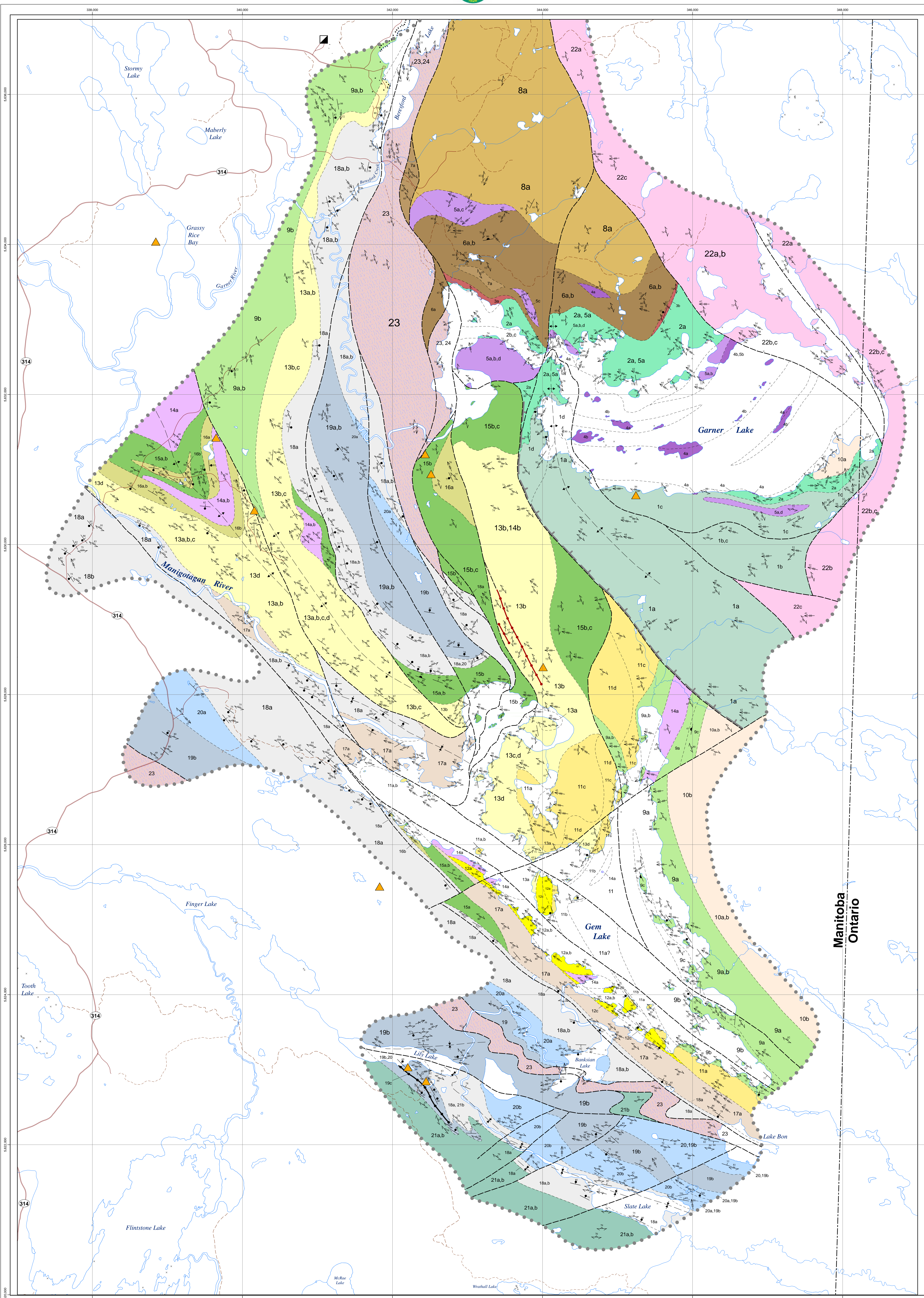




Geology and structure of the Garner-Gem lakes area, Rice Lake greenstone belt, Manitoba (NTS 52L11 and 14)



Legend

- 24 Gabbro, diorite, leucocratic, post-tectonic dikes
 - 23 Tectonite, phyllonite, mylonite; variable chlorite-sericite = ankerite alteration
 - 22 Intrusive rocks
 - 22a Quartz diorite, granodiorite and granite; foliated
 - 22b Felsic orthogneiss, with minor amphibolite enclaves; likely derived from unit 22a
 - 22c Mafic orthogneiss; includes serpentinized peridotite or pyroxenite; likely derived from units 4 and 5
- EDMUNDS ASSEMBLAGE (ca. 2705-2710 Ma)**
- 21 Basalt and basaltic andesite
 - 21a Pillowed flows, derived tectonite
 - 21b Mafic volcaniclastic rocks, derived tectonite
 - 20 Conglomerate
 - 20a Polymictic
 - 20b Monolithic dacite
 - 19 Subarkose, quartz greywacke
 - 19a Massive, with minor pebble lags and mudstone beds
 - 19b Thick-bedded, with interbeds of pebble to cobble conglomerate and mudstone
 - 19c Magnetite-chert iron formation
 - 18 Greywacke-mudstone turbidite
 - 18a Thin-bedded, with chert interbeds; beds typically <10 cm
 - 18b Thick-bedded, with pebble conglomerate interbeds; beds typically 5-30 cm
- GEM ASSEMBLAGE (ca. 2720 Ma)**
- 17 Buff to white to light grey dacite; feldspar-phyric
 - 17a Massive crystalline tuff, with minor monolithic dacite breccia, tuff-breccia, lapilli tuff
 - 16 Bedded epiclastic rocks
 - 16a Feldspathic wacke and mudstone; minor black chert and pebble conglomerate
 - 16b Heterolithic cobble and boulder conglomerate, minor sandstone interbeds
 - 15 Basalt and basaltic andesite
 - 15a Pillowed and massive flows, with minor breccia, tuff-breccia, lapilli tuff; quartz amygdaloidal
 - 15b Monolithic breccia, tuff-breccia, lapilli tuff, typically plagioclase-phyric
 - 15c Heterolithic breccia, composed mainly of basalt and andesite clasts
 - 14 Gabbro, diorite
 - 14a Equigranular gabbro; locally amygdaloidal
 - 14b Plagioclase porphyritic gabbro, diorite
 - 13 Buff to grey dacite and rhyolite; sparsely quartz- and feldspar-phyric
 - 13a Dark grey, massive and flow-banded dacite and rhyolite flows
 - 13b Buff to grey rhyolite breccia, tuff-breccia, lapilli tuff, tuff
 - 13c Bedded, monolithic lapilli tuff, tuff-breccia
 - 13d Heterolithic lapillitization and lapilli tuff, with minor tuff-breccia; typically includes basalt lapilli
 - 12 Grey to black rhyolite; aphyric
 - 12a Dark grey, flow-banded rhyolite; derived monolithic breccia, tuff-breccia
 - 12b Rhyolite lapilli tuff and tuff-breccia; contains pumice lapilli
 - 12c Bedded epiclastic rocks
 - 11 Buff to white to pink rhyolite; quartz-phyric to aphyric
 - 11a Massive, aphyric flows; derived monolithic breccia, tuff-breccia
 - 11b Bedded, heterolithic epiclastic rocks; minor black chert; commonly contains amygdaloidal basalt clasts
 - 11c Quartz-phyric breccia, tuff-breccia; contains collapsed pumice lapilli
 - 11d Intrusion breccia; possible cryptodome
 - 10 Leucogranite
 - 10a Equigranular biotite leucogranite
 - 10b Quartz-feldspar porphyritic leucogranite
- BIDOU ASSEMBLAGE (ca. 2730 Ma)**
- 9 Intermediate to felsic volcanic and volcaniclastic rocks
 - 9a Dacite breccia, tuff-breccia, lapilli tuff; feldspar-phyric; locally heterolithic
 - 9b Pebbles to cobble volcanic conglomerate, minor feldspathic greywacke; mainly andesite and dacite clasts; locally well-bedded
 - 9c Pillowed andesite flows; amygdaloidal, sparsely feldspar-phyric
- GARNER ASSEMBLAGE (ca. 2870-2900 Ma)**
- Garner Lake extrusive complex (ca. 2870 Ma)**
- 8 Calcalkalic basalt and basaltic andesite
 - 8a Massive and pillowed flows, with minor flow breccia and iron formation
 - 7 Mg-tholeiitic basalt
 - 7a Massive and pillowed flows, with minor flow breccia and iron formation
 - 6 Ultramafic komatiite and komatiitic basalt
 - 6a Massive flows, with minor flow breccia and iron formation; includes local pillowed flows
 - 6b Spinifex textured komatiite
- Garner Lake intrusive complex (2870 Ma)**
- 5 Mafic intrusive rocks
 - 5a Leucocratic and melanocratic gabbro
 - 5b Minor pegmatitic gabbro
 - 5c Glomerophytic gabbro
 - 5d Hornblende diorite, quartz diorite, tonalite
 - 4 Ultramafic intrusive rocks
 - 4a Peridotite; serpentinized
 - 4b Pyroxenite
- Garner Narrows unit (ca. 2883-2898 Ma)**
- 3 Iron formation
 - 3a Magnetite-chert
 - 3b Siliceo-sulphidic
 - 2 Intermediate to felsic volcaniclastic rocks
 - 2a Dacite to rhyolite breccia, tuff-breccia, lapilli tuff and crystal tuff
 - 2b Minor andesite tuff-breccia
 - 2c Minor thin-bedded quartzite, carbonate, ferruginous argillite
 - 1 Heterolithic volcaniclastic and epiclastic rocks
 - 1a Heterolithic breccia, tuff-breccia; mainly mafic and intermediate volcanic clasts
 - 1b Rhyolite crystal tuff; massive to faintly layered
 - 1c Heterolithic pebble and cobble conglomerate
 - 1d Thin-bedded feldspathic greywacke, mudstone

Symbols

- Primary layering**
- Bedding: tops known
 - Bedding: tops overturned
 - Bedding: tops unknown
 - Pillows: tops known
- Planar fabric**
- Generation unknown
 - Generation 3
 - Generation 4
 - Generation 5
- Linear fabric**
- Generation 3
 - Generation 5
- Mineral deposit**
- Gold occurrence
 - Past-producing mine
- Geological contact**
- Approximate
 - Shear zone or fault
 - Hornblende-garnet isograd
 - Iron formation
 - Quartz vein
- Fold axial trace**
- Anticline: approximate
 - Syncline: approximate
- Other features**
- Road: gravel, 2 lanes or less
 - Road: unclassified
 - Cart track
 - Trail
 - Limit of mapping

Geology by: S.D. Anderson (2002-2006)

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This map is a provisional summary of work carried out during the summer field season and is produced directly from the geologist's manuscript. It is not to be regarded as a final interpretation of the geology of the area.

SUGGESTED REFERENCE
Anderson, S.D. 2006. Geology and structure of the Garner-Gem lakes area, Rice Lake greenstone belt, Manitoba (NTS 52L11 and 14); Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Preliminary Map PMAP2006-7, scale 1:20,000.

