

- CRETACEOUS**
- UPPER CRETACEOUS**
 - Ku4** RIDING MOUNTAIN FORMATION: shale. Includes ODANAH and MILLWOOD MEMBERS
 - Ku3** VERMILION RIVER FORMATION: shale, bentonite. Includes PEMBINA, BOYNE, and MORDEN MEMBERS
 - Ku2** FAVEL FORMATION: shale, limestone, bentonite. Includes ASSINIBOINE and KELD MEMBERS
 - LOWER (?) AND UPPER CRETACEOUS**
 - Ku1** ASHVILLE FORMATION: shale, silt, sand, limestone, bentonite
 - LOWER CRETACEOUS**
 - Kl** SWAN RIVER FORMATION: sand, sandstone, glauconitic sand, shale, clay
- DEVONIAN**
- MIDDLE AND UPPER DEVONIAN MANITOBA GROUP**
 - Dmu** Dolomite, limestone, shale. Includes SOURIS RIVER and DAWSON BAY FORMATIONS
 - MIDDLE DEVONIAN**
 - Dm** WINNIPEGOSIS, ELM POINT, and ASHERN FORMATIONS: dolomite, limestone
- SILURIAN**
- MIDDLE SILURIAN INTERLAKE GROUP (Sm1-Sm4)**
 - Sm6** CEDAR LAKE FORMATION: dolomite
 - Sm5** EAST ARM FORMATION: dolomite
 - Sm4** ATKAMEG FORMATION: dolomite
 - Sm3** MOOSE LAKE FORMATION: dolomite
 - Sm2** INWOOD FORMATION: dolomite
 - Sm1** FISHER BRANCH FORMATION: dolomite
- ORDOVICIAN**
- UPPER ORDOVICIAN**
 - Ou1** STONY MOUNTAIN, RED RIVER, and WINNIPEG FORMATIONS: calcareous shale, dolomite, dolomitic limestone, sandstone and shale. Stony Mountain Formation includes ELINTON, PENITENTIARY, and GUNN MEMBERS. Red River Formation includes CAT HEAD and DOG HEAD MEMBERS

- LEGEND**
- CHURCHILL PROVINCE (Ae1-Ae13)**
- Ae10-13** Granite, granodiorite, quartz diorite, with gneissic and porphyritic equivalents. Some may be older than Ae4 and some equivalent to Ae5. Includes small basic and ultrabasic intrusions and small bodies of Ae1 and Ae2
 - Ae11** Syntectonic intrusions, where separated Ae12. Post-tectonic intrusions, where separated Ae13. Mainly gneisses
 - Ae9** Basic and ultrabasic intrusions, mainly gabbro, peridotite and derived gneisses and schists
 - Ae8** KISEYNEW COMPLEX. Ae5. Undivided gneisses, schists, and granitic intrusions
 - Ae4** MISSISSIPPI GROUP. Arkose, greywacke, quartzite, conglomerate; minor argillite, slate, chert, and volcanic rocks; derived gneisses and schists. Includes SHERRIDON, NOKOMIS, and ? SNOW GROUPS
 - Ae5-8** KISEYNEW COMPLEX. Ae5. Undivided gneisses, schists, and granitic intrusions
 - Ae7** Mainly granitized gneisses and schists
 - Ae6** Mainly hornblende-plagioclase gneiss
 - Ae3** Granite porphyry
 - Ae2** MISSISSIPPI GROUP (see Ae4). Greywacke, quartzite, arkose, conglomerate, slate, argillite, tuff, and volcanic rocks and schists. Includes WEKUSKO and LAGUNA GROUPS in part. Includes minor amounts of Ae1
 - Ae1** Andesite, basalt, rhyolite, dacite, trachyte, tuff, breccia, agglomerate, quartz porphyry, gneiss; derived gneisses and schists. Includes WEKUSKO and LAGUNA GROUPS in part. Includes minor amounts of Ae2
- TRANSITIONAL ROCKS (T1-T4)**
- T3,4** T3. Gneissic granite, granodiorite, and quartz diorite
 - T4** Granite, mainly massive
 - T2** ASSEAN LAKE GROUP. Andesite, basalt, tuff, quartzite, arkose, greywacke and derived schists
 - T1** Quartz-mica gneiss, gneissic quartzite, garnet-mica gneiss, quartz-hornblende gneiss
- SUPERIOR PROVINCE (A1-Ae)**
- A5-8** A5. Granodiorite, quartz diorite
 - A6** Mainly granite
 - A7** Undivided granite, granodiorite, quartz diorite, gneiss and schist; includes small bodies of basic and ultrabasic rocks
 - A8** Includes hornblende-biotite and biotite gneisses and biotite-chlorite schist
 - A4** CROSS LAKE GROUP. Quartzite, arkose, greywacke, argillite, conglomerate, gnt. derived injection breccia and paragneiss
 - A2** Quartzite, greywacke, conglomerate, argillite, iron formation, and derived schists and gneisses. Includes part of HAYES RIVER GROUP
 - A1** Andesite, basalt, dacite, agglomerate, tuff; derived schists and gneisses. Includes part of HAYES RIVER GROUP
 - A3** Undivided A1 and A2
- PRINCIPAL MINES AND INDUSTRIAL MINERAL OPERATIONS**
1. Prince Albert (closed) Au
 2. Birch Lake (closed) Cu
 3. Coronation Cu, Au, Ag
 4. Flin Flon Cu, Zn, Au, Ag
 5. Mandy (closed) Cu, Au, Ag, Zn
 6. Schist Lake Cu, Zn
 7. Cuprus (closed) Cu, Zn
 8. North Star & Don Jon (closed) Cu
 9. Sherritt Gordon (closed) Cu, Zn, Au, Ag
 10. Chisel Lake Zn, Pb, Cu, Au, Ag
 11. Nor-Acme (closed) Au
 12. Stall Lake Cu, Zn, Au, Ag
 13. Laguna (closed) Au
 14. Osborne Lake (in prep.) Cu, Zn
 15. Thompson Ni, Cu, Au, Ag, Pt
 16. Saskatchewan Cement Company High-calcium limestone

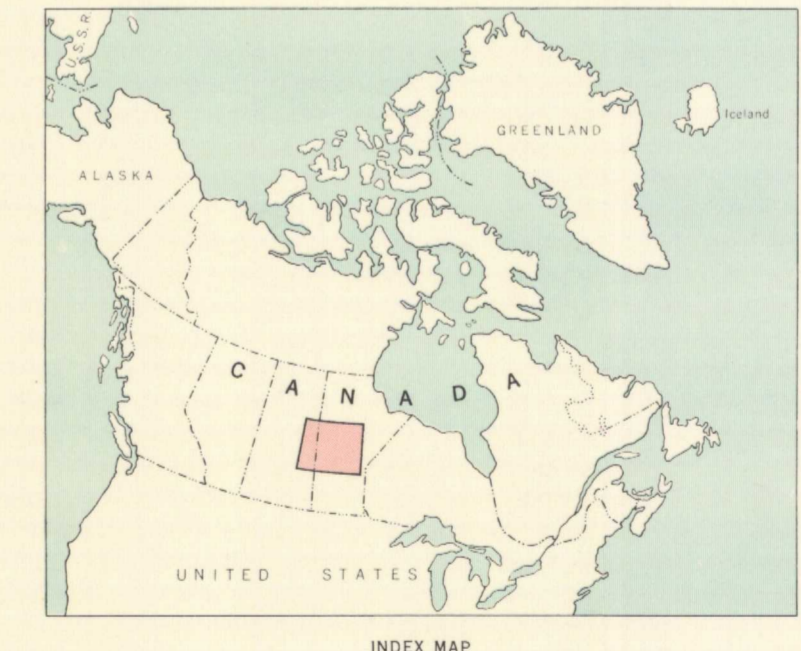
Geological boundary (defined or approximate)
 Geological boundary (inferred or gradational)
 Fault (defined)
 Fault (approximate or inferred)
 Mine
 Industrial mineral operation

Geology compiled by A. H. Lang, 1961, from maps and reports published by the Geological Survey of Canada, the Manitoba Department of Mines and Natural Resources, the Saskatchewan Department of Mineral Resources, and other literature

Base-map from Map 2183, "Carrot River" by the Surveys and Mapping Branch, 1952, with minor revisions, 1964

MINERAL SYMBOLS

Copper	Cu	Nickel	Ni	Zinc	Zn
Gold	Au	Platinum	Pt		
Lead	Pb	Silver	Ag		



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MAP 1164A
GEOLOGY
CARROT RIVER
MANITOBA-SASKATCHEWAN

Scale 1:1,000,000
1 inch to 15.78 miles

Miles 0 20 40 60
Kilometres 0 25 50 75 100