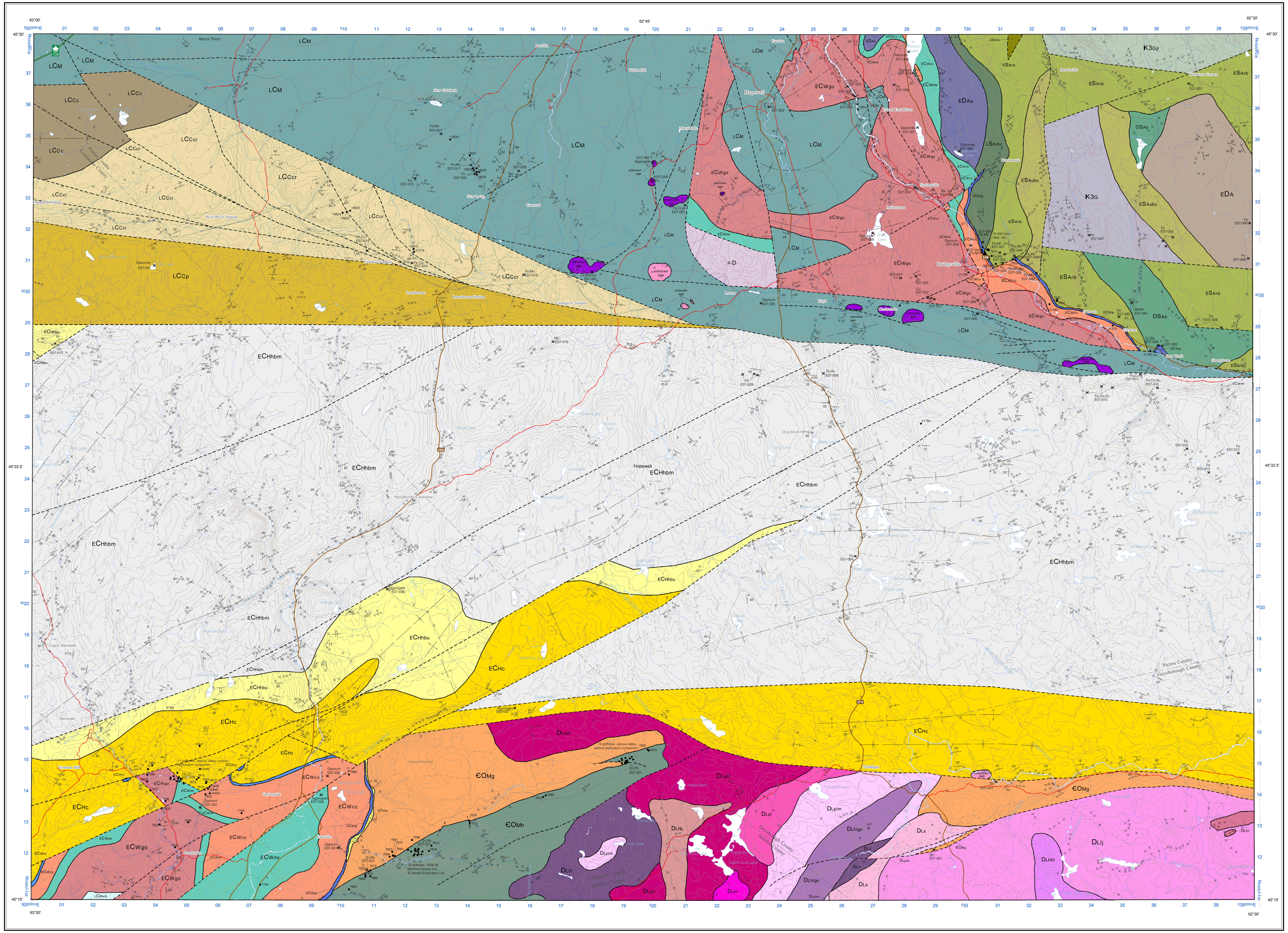
Legend

Contour
Index Contour
Depression Contour
Index Depression Contour
Coastline
Lakes, Single-line Rivers, Streams
100 Series Highway (102)
Trans-Canada Highway (104)
Trunk Highway (4)
Collector Highway (333)
Hard Surface Road
Road Under Construction
Loose Surface/Resource Access Road
Vehicle Track
Trail/Footpath
Railway
Railway Inactive
County Boundary

Geological Symbols

Mineral occurrence
Drillhole
Outcrop
Spore sample
Minor fold axis: inclined, 1st generation
Slicken striae
Bedding: facing known (overturned, horizontal, inclined, vertical)
Bedding: facing unknown (horizontal, inclined, vertical)
First cleavage or foliation (inclined, vertical, horizontal)
Shear: inclined (sinistral, dextral, normal, reverse)
Shear: vertical (sinistral)
Shear: sense unknown, inclined
Fault - approximate
Geological contact
Unconformity (approximate)
Anticline, syncline (approximate)
Area of concentrated drilling



Geology Legend

PALEOZOIC

LATE CARBONIFEROUS

CUMBERLAND GROUP

LCCc — *CROSS ROAD FORMATION* (LCCc): red and locally grey, granule to cobble, polymictic conglomerate interbedded with red, poorly sorted, granule-rich mudrock

LCCcr — *CHIGANOIS RIVER FORMATION* (LCCcr): pale grey, fine- and local medium-grained sandstone interbedded with grey and red mudrock, local coal and rare bituminous limestone and oil shale

LCCp — *PARRSBORO FORMATION* (LCCp): grey and red mudrock, dark grey and black shale, and thin (<4 m), red and grey, fine-grained sandstone units

MABOU GROUP

LCM — (LCM): undivided red and grey mudrock, green sandstone

LCMwb — *WATERING BROOK FORMATION* (LCMwb): grey mudrock and shale with intercalated gypsum, anhydrite and halite; evaporites most abundant in lower part of formation

EARLY CARBONIFEROUS

WINDSOR GROUP

ECWgo — *GREEN OAKS FORMATION* (ECWgo): maroon to reddish-brown mudrock and fine-grained sandstone, with intercalated marine limestone and dolostone, with associated anhydrite or gypsum

ECWmr — *MACDONALD ROAD FORMATION* (ECWmr): gypsum, anhydrite and minor halite, with interbeds of grey and maroon mudrock and sheet-like carbonate members; cyclic repetition of these rock units is characteristic

ECWcc — *CARROLLS CORNER FORMATION* (ECWcc): anhydrite, gypsum, with minor dolostone and mudrock in thin beds; includes undifferentiated shale and mudrock breccia with minor gypsum and anhydrite

ECWm — *MACUMBER FORMATION* (ECWm): limestone, in part dolostone, laminated and/or banded, peloidal, sparsely fossiliferous

ECWgr — *GAYS RIVER FORMATION* (ECWgr): dolostone, minor limestone, thinly bedded, argillaceous and bituminous, locally thickly bedded and highly fossiliferous in mound-shaped deposits resting upon pre-Carboniferous rocks

HORTON GROUP

ECHcs — *COLDSTREAM FORMATION* (ECHcs): reddish-brown, polymictic conglomerate and conglomeratic sandstone with minor dark grey mudrock

ECHc — *CHEVERIE FORMATION* (ECHc): grey-green to minor maroon sandstone, locally granule to pebbly conglomerate, interbedded with maroon to minor grey-green mudrock

HORTON BLUFF FORMATION

ECHhbu — UPPER MEMBER (ECHhbu): light- to medium-grey, thick sandstone (quartz arenite), interbedded with grey shale, micaceous mudrock, greenish-grey mudrock and nodular dolostone; minor granule conglomerate

ECHhbm — MIDDLE MEMBER (ECHhbm): grey to dark grey shale (fissile), alternating, thinly bedded grey mudrock and fine sandstone, and green mudrock

DEVONIAN

LISCOMB COMPLEX

DLsll, DLpl, DLnl, DLlj — SOUTH LOON LAKE (DLsll), PORCUPINE LAKE (DLpl), NELSON LAKE (DLnl) LEUCOMONZOGRANITE: fine- to medium-grained, equigranular; proportions of biotite and muscovite variable; pink to buff in colour

LONG JOHN LAKE MONZOGRANITE (DLlj): medium-grained, pale pink to buff, equigranular, biotite > muscovite

DLell, DLs, DLhl, DLbbl — EAST LOON LAKE (DLell) and SANCTUARY (DLs) MONZOGRANITES: megacrystic, medium- to coarse-grained, grey, biotite > muscovite; intruded by Porcupine Lake, Nelson Lake and South Loon Lake leucomonzogranites

HATTIE LAKE MONZOGRANITE (DLhl): coarse-grained, grey, megacrystic biotite monzogranite

BOTTLE BROOK LAKE MONZOGRANITE (DLbbl): fine- to medium-grained, pale pink, subporphyritic, biotite > muscovite, occurs as a large roof pendant in the Long John Lake monzogranite

DLtl — TWIN LAKES GRANODIORITE (DLtl): medium-grained, in part megacrystic, grey, biotite is the single Fe-Mg mineral present, intrudes Pogue Lake metamorphic suite

DLplm, DLhlgn — POGUE LAKE METAMORPHIC SUITE (DLplm): high-grade mafic and felsic gneiss, schist and quartzite, ubiquitous sillimanite

HILL LAKE GNEISS (DLhlgn): quartz-feldspar-biotite gneiss, subdivision of the Pogue Lake metamorphic suite

ORDOVICIAN - EARLY DEVONIAN

ARISAIG GROUP

EDA — (EDA): Undivided

EDAs — *STONEHOUSE FORMATION* (EDAs): bluish-grey mudrock, calcareous mudrock

LSAmo — *MOYDART FORMATION* (LSAmo): green and red mudrock

LSAmc — *MCADAM FORMATION* (LSAmc): grey to green mudrock, shale, minor limestone

ESArb — *ROSS BROOK FORMATION* (ESArb): blue-grey shale, mudrock

ESAubc — *UPPER BEECHILL COVE FORMATION* (ESAubc): blue-green mudrock

OSAb — *BEARS BROOK FORMATION* (OSAb): red, arkosic sandstone, conglomerate

CAMBRO-ORDOVICIAN

MEGUMA GROUP

ЄOMh, ЄOMg — *HALIFAX FORMATION* (ЄOMh): metapelite, grey to dark grey, with thinly intercalated metagreywacke; highly magnetic

GOLDENVILLE FORMATION (ЄOMg): metagreywacke with minor metapelite; medium grey to dark grey

NEOPROTEROZOIC

PRE-LATE DEVONIAN

P-D — (P-D): Late Precambrian to early Devonian, mainly sedimentary basement rocks of the Antigonish Highlands

GEORGEVILLE GROUP

K3G — (K3G): Undivided, sediments

K3Gjr — *JAMES RIVER FORMATION* (K3Gjr): conglomerate, black and green mudrock, greywacke

UNKNOWN AGES

unknown — MAFIC INTRUSION: gabbro, lesser diorite, fine- to medium- and coarse-grained varieties

unknown — FELSIC INTRUSION: monzogranite, monzonite and gneissic granite

Oct 21, 2005