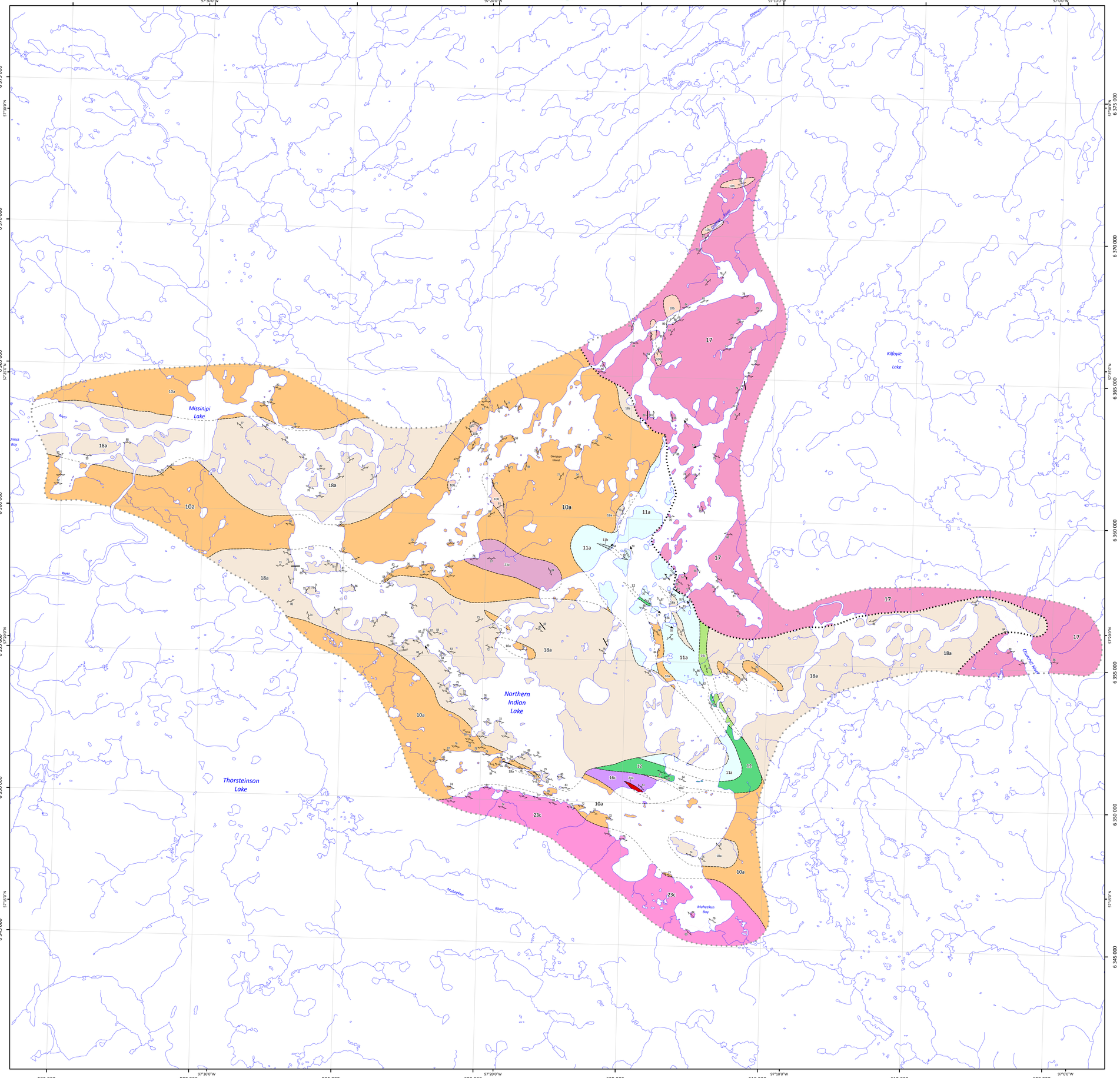
585 000 590 000 595 000 600 000 605 000 610 000 615 000 620 000

97°30'0"W 97°20'0"W 97°10'0"W 97°0'0"W

57°30'0"N 57°25'0"N 57°20'0"N 57°15'0"N

6 375 000 6 370 000 6 365 000 6 360 000 6 355 000 6 350 000 6 345 000



NAD 83 UTM Zone 14

Scale 1:50 000

0 2.5 5 10

kilometres

Legend

Mesoproterozoic rocks

- Mackenzie dikes (unit 25)

Paleoproterozoic rocks

- **24** Granitic pegmatite (ca. 1773 Ma)
  - **24a** a) K-feldspar or albite dominant; locally garnet, beryl, tourmaline, magnetite, apatite, pyrite, chalcopyrite, bornite and chalcocite bearing
  - **24b** b) albite dominant (alaskite)
- **23** Biotite granite, pink monzogranite and other K-feldspar–rich granitoids
  - **23a** a) biotite granitic rocks
  - **23b** b) pink monzogranite
  - **23c** c) porphyritic K-feldspar granite
- **22** Thorsteinson Lake pluton (ca. 1829 Ma), monzogranite: locally fluorite bearing
- **21** Late intrusive rocks (ca. 1829 Ma; Rayner and Corrigan, 2004)
  - **21a** a) K-feldspar–megacrystic monzogranite: pink; magnetic; biotite±hornblende bearing
  - **21b** b) gabbro, diorite and quartz diorite

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

- **20** Magnetite-bearing sedimentary rocks
  - **20a** a) feldspathic arenite and lesser quartzite
  - **20b** b) polymictic conglomerate

Strawberry Island assemblage (>1860 to 1849 Ma)

- **19** Magnetiferous sedimentary rocks
  - **19a** a) conglomerate: polymictic, clast supported with arkosic sandstone matrix
  - **19b** b) quartz and feldspathic arenite: well-bedded

Granite-granodiorite-tonalite (ca. 1849 Ma)

- **18** Granite, granodiorite and tonalite
  - **18a** a) tonalite-granodiorite: locally grey to buff; biotite±hornblende bearing; locally magnetiferous with biotite aggregates
  - **18b** b) gneissic tonalite: locally plagioclase phyric
  - **18c** c) megacrystic granite
  - **18d** d) 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** a) leucodiorite, quartz diorite; dark grey; magnetiferous
  - **16b** b) diorite: dark grey; hornblende phyric ±biotite aggregates
  - **16c** c) gabbro and leucogabbro
  - **16d** d) pyroxenite dikes and sills

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

- **15** Greywacke, mudstone and polymictic conglomerate; locally interbedded with units 13, 14, and 16, and magnetiferous with ±muscovite, staurolite, andalusite and sillimanite
  - **15a** a) greywacke and mudstone: weakly magnetiferous, muscovite bearing ±sillimanite, staurolite, andalusite, garnet
  - **15b** b) polymictic conglomerate
- **14** Mafic to intermediate volcaniclastic and epiclastic rocks with minor flows
  - **14a** a) andesite
  - **14b** b) mafic tuff and epiclastic rocks: hornblende phyric
  - **14c** c) volcanic conglomerate: heterolithic, clast supported
- **13** Intermediate to felsic volcanic rocks: tuff and resedimented tuff
  - **13a** a) dacite
  - **13b** b) rhyolite: quartz phyric and quartz-feldspar phyric
- **12** Massive and pillowed amygdaloidal basalt: locally with minor silicate- and sulphide-facies iron formation
- **11** Feldspathic and aluminous migmatitic greywacke, minor conglomerate and calcsilicate
  - **11a** a) psammite: grey; massive to crudely bedded; locally with sulphide-facies iron formation
  - **11b** b) pelite: migmatitic, foliated; contains garnet and sillimanite; locally with sulphide-facies iron formation
  - **11c** c) conglomerate
  - **11d** d) calcsilicate

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

- **10** Felsic to intermediate intrusive rocks
  - **10a** a) granodiorite: strongly foliated with metasedimentary and gabbroic xenoliths
  - **10b** b) quartz monzonite to quartz diorite: porphyritic; biotite±hornblende

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

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

Pukatawakan Bay assemblage (>1988 to 1890 Ma)

- **8** Intermediate, mafic and ultramafic rocks
  - **8a** a) gabbro, locally diabase, rare quartz diorite
  - **8b** b) gabbro with lesser gabbronorite and anorthositic leucogabbro
  - **8c** c) peridotite
- **7** Psammitic 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 migmatitic with rafts of paragneiss
- **2** Pelitic to quartzofeldspathic migmatitic paragneiss: rare volcanic interlayers

Archean rocks

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

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, dextral
- Shear zone: sense of movement unknown, normal, dextral, reverse

Linear Structures

- Fold axis (unknown symmetry): generation unknown, 2
- Fold axis (symmetrical): generation unknown, 2
- Fold axis (s-asymmetry): generation unknown, 1, 2
- Fold axis (z-asymmetry): 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

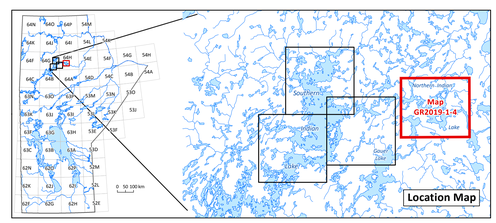
* Some contacts are defined according to residual total field aeromagnetic anomalies (Coyle and Kiss, 2008)

- Mineral Occurrence
  - Azu - azurite
  - Bn - bornite
  - Cc - chalcocite
  - Cp - chalcopyrite
  - Grt - garnet
  - Mgt - magnetite
  - Mlc - malachite
  - Py - pyrite
  - Ttn - titanite
- Building
- Tower
- Light road
- Trail
- Runway

N

Map GR2019-1-4

Bedrock geology of the Northern Indian Lake area, Manitoba (parts of NTS 64H3, 5–7)



Geology by T. Martins (2014) and P.D. Kremer (2014)

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

Suggested reference:

Martins, T. and Kremer, P.D. 2019: Bedrock geology of the Northern Indian Lake area, Manitoba (parts of NTS 64H3, 5–7); *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 GR2019-1-4 of 4 maps, scale 1:50 000.

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Coyle, 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.

Kremer, P.D., Rayner, N. and Corkery, M.T. 2009: New results from geological mapping in the west-central and northeastern portions of Southern Indian Lake, Manitoba (parts of NTS 64G1, 2, 8, 64H4, 5); *in* Report of Activities 2009, Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, p. 94–107.

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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.

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