



Bedrock geology of the Armstrong Lake area, central Manitoba (parts of NTS 63P10,11)

Legend

Proterozoic post-D₂ rocks

13 Gabbro: dark green-grey, coarse grained and massive; contains 30–40% plagioclase and varying proportions of orthopyroxene, clinopyroxene and hornblende

Archean post-D₁–Pre-D₂ rocks

12 Pegmatitic granite: pink to white, coarse to very coarse grained and foliated to protomylonitic; contains trace to 3% garnet and 2–3% biotite; contains xenoliths of pelite, quartzite, tonalite gneiss and mafic rock

11 Enderbite: beige, coarse grained and foliated; contains 5–15% orthopyroxene with minor biotite; orthopyroxene forms equant 2–5 mm grains; contains up to 15% mafic, intermediate and tonalitic xenoliths

10 Granodiorite–monzogranite: white to pale pink, medium to coarse grained and foliated; contains trace to 3% biotite and trace to 5% garnet; schlieren and schollen of units 2a, 2b and 2c are common

9 Tonalite–granodiorite: white to light grey-pink, medium to coarse grained, foliated, massive to weakly gneissic and locally magnetic; typically leucocratic with varying proportions of biotite, orthopyroxene and local magnetite; exposures contain 10–30% quartz-rich leucosome

8 Diorite: green-grey, medium grained and foliated; contains 60–70% plagioclase and roughly equal amounts of orthopyroxene and clinopyroxene; exposures contain 20–30% plagioclase-rich leucosome, which could represent tectonic slivers or syn-depositional flows of mafic volcanic rock

Archean pre-D₁ gneissic rocks

7 Mafic dikes: dark green-grey to dark brown, medium grained, foliated and massive; contains varying proportions of orthopyroxene, clinopyroxene and hornblende with minor biotite and up to 15% plagioclase

6 Anorthosite: white to light grey, medium to coarse grained, foliated, weakly gneissic, and weakly magnetic; ranges from hornblende- and/or clinopyroxene-bearing anorthosite to leucogabbro; contains local plagioclase phenocrysts up to 2.5 cm across

5 Diorite: brown green to light green, medium to coarse grained, foliated and banded on a scale of 2–25 mm; contains 10–20% orthopyroxene, 10–30% clinopyroxene and local quartz; exposures contain variable amounts of tonalitic leucosome and rafts of mafic volcanic rocks

4 Tonalite: grey-brown, medium to coarse grained and foliated; contains 10–30% mafic minerals as varying proportions of biotite, hornblende and orthopyroxene; exposures contain 20–40% quartz-rich tonalitic leucosome; bands of unit 7 up to 1.5 m thick are common

3 Ultramafic rock: grey-green to dark green, medium to coarse grained, weakly foliated and massive to banded; consists largely of clinopyroxene and can contain up to 30% hornblende, 30% orthopyroxene and minor plagioclase; hornblende locally occurs as laminations 2–5 mm thick

Sedimentary rock package

a Pelite: white to light grey, coarse to very coarse grained, foliated to mylonitic and banded diatexite; consists of 30–50% white feldspar(s), 10–30% quartz, with variable proportions of cordierite, garnet, sillimanite and biotite; local bands of low-Al pelite are sillimanite- and cordierite-free and contain up to 7% orthopyroxene and 30% biotite; exposures are typically 50–60% leucosome; commonly contains discontinuous bands and rafts of units 2b and 2c

b Quartzite: grey to blue-grey, medium to coarse grained, foliated to mylonitic and banded on a 1–15 mm scale; quartz-rich with minor biotite and garnet and typically <20% feldspar; exposures are typically 15–30% leucosome; commonly interbanded with units 2a and 2c

c Massive iron formation: dark green to heavily gossan stained, medium to very coarse grained, weakly foliated and strongly magnetic in places; dominantly Fe-orthopyroxene with up to 50% garnet, 15% magnetite and variable but minor amounts of biotite, plagioclase and quartz; contains local bands of unit 7 at least 2 m thick

d Wacke: light grey to brown, medium grained, foliated and banded on a scale of 5–30 cm; contains 30–40% white feldspar(s), 30–40% quartz and roughly equal proportions of garnet, orthopyroxene and biotite; exposures are typically 20–30% leucosome; commonly interbanded with units 2a and 2b

e Laminated iron formation: reddish purple, medium to coarse grained, foliated and layered to laminated; consists of chert laminations separated by layers of garnet with 30–40% Fe-orthopyroxene; local gossan staining

Mafic volcanic rocks: brown-green to dark green, medium to coarse grained and foliated with weak to well developed banding on a scale of 5–15 mm; contains 50–60% plagioclase and variable proportions of orthopyroxene, clinopyroxene, hornblende and biotite; local garnet-bearing lenses; exposures are typically <20% leucosome

Symbols

- Fault: sinistral
- Fault: dextral
- Fold hinge: minor U, generation 2
- Fold hinge: minor Z, generation 2
- Foliation: generation unknown
- Foliation: generation 2
- Foliation: mylonitic
- Fracture
- Glacial striae
- Gneissosity: generation unknown
- Gneissosity: generation 1
- Stretching lineation
- Bedding: tops unknown
- Fault
- Contacts: approximate, assumed
- Limit of mapping
- Railway
- Mining-restricted area

Geology underlying the Fox Lake West 3 Reserve (mining-restricted area) is from Weber (1978).

REFERENCE:
Weber, W. 1978: Armstrong Lake (NTS 63P10); Manitoba Department of Mines, Resources and Environmental Management, Mineral Resources Division, Preliminary Map 1978U-1, scale 1:50 000.

Geology by: C.G. Couéslan
Cartography by: M. Timcoe

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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.

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SUGGESTED REFERENCE:
Couéslan, C.G. 2014: Bedrock geology of the Armstrong Lake area, central Manitoba (parts of NTS 63P10, 11); Manitoba Mineral Resources, Manitoba Geological Survey, Preliminary Map PMAP2014-1, scale 1:20 000.

