

# Geology of the Lac Aimée-Naosap Lake-Alberts Lake area, Manitoba

## Preliminary Map PMAP2002-1 (parts of NTS 63K13SE, 14SW)



### LEGEND

#### PRECAMBRIAN

#### POST 1.88 Ga INTRUSIVE ROCKS

- 12 Diabase, aphyric to plagioclase phyrlic
- 11 (a) granodiorite, tonalite (hornblende+biotite-bearing)
- (b) granodiorite, granite, aplite
- (c) felsite, plagioclase±quartz porphyry
- (d) quartz±plagioclase porphyry (2 mm-1cm)
- 10 (a) gabbro, amphibolite
- (b) hornblende (pyroxenite-derived)

#### AMISK COLLAGE

#### INTRUSIVE ROCKS: SYNVOLCANIC OR PENECONTEMPORANEOUS WITH 1.88 Ga VOLCANISM (may include <1.88 Ga intrusive rocks)

- 9 Mafic intrusive rocks
  - (a) gabbro, gabbronorite, hornblende (Batters Lake Sill)
  - (b) hornblende (North Aimée gabbro)
  - (c) gabbro
  - (d) leucogabbro, anorthositic gabbro
  - (e) diabase, plagioclase phyrlic
  - (f) diabase, pyroxene-phyric diabase
- 8 Felsite, felsic porphyry
  - (a) felsite
  - (b) plagioclase±quartz porphyry (1-6 mm)
- 7 Tonalite, quartz diorite; granodiorite, granite
  - (a) tonalite, leucotonalite, quartz diorite; minor diorite
  - (b) leucodiorite, quartz diorite; minor diorite
  - (c) granodiorite, granite
  - (d) aplite

#### VOLCANIC AND SEDIMENTARY ROCKS

- Lac Aimée and Saurdough Bay arc and arc-rift volcanic rocks; related turbidite-type sedimentary rocks
- 6 Volcanic-derived sedimentary rocks and reworked mafic tuff
  - (a) feldspathic greywacke, siltstone
  - (b) chert, cherty siltstone
  - (c) intermediate to siliceous siltstone
  - (d) argillite, argillaceous siltstone
  - (e) quartz-bearing greywacke, siltstone
  - (f) mafic greywacke
  - (g) cordierite schist, gneiss (±gamet)
  - (h) iron formation: chert and argillite, ±magnetite
- 5 Felsic volcanic and related intrusive rocks
  - (a) rhyolite, plagioclase±quartz phyrlic; minor felsic tuff, breccia and related intrusive rocks
  - (b) felsic tuff, lapilli tuff
  - (c) rhyolite breccia
  - (d) plagioclase±quartz porphyry (1-3 mm)
  - (e) rhyolite, aphyric
  - (f) dacite
- 4 Mafic to intermediate volcanic and related intrusive rocks; derived schist and gneiss
  - (a) basalt, basaltic andesite, aphyric to plagioclase phyrlic, pillowed to massive; minor related volcanic breccia, diabase and gabbro; (a<sub>1</sub>) basalt, pyroxene phyrlic; (a<sub>2</sub>) basalt breccia; (a<sub>3</sub>) basalt and related breccia, quartz-amygdaloidal
  - (b) mafic tuff, crystal tuff; minor lithic tuff and lapilli tuff
  - (c) intermediate to mafic heterolithic breccia, minor tuff
  - (d) intermediate tuff, crystal tuff
  - (e) pyroclastic breccia, felsic fragments
  - (f) pyroclastic breccia, mafic fragments
  - (g) mafic schist, gneiss and amphibolite (amphibole-chlorite±epidote)
  - (h) diabase, aphyric to porphyritic
  - (i) chlorite-carbonate schist
  - (j) andesite, pyroxene-bearing

- Animus Lake mafic volcanic rocks (arc-rift and back-arc basin basalt); minor related sedimentary rocks
- 3 (a) basalt, aphyric, pillowed to massive; minor related breccia and sparsely plagioclase-phyric basalt; (a<sub>1</sub>) basalt, plagioclase phyrlic
- (b) diabase, plagioclase phyrlic
- (c) mafic tuff
- (d) chlorite schist
- (e) iron formation: sulphide-bearing chlorite-sericite schist, siltstone, argillite and chert
- (f) intermediate to siliceous siltstone, feldspathic greywacke
- (g) intermediate to mafic crystal tuff, minor lapilli tuff
- (h) intermediate to mafic volcanic breccia, plagioclase phyrlic, quartz amygdaloidal (highly sheared)
- (i) Swordfish Lake metasedimentary unit: quartz-bearing feldspathic greywacke, siliceous to argillitic siltstone, argillite; minor intraformational pebble-conglomerate

- Fault contact -----
  - Tartan arc-type mafic volcanic rocks
  - 2 Basalt; aphyric to plagioclase phyrlic, pillowed to massive, commonly amygdaloidal
  - Fault contact -----
  - Mikanagan back-arc basin basalt
  - 1 Basalt, aphyric; minor variolite and plagioclase±pyroxene phyrlic basalt; related diabase and gabbro
- Notes:
1. Unit 3(i) (Swordfish Lake metasedimentary unit; Gilbert, 1990) may postdate 1.88 Ga volcanic rocks.
  2. Unit 6 may include sedimentary rocks that postdate 1.9 Ga volcanic rocks.
  3. The relative ages of units 7, 8 and 9 are not determined.
  4. The relative ages of units 10, 11 and 12 are not determined.
  5. The geology of the area south and southwest of Naosap Lake is, in part, after Kalliokoski (1949) and Bateman and Harrison (1945).
  6. The geology of the area south of Alberts Lake is after Gale and Dabek (2002).

References:

Bateman, J.D. and Harrison, J.M. 1945: Mikanagan Lake; Geological Survey of Canada, Map 832A; scale 1:63 360, with marginal notes

Gale, G.H. and Dabek, L.B. 2002: Geology of the Baker Paton Complex, Flin Flon, Manitoba (parts of NTS areas 63K12, 13); Manitoba Industry, Trade and Mines, Manitoba Geological Survey, Geoscientific Map MAF2002-1

Gilbert, H.P. 1990: Geological investigations in the Tartan Lake-Mikanagan Lake area; in Report of Activities, 1990, Manitoba Energy and Mines, Minerals Division, p.20-26

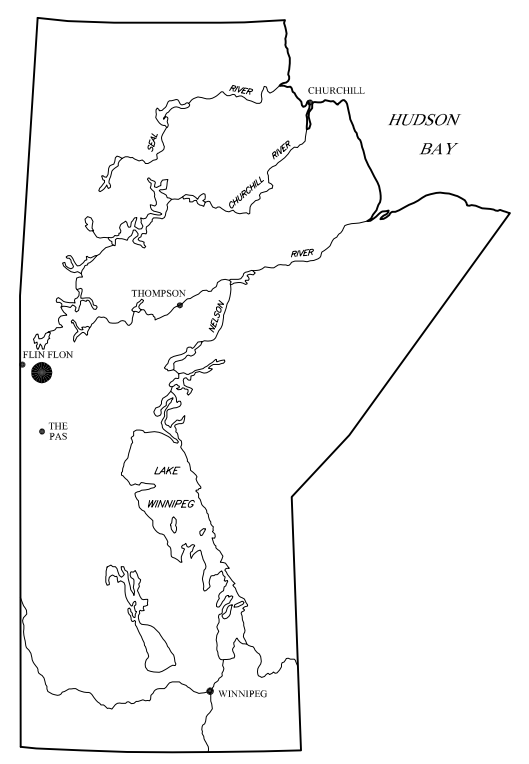
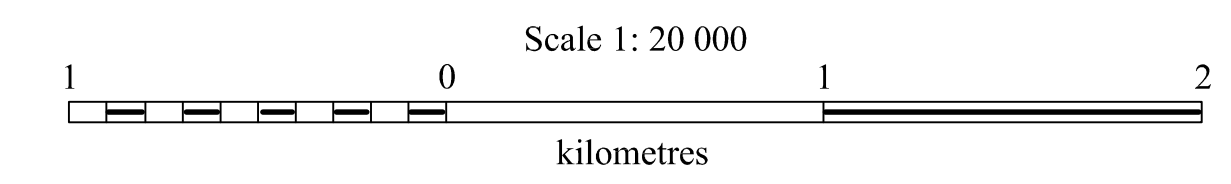
Kalliokoski, J. 1949: Weldon Bay; Geological Survey of Canada Map 1020A, scale 1: 63 360, with marginal notes.

Geology by: H.P. Gilbert, 1996, 1997, 2002

Cartography by: M. Timcoe and E. Truman

Supersedes Preliminary Map 1997F-1

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- ### Symbols
- |  |   |  |  |  |                |
|--|---|--|--|--|----------------|
|  | Geological contact; approximate, gradational, assumed |  | Axial trace of first generation anticline (overturned) |  | Mineralization |
|  | Bedding; top unknown, known                           |  | Axial trace of first generation syncline (overturned)  |  | pyrite         |
|  | Pillows; top unknown, known                           |  | Axial trace of second generation anticline (upright)   |  | CP             |
|  | Igneous layering; top unknown, known                  |  | Axial trace of second generation syncline (upright)    |  | PH             |
|  | Flow contact; top unknown, known                      |  | Axial trace of second generation syncline (overturned) |  | SH             |
|  | Foliation; first generation, third generation         |  | Fault, inferred  |  | ML             |
|  | L-fabric  |  | Shear zone   |  | Alteration     |
|  | Fold axis   |  | Fault breccia  |  | ⊙              |
|  | Z, S, U folds   |  | Provincial road, gravel                                |  | ⊙              |
|  | Axial plane   |  | Trail  |  | ⊙              |
|  |   |  | Unofficial name  |  | ⊙              |

Suggested reference: Gilbert, H.P. 2002: Geology of the Lac Aimée-Naosap Lake-Alberts Lake area, Manitoba (parts of NTS 63K13SE, 14SW); Manitoba Industry, Trade and Mines, Manitoba Geological Survey, Preliminary Map PMAP2002-1, scale 1:20 000.

