

- ### LEGEND
- PHANEROZOIC**
- CENOZOIC**
- QUATERNARY**
- RECENT**
- Lake, stream and wetland deposits
- PLEISTOCENE**
- Glacial, glaciofluvial and glaciolacustrine deposits; sand, gravel, clay, till
- UNCONFORMITY**
- PRECAMBRIAN**
- PROTEROZOIC**
- MESOPROTEROZOIC**
- 11 Mafic Intrusions (Sudbury Swarm)**
- 11a* Diabase; medium grained, equigranular
11b* Diabase; porphyritic, plagioclase phenocrysts
- INTRUSIVE CONTACT**
- PALEOPROTEROZOIC**
- HURONIAN SUPERGROUP**
- Cobalt Group**
- 10 Gowanda Formation**
- 10a Conglomerate; matrix to clast supported, polymictic
10b Sandstone and arkose
10c Siltstone and argillite
10d Wacke
- UNCONFORMITY**
- 9 Mafic Intrusions (Diabase Dikes)**
- 9a Diabase; <1% plagioclase phenocrysts (Matachewan swarm)
9b Diabase; porphyritic, plagioclase phenocrysts (Matachewan swarm)
9c Diabase; medium grained, equigranular, unknown affinity
- INTRUSIVE CONTACT**
- ARCHEAN**
- NEOARCHEAN**
- 8 Metamorphosed Alkaline Intermediate and Felsic Intrusive Rocks**
- 8a Syenite; equigranular
8b Quartz syenite, alkaline granite
8c Feldspar-porphyratic syenite; equant to lath feldspar phenocrysts from 0.5 to 1 cm in size
8d Quartz monzonite, quartz diorite
8e Schist
8f Feldspathic aplite dikes
- INTRUSIVE CONTACT**
- 7 Metamorphosed Alkaline Ultramafic and Mafic Intrusive Rocks**
- 7a Hornblende
7b Micas amphibole-bearing lamprophyre
7c Diorite, monzonite; white weathering, amphibole bearing
7d Alkali gabbro
7e Mafic syenite, mesocratic syenite
- INTRUSIVE CONTACT**
- 6 Metamorphosed Tholeiitic Ultramafic and Mafic Intrusive Rocks**
- 6a Peridotite, dunite; massive, cumulate textured*
6b Pyroxenite
6c Gabbro, leucogabbro
6d Diorite, quartz diorite
6e Anorthosite, anorthositic gabbro
- Clastic and Chemical Metasedimentary Rocks**
- 5a Conglomerate; clast supported, polymictic, clasts less than 1 cm to 25 cm
5b Wacke, arkose, sandstone
5c Siltstone, argillite
5d Graphitic argillite; commonly with pyrite
5e Schist
5f Chert
5g Tuffaceous; fine to medium grained, feldspathic, light grey to brown weathering
5h* Volcaniclastic conglomerate; sub-rounded to angular metavolcanic and metasedimentary clasts from 1 to 40 cm in a tuffaceous matrix
5j Pyrite-magnetite ironstone; massive to banded, minor chert
- INTRUSIVE CONTACT**
- 4 Felsic Metavolcanic Rocks**
- 4a* Flows; massive
4b* Flow breccia, hyaloclastite
4c* Tuff, lapilli tuff, crystal tuff
4d* Tuff breccia, breccia; epiclastic, pyroclastic
4e* Schist
4f* Quartz-feldspar porphyry intrusions
- Intermediate Metavolcanic Rocks**
- 3a Flows; massive
3b* Flows; pillowed
3c* Flow-top breccia and/or pillow breccia
3d Tuff, lapilli tuff and crystal tuff
3e Schist
3f Tuff breccia and breccia; pyroclastic and epiclastic
3g Amygdaloidal
3h Medium- to coarse-grained flows
3j Plagioclase phenocrysts from 1 to 7 mm
3k* Amphibole phenocrysts from 1 to 7 mm
3l* Intermediate dikes; dioritic composition
- Mafic Metavolcanic Rocks**
- 2a Flows; massive
2b Flows; pillowed
2c Pillow and/or flow-top breccia
2d* Tuff, lapilli tuff
2e Schist
2f Variolitic
2g Amygdaloidal
2h* Medium- to coarse-grained flows
2j Amphibolite, recrystallized rocks; hornfelsic textured
2k Leucocene bearing
2p Basaltic dikes
2m* Magnetite porphyry
- Ultramafic and Mafic Metavolcanic Rocks (Komatiites)**
- 1a Flows; massive, cumulate textured, peridotite*
1b Flows; spinifex textured
1c Flow breccia, polysuture-textured flows
1d Komatiitic basalt; very soft, light green to green, actinolite/tremolite bearing
1e Schist; commonly with iron carbonate, less commonly with green mica

- ### SYMBOLS
- Small bedrock outcrop
Area of bedrock outcrop
Geologic contact (interpreted, based on geophysical data)
Anticline
Syncline
Fault; unknown horizontal component (trend only, interpreted)
Fault; magnitude of displacement unknown (down-dropped block indicated, trend only, interpreted)
Fault; unknown generation, sinistral horizontal component (trend only)
Fault; unknown generation, sinistral horizontal component (trend only, interpreted)
Fault; unknown generation, dextral horizontal component (trend only)
Fault; unknown generation, sinistral horizontal component (trend only)
Fault; unknown generation, sinistral horizontal component (down-dropped indicated, trend only, interpreted)
Fault; unknown generation, dextral horizontal component (trend only, interpreted)
Bedding; unsubsided, facing not known (inclined, vertical)
Graded bedding; facing known (inclined, vertical)
Graded bedding; overturned, facing known
Sedimentary bedding; other than grading or crossbedding, facing known (inclined)
Pillows; facing not known (trend only)
Pillowed flow; facing known (magnitude of dip uncertain, inclined, vertical)
Pillowed flow; overturned, facing known
- Volcanic bedding, structures other than pillows and flow tops; facing not known (inclined)
Cleavage; unknown generation (magnitude of dip uncertain, inclined, vertical)
Schistosity (inclined, vertical)
Mineral foliation; unknown generation (magnitude of dip uncertain, inclined, vertical)
Mineral foliation; first generation (magnitude of dip uncertain, inclined)
Mineral foliation; second generation (inclined, vertical)
Mineral foliation; third generation (magnitude of dip uncertain, vertical)
Primary igneous foliation (inclined)
Mineral lineation; unknown generation
Stretching lineation; unknown generation
Intersection lineation; between unknown generations
Fold axis lineation; U-asymmetry, unknown generation
Fracture; unknown vertical displacement (inclined)
Quartz vein; unknown generation (vertical)
Quartz vein; foliation parallel, unknown generation (inclined)
Glacial striae
Property; keyed to list
Road (primary, secondary, tertiary, trail)
Powerline

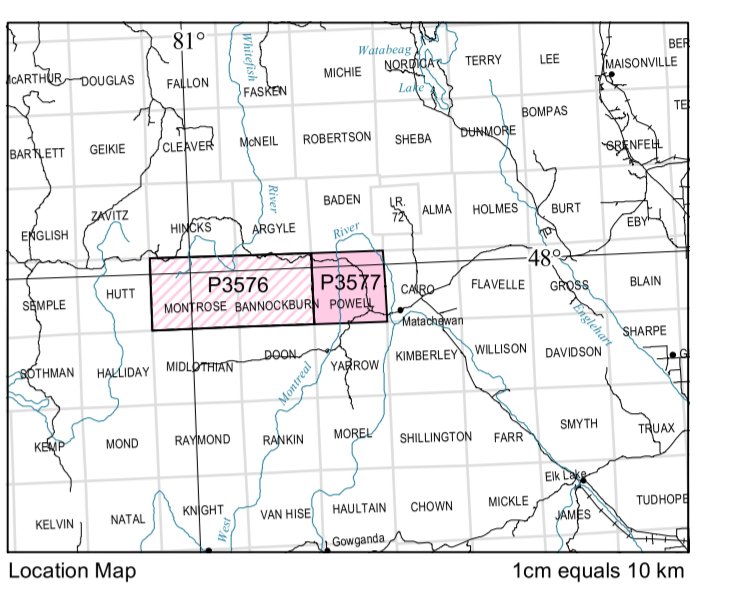
- ### ABBREVIATIONS
- asb.....asbestos
Ag.....silver
Au.....gold
brt.....barite
cp.....chalcocyprite
Cz.....carbonate alteration
fl.....fluorite
gmica.....green mica alteration
Mo.....molybdenum
mo.....molybdenite
py.....pyrite
qv.....quartz vein

- ### PROPERTIES*
- Amex Exploration Inc. (1977)
 - Barker Mining Syndicate (1968)
 - E. Boyce and C. Bamister (1969)
 - British Matachewan Gold Mines Ltd. (1971)
 - H. Bron (T. Skimming and Associates) (1978)
 - V. Broobank (1951)
 - Cameco Corporation (1995)
 - D. Campbell (1996)
 - C. Campbell (1975)
 - Camex Explorations Consultants Ltd. (F. Vandell) (1977)
 - Canadian Johns-Manville Company Ltd. (1973)
 - Carton Exploration Ltd. (1973)
 - Child's Red Lake Gold Mines (1947)
 - Consolidated Matachewan Mines Ltd. (1969)
 - Copper Lake Expt. Ltd. (T. Skimming) (1975)
 - J.C. Grant (1948)
 - Driver Resources Inc. (1997)
 - Erie Canadian Mines (1935)
 - Extender Products Ltd. (1979)
 - Freewest Resources Canada Inc. (1995)
 - F.J. Garbutt (1974)
 - Gemex Minerals Inc. (1977)
 - Gold Acres Mines Ltd. (1974)
 - Highland Valley Mines (1970)
 - N.B. Keevil (1956)
 - F. Kiernicki (2000)
 - F. Kiernicki, J. Fulford, R. Peters (1997)
 - Lacana Mining Corp. (1985)
 - M. Leahy and F. Kiernicki (1992)
 - A.H. Mathieu (1926)
 - Majestic Construction Ltd. (1974)
 - MidChip Resources Inc. (1986)
 - Midas Resources Ltd. (1976)
 - Mining Geophysical Corp. Ltd. (1955)
 - Mistang Resources Inc. (2005)
 - Nautilus Exploration Ltd. (1973)
 - Newmont Exploration of Canada Ltd. (1989)
 - Norcan Resources Ltd. (1997)
 - T. O'Bradovich (1996)
 - C. Palangio and F. Nasso (1958)
 - Pamour Porcupine Mines Ltd. (1981)
 - Patricia Gold Mines Ltd. (1997)
 - Pax International Mines Ltd. (1965)
 - G. Pinkerton (2005)
 - Royal Oak Mines Inc. (1994)
 - Sedex Mining Corp. (1997)
 - Selco Mining Corp. Ltd. (1976)
 - R. Sheedy (1979)
 - S. Stanwick (1996)
 - Sylva Explorations Ltd. (1979)
 - Welsh-Sauve Copper Gold Mines Ltd. (1964)
 - G.S. Welsh (1974)
 - Westwind Explorations Ltd. (1960)
 - WMC International Ltd. (1996)
 - Woman River Gold Mines Ltd. (1957)
 - Young-Davidson Mine Ltd. (1916)

This legend is common to map P.3576 (Precambrian Geology, Barrockburn and Montreal geographies). Legend codes that are marked with an asterisk () do not appear, or are different, on this map.
*These rocks may, in part, be extrusive.
*These rocks may, in part, be intrusive.
*The letter "C" preceding a rock code refers to data compiled from existing maps and from maps filed for assessment work credits; the letter "G" preceding a rock code refers to data interpreted from geophysical data.
*Rocks codes designated with a "7" (e.g., 6/1) indicate the lithology may contain both rock types, but the first number code is inferred to predominate.

- ### CREDITS
- Geology by B.R. Berger, S. Préfontaine and assistants, 2005.
- To enable the rapid dissemination of information, this map has not received a technical edit. Discrepancies may occur for which the Ontario Ministry of Northern Development and Mines does not assume liability. Users should verify critical information.
- Issued 2006.
- Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form:
Berger, B.R. and Préfontaine, S. 2006. Precambrian geology, Powell Township, Ontario Geological Survey, Preliminary Map P.3577, scale 1:20 000.
- *Dates in brackets indicate last year of exploration.

Ontario
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MAP P.3577
PRECAMBRIAN GEOLOGY
POWELL TOWNSHIP
Scale 1:20 000
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SOURCES OF INFORMATION

Digital base map derived from Ontario Land Information Warehouse, Land Information Ontario, scale 1:20 000, with modifications by staff of the Ministry of Northern Development and Mines.

Map co-ordinates are in UTM zone 17, NAD 83.

Ontario Geological Survey 2003. Ontario airborne geophysical surveys, magnetic and electromagnetic data, Kirkland Lake area, Ontario Geological Survey, Geophysical Data Set 1102—Revised.

Jensen, L.S. 1996. Precambrian geology, Powell Township; Ontario Geological Survey, Preliminary Map P.3556, scale 1:20 000.

Lovell, H.L. 1964. Powell and Cairo townships, Timiskaming District, Ontario Department of Mines, Map 2110, scale 1:31 680.

Files of the Resident Geologist's Office, Kirkland Lake.

The Earth Resources and Mineral Exploration Web Site (ERMES).

Geology not tied to surveyed lines.

Magnetic declination was approximately 11° 7' W at the centre of the map area in 2005.