



## SOURCES OF INFORMATION

Base map derived from map 31 E/5 of the National Topographic System, scale 1:50 000.

Hewitt, D.F. 1967. Geology and mineral deposits of the Parry Sound-Orrville area, Ontario Department of Mines, Geological Report 52, 65p.

GSC-OMD aeromagnetic map 127G (Sagin Falls), scale 1:63 300.

McRoberts, G.D. 1991. Geology of the Manitowaning Lake area, Ontario Geological Survey, Open File Map 157, scale 1:15 840.

Satterly, J. 1943. Mineral occurrences in Parry Sound District, Ontario Department of Mines, Annual Report, 1942, v.51, pt.2, 86p.

Files of the Mines and Minerals Information Centre, Ontario Geological Survey, Toronto.

Magnetic declination approximately 11°54'W at the centre of the Orrville area in 1996.

Geology not tied to surveyed lines.

## CREDITS

Geology by S.B. Lumbers and V.M. Ventoli, 1993-1996.

Geological compilation by S.B. Lumbers, 1996.

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Geology and legend reviewed by M. Easton and B. Berduoso.

To enable the rapid dissemination of information, this map has not received a technical edit. Discrepancies may occur for which the Ontario Ministry of Northern Development and Mines does not assume liability. Users should verify critical information.

This map area covers an area in the vicinity of other previously released maps (e.g., P.3358, Precambrian Geology, Barroff Area) and upcoming maps. Although the rock codes for the same lithologic unit may not correspond from map to map, an attempt has been made to standardize the colour used on all maps to represent the same rock type.

Issued 2000.

Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form:

Lumbers, S.B. and Ventoli, V.M. 2000. Precambrian geology, Orrville area, Ontario Geological Survey, Preliminary Map P.3414, scale 1:50 000.

## LEGEND

## PHANEROZOIC

## CENOZOIC\*

## QUATERNARY

## PLEISTOCENE AND HOLOCENE

## UNCONFORMITY

## PRECAMBRIAN

## PROTEROZOIC

## NEOPROTEROZOIC

## MESOPROTEROZOIC

## REGIONAL METAMORPHISM

## PARRY SOUND INTRUSIVE COMPLEX (&gt;1000-1450 Ma)†

## MONZOGORANITE

## GRANODIORITE TO TONALITE INTRUSIVE ROCKS

## LEUCODIORITE

## DIORITE AND GABBRO

## ULTRAMAFIC INTRUSIVE ROCKS

## CALCAREOUS METASANDSTONE ROCKS

## SILICEOUS CHLORITE METASANDSTONE ROCKS

## ANORHOSE-MANGENITE-CHAMOCKITE-GRANITE (AMCG) SUITE INTRUSIVE ROCKS (1460-1430 Ma)† (Units 3 to 8)

## FERRODIORITE

## MONZOGORANITE

## ANDESINE MONZOGORANITE

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## ANORHOSE-MANGENITE-CHAMOCKITE-GRANITE (AMCG) SUITE INTRUSIVE ROCKS (1460-1430 Ma)† (Units 3 to 8)

- 5 Monzodiorite  
5a Gneissic, greyish, garnetiferous monzodiorite with augen structure and relict igneous textures; commonly contains less than 10% quartz; locally grades into granodiorite with an increase in quartz and into quartz diorite with an increase in quartz and a decrease in alkali feldspar; inclusions of diorite (unit 4) and dikes of diorite and unit 7 common
- 5b Unit 5a with laminated structure and a metamorphic fabric; veins of quartzofeldspathic material; rocks of unit 5b and discontinuous amphibole layers common; locally greenish, with pyroxene and porphyroblasts of garnet
- 4 Diorite and Gabbro  
4a Gneissic, augen-textured to laminated diorite to quartz diorite with colour indices greater than 30; primary igneous textures poorly preserved or absent
- 4b Gneissic, augen-textured to laminated gabbro; primary igneous textures poorly preserved or absent
- 3 Anorthosite  
3a Gneissic, augen-textured to laminated andesine anorthosite, and subordinate gneissic leucodiorite, with colour indices between 10 and 30
- 3b Gneissic, laminated labradorite anorthosite, locally with xenoliths of gneissic gabbro
- 2 Grey Gneiss (>1460 Ma)‡  
Heterogeneous, grey, laminated granodiorite to tonalitic gneiss, rich in quartzofeldspathic veins; rocks of unit 16 and dikes of units 5 and 7 are discontinuous layers and boudins of amphibolite
- 1 Mafic-Rich Grey Gneiss (>1460 Ma)‡  
Similar to unit 2 but much richer in amphibolite; may contain rocks of unit 4

- 18 Pegmatite (1100-1000 Ma)‡  
Massive to deformed, pink to red, quartz-alkali feldspar pegmatite; commonly accompanied by patches and veins of finer-grained quartz-alkali feldspar that replace host rocks
- 17 Alaskitic Intrusive Rocks (>1000-1450 Ma)‡  
Gneissic alaskite with laminated structure and a metamorphic fabric
- 16 Parry Sound Intrusive Complex (>1000-1450 Ma)†  
Monzogranite  
16a Gneissic, pink, metalmurine monzogranite with augen structure and relict igneous textures; commonly contains inclusions of diorite and amphibolite, and up to 2% titanite
- 16b Unit 16a with laminated structure and a metamorphic fabric; locally veined by quartzofeldspathic material and rich in rocks of unit 18
- 16c Gneissic, equigranular to laminated, leucocratic alkali feldspar granite with a metamorphic fabric
- 15 Granodiorite to Tonalite Intrusive Rocks  
15a Gneissic, pink to grey granodiorite with augen structure and relict igneous textures; contains local trondhjemite and tonalite phases; inclusions of diorite and amphibolite common
- 15b Unit 15a with laminated structure and a metamorphic fabric; locally veined by quartzofeldspathic material and rich in rocks of unit 18
- 15c Unit 15a especially rich in tonalite and trondhjemite
- 14 Anorthosite  
14a Massive to gneissic labradorite anorthosite containing less than 10% mafic minerals, with relict primary igneous textures and mineralogy; locally shows augen structure; leucogabbro units containing 10 to 30% mafic minerals show primary igneous layering with mafic minerals showing optical and ockocyclic intergrowth with labradorite
- 14b Massive to gneissic labradorite anorthosite dikes
- 13 Leucodiorite  
13a Massive to gneissic, augen-textured leucodiorite and quartz leucodiorite with primary igneous textures, poorly preserved primary igneous mineralogy and colour indices less than 30; locally anorthositic with colour indices less than 10; primary igneous layering present in places, marked by concentrations of pyroxene or its metamorphic equivalent
- 13b Unit 13a with augen to laminated structures, a metamorphic fabric and scattered garnet porphyroblasts
- 12 Diorite and Gabbro  
12a Gneissic, augen-textured to laminated diorite and quartz diorite with colour indices greater than 30; metamorphic fabric dominant; primary igneous textures poorly preserved or absent; locally grades into tonalite with an increase in quartz content
- 12b Gneissic, augen-textured to laminated gabbro with colour indices greater than 30; metamorphic fabric dominant; primary igneous textures poorly preserved or absent
- 11 Ultramafic Intrusive Rocks  
Massive to gneissic pyroxenite containing both orthopyroxene and clinopyroxene; occurs as small bodies that cut rocks of units 13a and 13b, and as segregations in diorite (unit 12a) and gabbro (unit 12b)
- 10 Calcareous Metasandstone Rocks  
10a Siliceous diatomitic and minor calcitic marl; commonly contains calc-silicate rock fragments, disrupted layers of calc-silicate rock, and metamorphosed calcareous mudstone and sandstone
- 10b Calc-silicate rock containing minor siliceous marble
- 9 Siliceous Chlorite Metasandstone Rocks  
9a Metamorphosed quartz sandstone, subarkose and arkose
- 9b Micaceous, garnetiferous gneiss containing porphyroblasts of one or more of muscovite, biotite, garnet, sillimanite and alkali feldspar; locally contains rocks of units 10 and 9a, and thin zones of rusty, graphitic, pyritic schist derived from shaly metasedimentary rocks
- 8 Ferrodiorite  
Massive to locally gneissic ferrodiorite and leucodiorite with igneous textures and relict primary igneous mineralogy; locally displays corona texture
- 7 Monzogranite  
7a Gneissic, pink to greenish, metalmurine monzogranite with augen structure and relict igneous textures; commonly contains inclusions of amphibolite (unit 4) and rocks of units 2, 5 and 6
- 7b Unit 7a with laminated structure and a metamorphic fabric; commonly veined by quartzofeldspathic material and rich in rocks of unit 18
- 6 Andesine Monzogranite  
Gneissic, greyish-pink, peraluminous andesine monzogranite with laminated structure, a metamorphic fabric and prominent garnet porphyroblasts; rocks of unit 18 common

- Geological contact, interpreted
- Compositional layering and/or parallel tectonic foliation (horizontal)
- Compositional layering and/or parallel tectonic foliation (vertical)
- Lineation, with plunge
- Compositional layering and/or parallel tectonic foliation (inclined, magnitude of dip uncertain)
- Producer, past producer or mineral occurrence

## ABBREVIATIONS

- sgl sand and gravel pit

## PRODUCERS AND PAST PRODUCERS

- 1 Carrex Inc. - sand, gravel, aggregate

