

INTRODUCTION

This report represents a contribution to the Western Superior NATMAP project, aimed at describing relationships between areas of Mesoproterozoic granulite facies and Neoproterozoic supracrustal sequences (granite belts). It also describes the geology of an area including the boundary between the central Wabigoon subprovince and the western Wabigoon subprovince (Fig. 1), where Neoproterozoic igneous rocks of 2770-2710 Ma progressively overlap the 2730-2700 Ma amphibolite facies granulite and gabbro units of the eastern Wabigoon subprovince. The 2730-2700 Ma rocks are separated from the 2770-2710 Ma rocks by a major shear zone. The 2770-2710 Ma rocks include mafic gabbro and plagioclase gabbro, and are separated from the 2730-2700 Ma rocks by a major shear zone. The 2770-2710 Ma rocks are separated from the 2730-2700 Ma rocks by a major shear zone. The 2770-2710 Ma rocks are separated from the 2730-2700 Ma rocks by a major shear zone.

DESCRIPTIVE NOTES

The map represents a contribution to the Western Superior NATMAP project, aimed at describing relationships between areas of Mesoproterozoic granulite facies and Neoproterozoic supracrustal sequences (granite belts). It also describes the geology of an area including the boundary between the central Wabigoon subprovince and the western Wabigoon subprovince (Fig. 1), where Neoproterozoic igneous rocks of 2770-2710 Ma progressively overlap the 2730-2700 Ma amphibolite facies granulite and gabbro units of the eastern Wabigoon subprovince. The 2730-2700 Ma rocks are separated from the 2770-2710 Ma rocks by a major shear zone. The 2770-2710 Ma rocks include mafic gabbro and plagioclase gabbro, and are separated from the 2730-2700 Ma rocks by a major shear zone. The 2770-2710 Ma rocks are separated from the 2730-2700 Ma rocks by a major shear zone.

REGIONAL GEOLOGICAL SETTING

The study area encompasses part of the central Wabigoon region, postulated to be a basement to bedding Neoproterozoic granulite facies (Fig. 1). The central Wabigoon region includes the area bounded by the Huronian and the Huronian, and is separated from the Huronian and the Huronian by a major shear zone. The central Wabigoon region includes the area bounded by the Huronian and the Huronian, and is separated from the Huronian and the Huronian by a major shear zone.

LITHOLOGICAL MAP UNITS

Mesoproterozoic (2730-2700 Ma) Rocks
These rocks include mafic gabbro and plagioclase gabbro, and are separated from the 2730-2700 Ma rocks by a major shear zone. The 2770-2710 Ma rocks include mafic gabbro and plagioclase gabbro, and are separated from the 2730-2700 Ma rocks by a major shear zone. The 2770-2710 Ma rocks include mafic gabbro and plagioclase gabbro, and are separated from the 2730-2700 Ma rocks by a major shear zone.

ACKNOWLEDGMENTS

Field assistance by G. Bowring (1993), J. Baker (1994), and J. B. Thompson (1994) is gratefully acknowledged. Discussions with D. Davis, M. St-Onge, J. H. Stewart, P. H. G. M. Dirksen, and J. H. Stewart, and access to their unpublished thesis and other publications are gratefully acknowledged. The authors are also grateful to M. St-Onge, J. H. Stewart, and J. H. Stewart for their assistance in the field and in the laboratory. The authors are also grateful to M. St-Onge, J. H. Stewart, and J. H. Stewart for their assistance in the field and in the laboratory.

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STRUCTURAL GEOLOGY AND METAMORPHISM

Several generations of ductile shear zones are present in the region. The earlier deformation phases (D1, D2) are represented by the Huronian and the Huronian, and are separated from the Huronian and the Huronian by a major shear zone. The central Wabigoon region includes the area bounded by the Huronian and the Huronian, and is separated from the Huronian and the Huronian by a major shear zone.

Geological boundary approximations, compiled from existing sources.

Shear zone, D3 (unfilled) approx. Shear zone, D4 (filled) approx.

Deformation zone

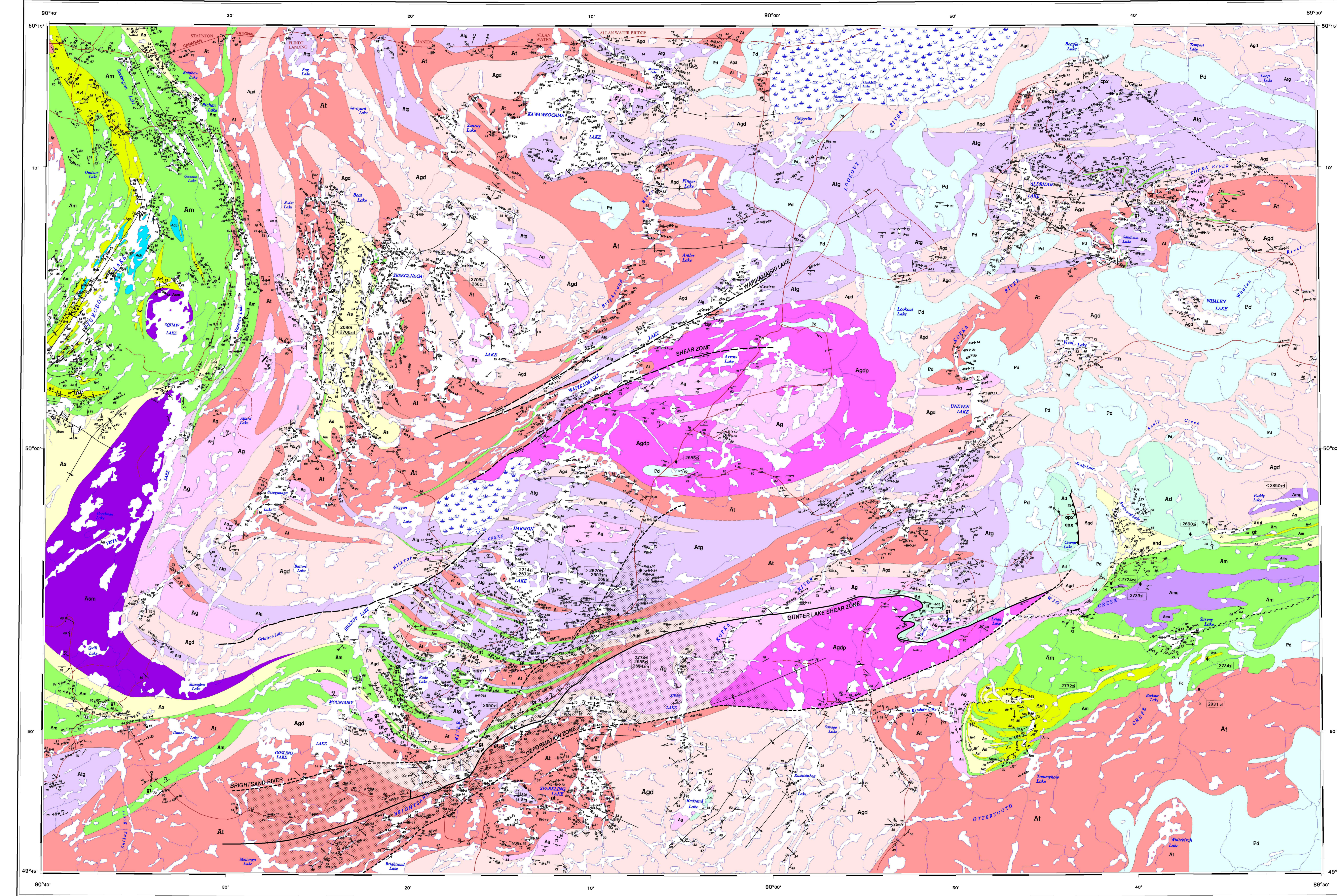
Fault zone of uncertain relative age. F4 (filled, normal, overthrust). F4 (filled, normal). F4 (filled, normal). F4 (filled, normal). F4 (filled, normal).

Outcrop

Slackensides, generation unknown. Intersection lineation (bedding-cleavage). Stretching lineation (bed. 4th; unknown generation; bedding). W fold (bed. 2nd, 3rd, 4th; unknown generation). Z fold (bed. 2nd, 3rd, 4th; unknown generation). S fold (bed. 2nd, 3rd, 4th; unknown generation). Dike (generally unknown (bed. 3rd, 4th generation)). Dike (generally unknown).

Metasupracrustal zone (bed. 2nd, 3rd, 4th; unknown sense). Metasupracrustal zone (bed. 2nd, 3rd, 4th; unknown sense). Fracture cleavage, generation unknown. Bedding, inclined; top; unknown; overturned. U-Pb age. Ma; p.p.; zircon; 1; date. 1; p.p.; zircon; 1; date.

Minerals. Clinopyroxene (cpx). Orthopyroxene (opx). Garnet (grt). Andalusite (and).



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CONTRIBUTION TO THE WESTERN SUPERIOR NATMAP PROJECT
GEOLOGY OF THE STURGEON LAKE - OBONGA LAKE AREA
ONTARIO

Scale 1:100,000 - Echelle 1:100 000

Figure 2. Completion sources

A: Deane et al., 1974 & Rogers, 1984. B: Rogers, 1984. C: Proulx, 1984. D: Thurein, 1986. E: Thurein, 1986. F: Thurein, 1986. G: Thurein, 1986. H: Thurein, 1986. I: Thurein, 1986. J: Thurein, 1986. K: Thurein, 1986. L: Thurein, 1986. M: Thurein, 1986. N: Thurein, 1986. O: Thurein, 1986. P: Thurein, 1986. Q: Thurein, 1986. R: Thurein, 1986. S: Thurein, 1986. T: Thurein, 1986. U: Thurein, 1986. V: Thurein, 1986. W: Thurein, 1986. X: Thurein, 1986. Y: Thurein, 1986. Z: Thurein, 1986.

RECENT

Dike(s) overburden: (t) esters, monazite, calcite deposits

MESOPROTEROZOIC

Pd Diabase (mainly 2730-2700 Ma); medium to coarse-grained, massive to weakly foliated mafic-ultramafic bodies; mafic; monzonitic

ARCHAIC

Am Intrusive Rocks
Am System (Vela Lake complex); medium to coarse-grained, massive to weakly foliated mafic-ultramafic bodies; mafic; monzonitic

Ag Granite; medium to coarse-grained to pegmatitic or aplitic; massive to weakly foliated mafic-ultramafic bodies; mafic; monzonitic; occurs as plutons and pegmatite dikes

Agpd Porphyritic granulites (2685 Ma); weakly foliated, K-feldspar porphyritic or megacrystic; homogeneous; mafic-ultramafic bodies; mafic; monzonitic; veins to microcrystals, quartz monzonitic quartz veins, diorite and gabbro

Ad Diolite; medium-grained, foliated to megacrystic hornblende diorite dikes; veins to gabbro, quartz dikes, quartz gabbro (200 m)

Agd Granodiorite (2700 ± 4 Ma); medium to coarse-grained, homogeneous, foliated mafic granulite; mafic megacrystic (p-10% mafic megacrystic)

At Tonale (ca. 2715-2690 Ma); medium-grained, homogeneous, foliated biotite ± hornblende granulite; mafic megacrystic (p-10% mafic megacrystic); veins to quartz dikes, biotite dikes; includes some older homogeneous tonalite (2770-2695 Ma)

Supracrustal Rocks

Amu Sedimentary rocks: fine to medium-grained, mafic to mafic-ultramafic, mafic-ultramafic gabbro to diorite

As gabbro ± sillite ± andalusite ± cordierite and quartz; mafic to mafic-ultramafic gabbro to diorite

Avf Anhydrous mafic rocks (2744-2703 Ma); fine-grained, foliated quartz; mafic-ultramafic mafic-ultramafic bodies, derived mainly from homogeneous or mafic-ultramafic mafic-ultramafic bodies; includes some mafic-ultramafic gabbro to diorite

Agb Gabbro; intrusion; medium-grained, homogeneous to layered; weakly foliated gabbro to diorite

Amu Mafic-ultramafic intrusions (2733 Ma); medium-grained; homogeneous to layered; weakly foliated gabbro to diorite

Am Mafic-ultramafic rocks (2775-2718 Ma); fine to medium-grained, foliated mafic-ultramafic mafic-ultramafic bodies, derived from massive and layered mafic-ultramafic bodies; includes some mafic-ultramafic gabbro to diorite

Asj Quartz-rich mafic-ultramafic rocks (2700 Ma); fine to medium-grained; mafic-ultramafic mafic-ultramafic bodies, including mafic-ultramafic mafic-ultramafic bodies

Unsubdivided plutonic and gneissic rocks

Atg Tonale gneiss (> 2.67 Ga); layered rock consisting of mafic-ultramafic mafic-ultramafic mafic-ultramafic mafic-ultramafic

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