

Legend

Mesoproterozoic rocks

25 Mackenzie dikes (unit 25)

Paleoproterozoic rocks

24 Granitic pegmatite (ca. 1773 Ma)

23a) K-feldspar or albite dominant, locally garnet, beryl, tourmaline, magnetite, apatite, zircon, chloropyrite, boronite and chalcocite bearing

24b) albite dominant (alkalite)

23 Biotite granite, pink monzogranite and other K-feldspar-rich granitoids

23a) biotite granitic rocks

23b) pink monzogranite

23c) porphyritic K-feldspar granite

22 Thorntons Lake pluton (ca. 1329 Ma), monzogranite; locally fluorite bearing

21 Late intrusive rocks (ca. 1829 Ma; Rayner and Corrigan, 2004)

21a) K-feldspar-megacrystic monzogranite: pink; magnetic; biotite-hornblende bearing

21b) gabbro, diorite and quartz diorite

Whymie Bay assemblage (>1832 to 1829 Ma; Rayner and Corrigan, 2004; Kremer et al., 2009)

20 Magnetite-bearing sedimentary rocks

20a) feldspathic arenite and lesser quartzite

20b) polymictic conglomerate

Strawberry Island assemblage (>1860 to 1849 Ma)

19 Magnetiferous sedimentary rocks

19a) conglomerate: polymictic, clast supported with arkosic sandstone matrix

19b) quartz and feldspathic arenite: well-bedded

Granite-granodiorite-tonalite (ca. 1849 Ma)

18 Granite, granodiorite and tonalite

18a) tonalite-granodiorite: locally grey to buff; biotite-hornblende bearing; locally magnetiferous with biotite aggregates

18b) gneissic tonalite: locally plagioclase phytic

18c) megacrystic granite

18d) feldspathic porphyry

Chipewyan batholith (ca. 1865 to 1855 Ma; Ray and Wanless, 1980)

17 K-feldspar-megacrystic granite

Partridge Breast Lake assemblage (>1883 to 1860 Ma)

16 Intermediate, mafic and ultramafic intrusive rocks

16a) leucodiorite, quartz diorite; dark grey; magnetiferous

16b) diorite: dark grey; hornblende phytic; biotite aggregates

16c) gabbro and leucogabbro

16d) pyroxenite dikes and sills

15 Greywacke, mudstone and polymictic conglomerate; locally interbedded with units 13, 14, and 16, and magnetiferous with amuscovite, staurolite, and andalusite and sillimanite

15a) greywacke and mudstone: weakly magnetiferous; muscovite bearing sedimentary, staurolite, andalusite, garnet

15b) polymictic conglomerate

14 Mafic to intermediate volcanoclastic and epiclastic rocks with minor flows

14a) andesite

14b) mafic tuff and epiclastic rocks: hornblende phytic

14c) volcanic conglomerate: heterolithic, clast supported

13 Intermediate to felsic volcanic rocks: tuff and resedimented tuff

13a) dacite

13b) rhyolite: quartz phytic and quartz-feldspar phytic

12 Massive and pillowed amygdaloidal basalt: locally with minor silicate- and sulphide-facies iron formation

11 Feldspathic and aluminous magnesian greywacke, minor conglomerate and calcisilicate

11a) psammite: grey, massive to crudely bedded; locally with sulphide-facies iron formation

11b) pelitic: magnesian, foliated, contains garnet and sillimanite; locally with sulphide-facies iron formation

11c) conglomerate

11d) calcisilicate

Northern Indian Lake pluton (ca. 1890 Ma; Martins and MacFarlane, 2016)

10 Felsic to intermediate intrusive rocks

10a) granodiorite: strongly foliated with metasedimentary and gabbroic xenoliths

10b) quartz monzonite to quartz diorite: porphyritic; biotite-hornblende

Turtle Island intrusive complex (ca. 1890 Ma; Rayner and Corrigan, 2004)

9 Pyroxenite-hornblende, gabbro, leucogabbro, diorite, quartz diorite to tonalite: layered with multiple injections

Pukatawagan Bay assemblage (>1988 to 1890 Ma)

8 Intermediate, mafic and ultramafic rocks

8a) gabbro, locally diabase, rare quartz diorite

8b) gabbro with lesser gabbroic and anorthositic leucogabbro

8c) peridotite

7 Psammite and pelitic greywacke: minor iron formation, graphitic and sulphidic layers

6 Basalt and derived amphibolite: massive to pillowed, minor pillow-fragment breccias

5 Greywacke paragneiss

Churchill River assemblage (>1988 Ma)

4 Pillowed basalt with intervening greywacke: rare beds of clast-supported conglomerate and thinly bedded mudstone

Rocks of uncertain age

3 Tonalite-granodiorite-granite gneiss: variably magnesian with rafts of paragneiss

2 Pelitic to quartzofeldspathic magnesian paragneiss: rare volcanic interlayers

Archean rocks

1 Granodiorite gneiss (ca. 2520 Ma; Kremer et al., 2009)

Note: Legend boxes are coloured only if the unit or subunit occurs on this map sheet.

Symbols

Planar Structures

Bedding: tops unknown, known, overturned

Crenulation cleavage: generation, sense unknown

Dike; vein

Fault plane: sinistral

Flow contact: tops unknown

Fold axial plane: generation unknown, 1, 2, 3

Foliation: generation unknown, 1, 2, 3

Gneissosity: generation unknown, 1, 2

Igneous layering: tops unknown, known

Pillow: tops known

Shear, generation, sense unknown

Shear band, generation unknown, normal, dextral, reverse

Linear Structures

Fold axis (unknown symmetry): generation unknown, 2

Fold axis (symmetrical): generation unknown, 2

Fold axis (b-symmetry): generation unknown, 1, 2

Fold axis (b-symmetry): generation unknown, 2, 3

Intersection lineation: generation 1, 2

L-fabric: generation unknown, 1, 2

Mineral lineation; rodding

Domain boundary

Fault: defined, approximate

Geological contact: defined, approximate*, underwater*

Limit of mapping

* Some contacts are defined according to residual total field aeromagnetic anomalies (Coyte and Kiss, 2008)

Mineral Occurrence

Azu - azurite

Bs - barroite

Cc - chalcocite

Gp - garnet

Mgt - magnetite

Mic - malachite

Py - pyrite

Ttn - titanite

Building

Tower

Light road

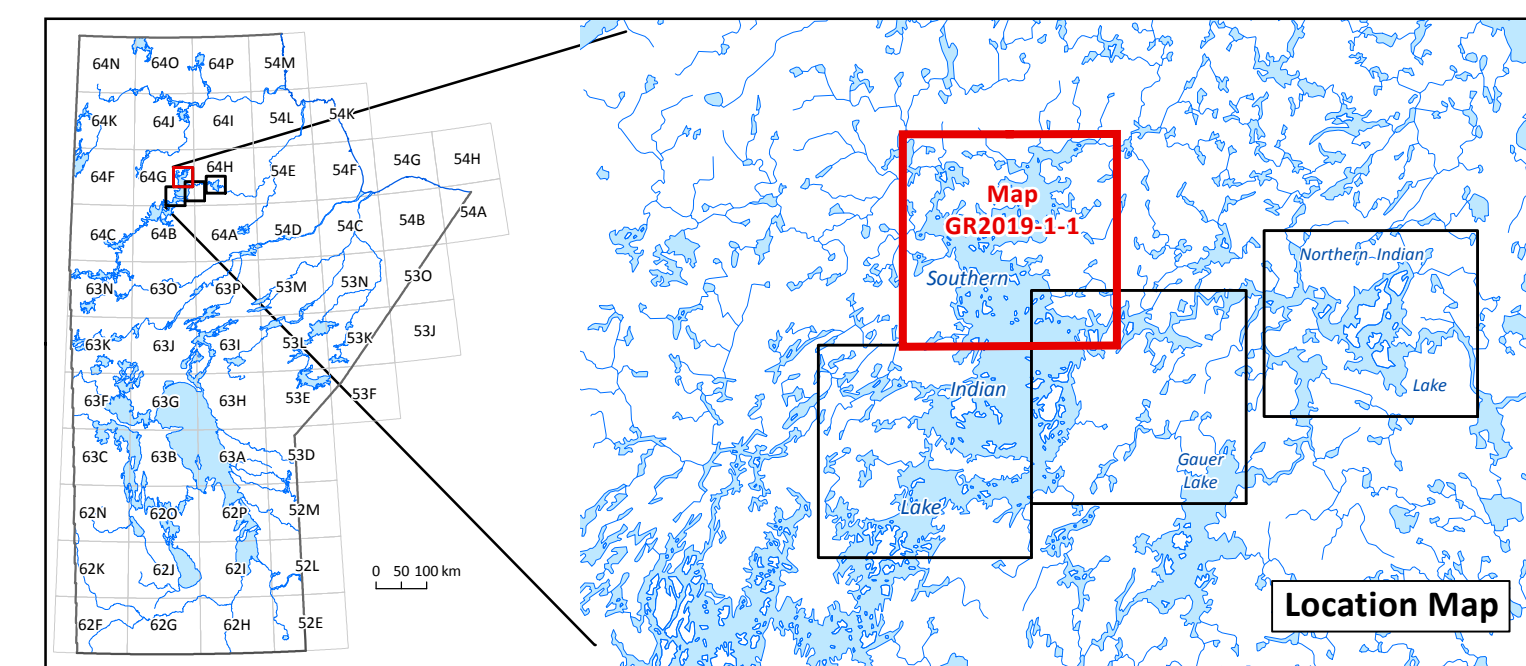
Trail

Runway

North arrow

Map GR2019-1-1

Bedrock geology of the Southern Indian Lake area (north), Manitoba (parts of NTS 64G7-10)



Geology by T. Martins (2015) and P.D. Kremer (2009)

Cartography by M.E. McFarlane, S.K.Y. Lee and L.E. Chackowsky

Suggested reference:

Martins, T. and Kremer, P.D. 2019: Bedrock geology of the Southern Indian Lake area (north), Manitoba (parts of NTS 64G7-10); in *Geology of the Southern Indian Lake area, north-central Manitoba* (NTS 64G1, 2, 7-10, 64H3-6); Manitoba Growth, Enterprise and Trade, Manitoba Geological Survey, Geoscientific Report GR2019-1, Map GR2019-1-1 of 4 maps, scale 1:50 000.

References:

Coyte, M. and Kiss, F. 2008: Partridge Breast Lake aeromagnetic survey, Manitoba; Geological Survey of Canada, Open Files 5922 to 5929 and Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Open Files OF2008-15 to OF2008-30, scale 1:50 000.

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Martins, T. and McFarlane, C.R.M. 2016: Evidence of juvenile-arc magmatism at Northern Indian Lake: implications for base-metal exploration in north-central Manitoba (parts of NTS 64H3, 5, 6); in *Report of Activities 2016*, Manitoba Growth, Enterprise and Trade, Manitoba Geological Survey, p. 133-141.

Ray, G.E. and Wanless, R.K. 1980: The age and geological history of the Wollaston, Peter Lake and Rottenstone domains in northern Saskatchewan; *Canadian Journal of Earth Sciences*, v. 17, p. 333-347.

Rayner, N. and Corrigan, D. 2004: Uranium-lead geochronological results from the Churchill River-Southern Indian Lake transect, northern Manitoba; *Geological Survey of Canada, Current Research 2004-F1*, 14 p.

Published by:

Manitoba Growth, Enterprise and Trade, Manitoba Geological Survey, 2019

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360-1395 Ellice Avenue

Winnipeg, MB R3G 3P2 Canada

Phone: 204-945-6569

Toll free: 1-800-223-5215

Email: mineinfo@growth.ca

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