Manitoba
Energy and Mines

LEGEND

PHANEROZOIC

PALEOZOIC

HUDSON BAY BASIN

22 — Ordovician limestone and sandstone of the Portage Chute Formation - Bad Cache Rapids Group

PRECAMBRIAN

PROTEROZOIC

CHURCHILL/SUPERIOR BOUNDARY

21 — Cataclastic rocks and mylonites of unknown origin derived from rocks of both Superior and Churchill Provinces

21a — Layered mylonites

21b — Cataclastic granitic to tonalitic gneisses of unknown origin

21c — Cataclastic amphibolite and garnet amphibolite of unknown origin

CHURCHILL PROVINCE

Intrusive Rocks

20 — Diabase dykes

19 — Granite; massive, white to pink, biotite-bearing

18 — Tonalite to granite; 18a) tonalite-granodiorite; massive to foliated; 18b) granodiorite-granite

Sickle Metamorphic Suite

17 — Arkosic metatexite; units 13, 14 and 15 undivided

16 — Metagreywacke; garnet-cordierite-sillimanite-magnetite gneiss

15 — Meta-arkose; massive to well layered, sillimanite-bearing gneiss; 15a) migmatite arkose derived

14 — Feldspathic greywacke-psammite gneiss; biotite-magnetite gneiss; 14a) delicately layered feldspathic greywacke gneiss, locally iron-rich; 14b) migmatite, greywacke derived

13 — Hornblende-plagioclase metagreywacke; massive to well layered; 13a) polymictic metaconglomerate; 13b) hornblende-plagioclase migmatite, greywacke derived

Burntwood River Metamorphic Suite

12 — Psammitic gneiss; layered, magnetite-garnet-biotite gneiss

11 — Amphibolite; 11a) layered hornblende-diopside amphibolite; 11b) massively layered amphibolite

10 — Greywacke gneiss and migmatites; units 10a, 10c and 10d undivided

10a — Psammitic gneiss, with minor semi-pelitic to pelitic gneiss layers; locally sillimanite-bearing

10b — Arkosic gneiss; interlayered with 10a

10c — Greywacke gneiss; interlayered psammitic to pelitic metasedimentary rocks

10d — Pelitic greywacke gneiss

SUPERIOR PROVINCE

PROTEROZOIC (INCLUDING HUDSONIAN TECTONITES)

9 — *Tectonic complex; well foliated and discontinuously layered* gneiss, comprising reworked Kenoran migmatites and early intrusive rocks.

9a — Granodiorite gneiss; highly foliated, and thinly laminated gneiss derived from unit 5

8 — Granite; 8a) dykes, sills and small irregular bodies of pink biotite granite, pegmatite and aplite; 8b) Fox Lake granite

7 — Diabase dykes

ARCHEAN

6 — Granite, granodiorite; 6a) dykes, sills and irregular bodies of massive to foliated grey granite; 6b) Gull Lake granite

5 — Hornblende and hornblende-biotite gneiss; comprising mobilized and injected layered gneiss and agmatites (derived from units 1, 2 and 3) with 10 to 75% tonalite to granodiorite

4 — Tonalite-granodiorite, with hornblende clots, containing 0 to 25% inclusions of units 1 and 3

3 — Mafic to ultramafic dykes; trains of recrystallized, tremolite-chlorite-talc-biotite bearing ultramafic boudins within units 1, 4, 5 and 8

2 — Anorthosite complex

2a — Anorthosite

2b — Anorthositic gabbro gneiss

1 — Amphibolite and metagabbro; **1a) garnet amphibolite and garnet—diopside—hornblende—plagioclase granofels; 1b) amphibolite and hornblende—diopside—plagioclase ± (hypersthene) granofels; 1c) mesocratic to leucocratic plagioclase—hornblende-quartz (±biotite) granofels and gneiss**

SYMBOLS

- Geological contact (defined, approximate, under water, located by airborne magnetic survey)
- Foliation and parallel primary layering (vertical, inclined, dip unknown)
- Foliation and parallel metamorphic layering (vertical, inclined, dip unknown)
- Metamorphic layering (vertical, inclined, dip unknown)
- Inclusion layering (vertical, inclined, dip unknown)
- Foliation or schistosity (vertical, inclined, dip unknown)
- Second generation foliation or schistosity (vertical, inclined, dip unknown)
- Cataclastic foliation and/or parallel mylonitic layering (vertical, inclined, dip unknown)

Linear structures

- Mineral lineation (plunge indicated)
- Microcrenulation (plunge indicated)
- Deformed clasts (plunge indicated)

Minor folds

- Axis (plunge indicated)
- Axial plane (inclined, vertical)
- Fold symmetry (symmetrical, S-shaped, Z-shaped)
- Zones of cataclasis associated with the Churchill/Superior boundary
- **Minor faults (defined, approximate)**
- Major fold axis of first generation (anticline, syncline)
- **Major fold axis of second generation (anticline, syncline)**
- Isolated outcrop
- Original shoreline
- Present shoreline (limit of Kettle Rapids Generating Station Forebay (1972), Long Spruce Generating Station forebay (1978)
- Hydro dam axis
- Earth fill dykes

To accompany Geological Report GR82—1

Geology by: I. HAUGH, 1968; M.T. CORKERY, 1975

Compiled by: M.T. CORKERY

Cartography by: E. TRUMAN

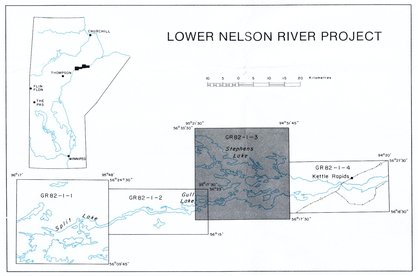
STRATIGRAPHIC NOTE

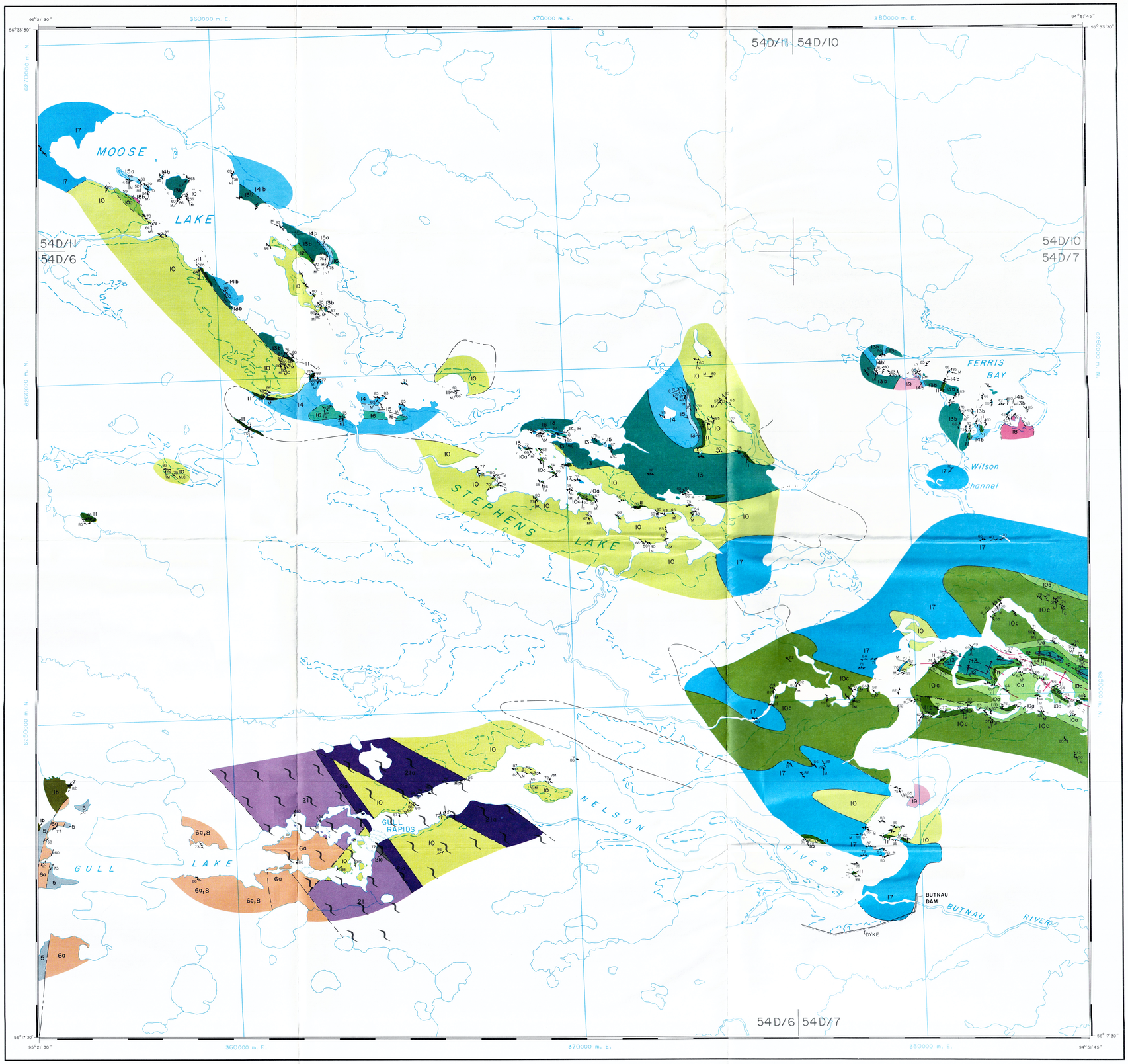
Metasedimentary rocks of the Sickle and Burntwood Metamorphic Suites, units 10 through 16, are in stratigraphic order; however, sub-units within each group may not represent a stratigraphic sequence.

The age relationship of Churchill Province intrusive rocks, units 18 and 19, is not certain.

The approximate magnetic declination at the centre of the area is 3°09'E (1982) and is decreasing by 14.3' annually.

INDEX MAP





Scale 1:50 000

KILOMETRES 1 0 1 2 3 4 KILOMETRES
MILES 1 0 1 2 3 MILES

STEPHENS LAKE

MAP GR 82-1-3