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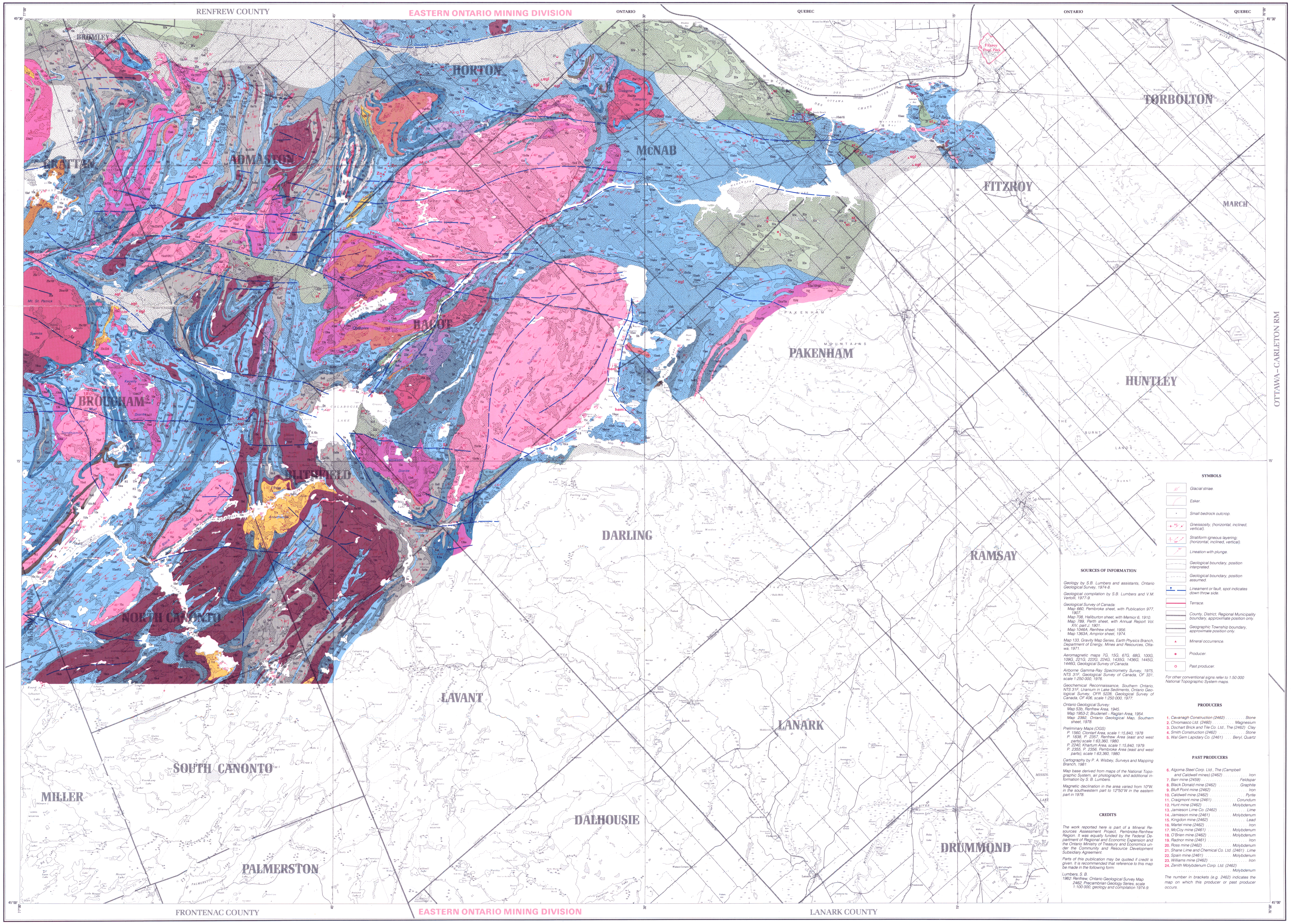


Scale 1:100 000

Metres 5000 0 5 10 Kilometres

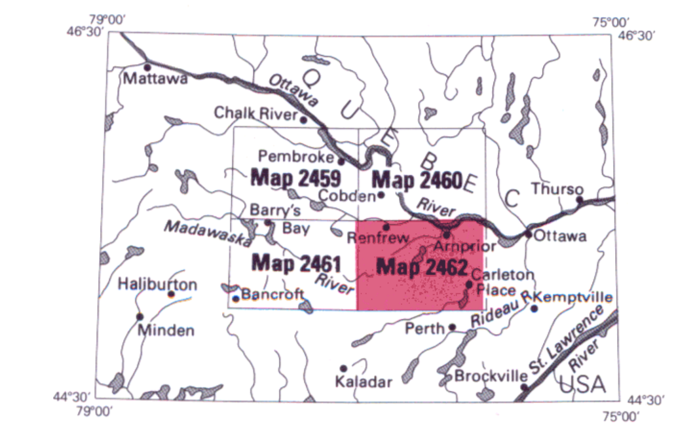
Ministry of Natural Resources
Ontario

Ontario Geological Survey

Map 2462

RENFREW

PRECAMBRIAN GEOLOGY
SCALE 1:100 000



NTS Reference 31F/SE

Aeromagnetic Reference 7G,12G,67G,68G

Published 1982

LEGEND

This legend is a condensed version of that for the Renfrew County Area.
For the complete subdivision of the rock map units see Map 2460, Cobden.

PHANEROZOIC

CENOZOIC[a]

QUATERNARY

PLEISTOCENE AND RECENT. Unconsolidated glacial, fluvial, lacustrine, and swamp deposits.

UNCONFORMITY

PRECAMBRIAN AND PHANEROZOIC

34 *Hematized fault gouge and mylonitic rocks.*[b]

33 *POST MIDDLE ORDOVICIAN. Calcite-barite, dolomite-barytocelestite, and hematite veins.*

FAULT CONTACT

PALEOZOIC

ORDOVICIAN

32 *MIDDLE ORDOVICIAN. Limestone, siltstone, minor shale, quartz sandstone, quartz-pebble conglomerate.*

31 *LOWER ORDOVICIAN. Dolostone, minor shale.*

UNCONFORMITY

CAMBRIAN (?)

30 *Trachyte dikes.*

INTRUSIVE CONTACT

PRECAMBRIAN

LATE PRECAMBRIAN

MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS[c]

29 *Diabase dikes, gabbro, diorite, peridotite.*

INTRUSIVE CONTACT

ALKALIC INTRUSIVE ROCKS

28 *Carbonatite, fenite, syenite.*†

INTRUSIVE CONTACT

LATE PEGMATITE[d]

27 *Granite pegmatite.*

HIGH RANK REGIONAL METAMORPHISM

LATE MAFIC INTRUSIVE ROCKS[e]

26 *Metadiabase.*

SYENITE-MONZONITE SUITE INTRUSIVE ROCKS[e]

25 *Syenite and monzonite.*

24 *Tonalitic to gabbroic rocks.*

ALKALIC SUITE INTRUSIVE ROCKS[f]

23 *Alkalic granite.*

22 *Alkalic syenite.*

21 *Nepheline syenite.*

20 *Mafic alkalic rocks.*

QUARTZ MONZONITE SUITE INTRUSIVE ROCKS[f]

19 *Quartz monzonite.*

ANORTHOSITE SUITE INTRUSIVE ROCKS

18 *Monzonite and syenitic rocks.*

17 *Anorthosite and related mafic rocks.*

MAFIC SILLS AND DIKES[g]

16 *Gabbro, diorite, amphibolite.*

BIOTITE DIORITE SUITE INTRUSIVE ROCKS

15 *Granitic rocks.*

14 *Syenitic rocks.*

13 *Diorite and related mafic rocks.*

METAVOLCANICS[h]

12 *Felsic to intermediate metavolcanics.*

11 *Mafic metavolcanics.*

METASEDIMENTS

CALCAREOUS METASEDIMENTS[h]

10 *Carbonate metasediments.*

9 *Amphibole-rich metasediments.*

8 *Calcareous and siliceous shaly metasediments.*

CLASTIC SILICEOUS METASEDIMENTS[h]

7 *Quartzose and feldspathic metasediments*

6 *Micaceous sandy and conglomeritic metasediments.*

5 *Coarse clastic sequence*[j]†

UNCONFORMITY

ANORTHOSITE SUITE INTRUSIVE ROCKS (ALGONQUIN BATHOLITH)

4 *Granitic rocks.*†

3 *Monzonitic and syenite rocks.*†

2 *Anorthosite and related mafic rocks.*†

INTRUSIVE CONTACT

MIDDLE PRECAMBRIAN

METASEDIMENTS

CLASTIC SILICEOUS METASEDIMENTS[h]

1 *Impure sandy and shaly metasediments.*†

RS *Rusty schists.*[k]

IF *Iron formation.*

S *Sulphide mineralization.*

Where in places a formation is too narrow to show in colour and must be represented in black, a short black bar appears in the appropriate block.

a Only the thickest and most extensive Cenozoic deposits, in which bedrock outcrops are absent or scarce, are shown.

b The history of fault zones containing these rocks is complex and largely unknown, but the zones were initiated during Precambrian time and underwent reactivation during Late Precambrian to post Middle Ordovician time; seismic activity is presently recorded near some of these faults. Although not shown, these rocks are also present along most of the narrow fault zones indicated by thick broken lines.

c No radiometric ages are available for these rocks, but limited paleomagnetic data suggests that some of the diabase dikes may be Early Paleozoic in age.

d Common throughout the gneissic Precambrian rocks, only the largest known dikes and areas of marked dike concentrations are shown. These dikes and other types of late pegmatite are associated with units 23, 22, 21, and 20.

e Contain relict primary microtextures and mineralogy. Emplaced at a stage during regional metamorphism.

f Emplaced over an interval that probably encompasses the culmination and waning stages of regional metamorphism. Massive varieties of these rocks are microbreccias containing relict primary microtexture and mineralogy.

g Multiple ages represented.

h Rocks of these groups are subdivided lithologically and the order does not imply age relationships either within, or between groups.

j Forms the base of the Late Precambrian supracrustal accumulation.

k Most rusty schists are probably hydrothermal replacement deposits in shear zones, but some may represent tuffaceous iron sulphide-bearing sediments or black shales.

† *Does not occur on this sheet.*

SYMBOLS

- *Glacial striae.*
- *Esker.*
- *Small bedrock outcrop.*
- *Gneissosity, (horizontal, inclined, vertical).*
- *Stratiform igneous layering; (horizontal, inclined, vertical).*
- *Lineation with plunge.*
- *Geological boundary, position interpreted.*
- *Geological boundary, position assumed.*
- *Lineament or fault, spot indicates down throw side.*
- *Terrace.*
- *County, District, Regional Municipality boundary, approximate position only.*
- *Geographic Township boundary, approximate position only.*
- *Mineral occurrence.*
- *Producer.*
- *Past producer.*

For other conventional signs refer to 1:50 000 National Topographic System maps.

PRODUCERS

1. Cavanagh Construction (2462) . . . . Stone
2. Chromasco Ltd. (2460) . . . . Magnesium
3. Dochart Brick and Tile Co. Ltd., The (2462) Clay
4. Smith Construction (2462) . . . . Stone
5. Wal Gem Lapidary Co. (2461) . . . Beryl, Quartz

PAST PRODUCERS

6. Algoma Steel Corp. Ltd., The (Campbell and Caldwell mines) (2462) . . . . Iron
7. Barr mine (2459) . . . . Feldspar
8. Black Donald mine (2462) . . . . Graphite
9. Bluff Point mine (2462) . . . . Iron
10. Caldwell mine (2462) . . . . Pyrite
11. Craigmont mine (2461) . . . . Corundum
12. Hunt mine (2462) . . . . Molybdenum
13. Jamieson Lime Co. (2462) . . . . Lime
14. Jamieson mine (2461) . . . . Molybdenum
15. Kingdon mine (2462) . . . . Lead
16. Martel mine (2462) . . . . Iron
17. McCoy mine (2461) . . . . Molybdenum
18. O'Brien mine (2462) . . . . Molybdenum
19. Radnor mine (2461) . . . . Iron
20. Ross mine (2462) . . . . Molybdenum
21. Shane Lime and Chemical Co. Ltd. (2461) . Lime
22. Spain mine (2461) . . . . Molybdenum
23. Williams mine (2462) . . . . Iron
24. Zenith Molybdenum Corp. Ltd. (2462) . . . . Molybdenum

The number in brackets (e.g. 2462) indicates the map on which this producer or past producer occurs.

METAL AND MINERAL REFERENCE

all	Allanite	mi	Mica
ap	Apatite	Mo	Molybdenum
asb	Asbestos	ne	Nepheline
Au	Gold	Ni	Nickel
cor	Corundum	Pb	Lead
Cu	Copper	py	Pyrite
Fe	Iron	Sr	Strontium
fel	Feldspar	st	Stone
fl	Fluorite	U	Uranium
gf	Graphite	Zn	Zinc
hem	Hematite	zr	Zircon
sgl	Sand and gravel		

SOURCES OF INFORMATION

Geology by S.B. Lumbers and assistants, Ontario Geological Survey, 1974-8.

Geological compilation by S.B. Lumbers and V.M. Vertolli, 1977-9.

Geological Survey of Canada:
Map 660, Pembroke sheet, with Publication 977, 1907.
Map 708, Haliburton sheet, with Memior 6, 1910.
Map 789, Perth sheet, with Annual Report Vol. XIV, part J. 1901.
Map 1046A, Renfrew sheet, 1956.
Map 1363A, Arnprior sheet, 1974.

Map 133, Gravity Map Series, Earth Physics Branch, Department of Energy, Mines and Resources, Ottawa, 1971.

Aeromagnetic maps 7G, 15G, 67G, 68G, 100G, 109G, 221G, 222G, 224G, 1435G, 1436G, 1445G, 1446G, Geological Survey of Canada.

Airborne Gamma-Ray Spectrometry Survey, 1975, NTS 31F, Geological Survey of Canada, OF 331, scale 1:250 000, 1976.

Geochemical Reconnaissance, Southern Ontario, NTS 31F, Uranium in Lake Sediments, Ontario Geological Survey, OFR 5228, Geological Survey of Canada, OF 406, scale 1:250 000, 1977.

Ontario Geological Survey:
Map 53b, Renfrew Area, 1945.
Map 1953-2, Brudenell – Raglan Area, 1954.
Map 2392, Ontario Geological Map, Southern sheet, 1978.

Preliminary Maps (OGS)
P. 1560, Clontarf Area, scale 1:15,840, 1978
P. 1838, P. 2357, Renfrew Area (east and west parts) scale 1:63,360, 1980.
P. 2240, Khartum Area, scale 1:15,840, 1979.
P. 2355, P. 2356, Pembroke Area (east and west parts), scale 1:63,360, 1980.

Cartography by P. A. Wisbey, Surveys and Mapping Branch, 1981.

Map base derived from maps of the National Topographic System, air photographs, and additional information by S. B. Lumbers.

Magnetic declination in the area varied from 10°W. in the southwestern part to 12°50′W in the eastern part in 1978.

CREDITS

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Lumbers, S. B.
1982: Renfrew; Ontario Geological Survey Map 2462, Precambrian Geology Series, scale 1:100 000, geology and compilation 1974-9.