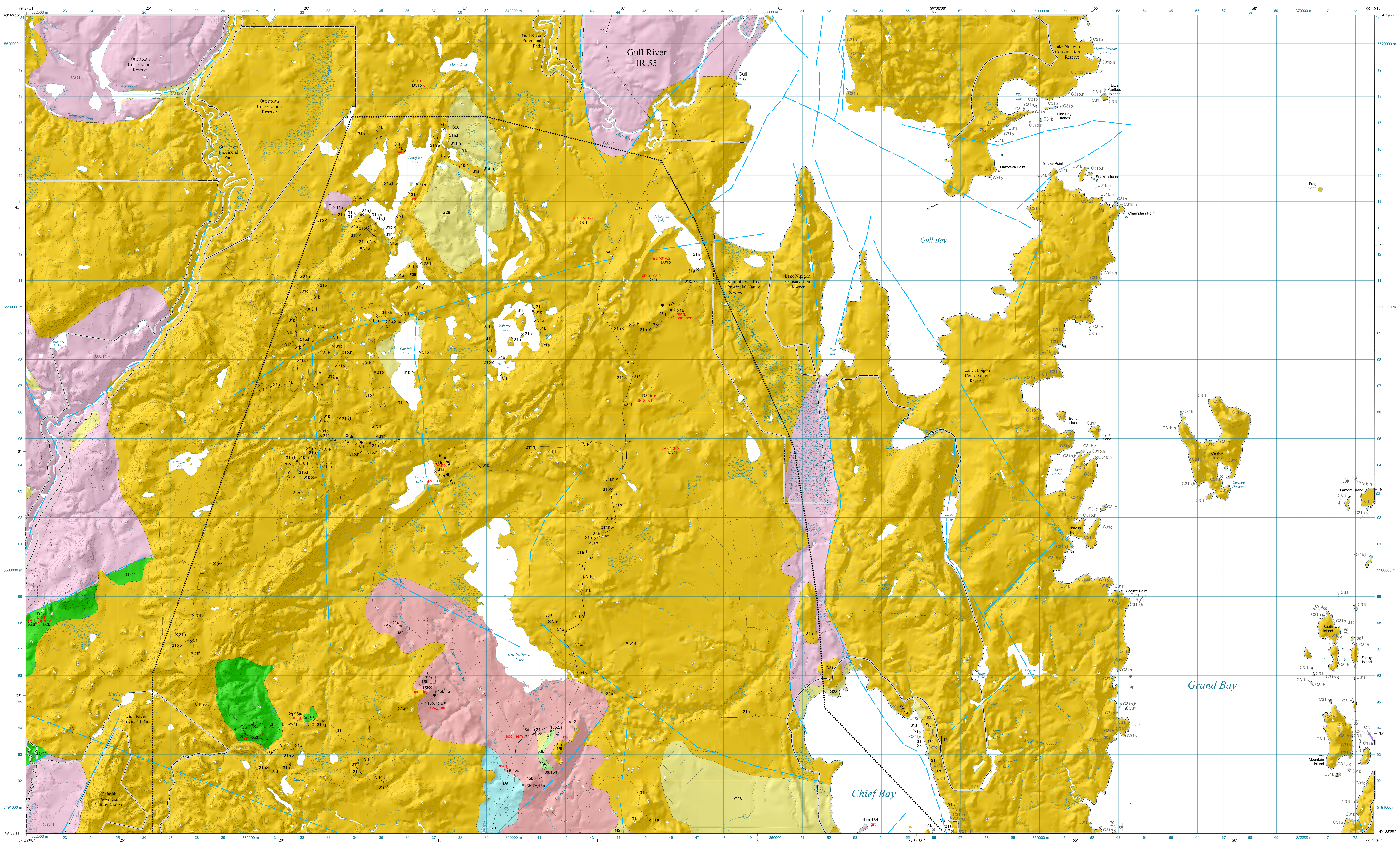


LEGEND[ab]

PHANEROZOIC

CENOZOIC

QUATERNARY

RECENT
Lake, stream, wetland deposits

PLEISTOCENE
Glacial deposits, sand, gravel, till

UNCONFORMITY

PRECAMBRIAN

PROTEROZOIC

31 Mafic Intrusive Rocks (Nipigon Sills)
- 31a Fine-grained diabase
- 31b Medium-grained diabase
- 31c Coarse-grained diabase
- 31d Very coarse-grained diabase
- 31e Gabbro
- 31f Magnetite rich, coarse-grained diabase with intergranular magnetite
- 31h Very coarse-grained diabase pods, veins, or monzogabbroic diabase[c]
- 31i Chilled diabase
- 31k Inclusion-rich, chilled diabase
- 31l Dike
- 31p Aplite with very fine-grained to aphanitic felsic rock cutting diabase sill

INTRUSIVE CONTACT

30 Mafic to Ultramafic Intrusive Rocks
- 30a Peridotite
- 30c Olivine gabbro

INTRUSIVE CONTACT

28 Sibley Group Sedimentary Rocks[d]

Rossport Formation
- 28c Mudstone
- 28d Siltstone
- 28e Dolomite
- 28f Sandstone
- 28h Carbonate breccia
- 28i Stromatolitic carbonate
- 28j Intraformational debris flow

Kama Hill Formation
- 28k Shale
- 28l Siltstone
- 28m Sandstone

Pass Lake Formation
- 28a Conglomerate
- 28b Sandstone/arenite

UNCONFORMITY

21 Diabase Dikes
- 21a Diabase dikes

INTRUSIVE CONTACT

ARCHEAN

16 Hornblende Suite[e]
- 16a Unsubdivided
- 16b Tonalite to granodiorite
- 16c Potassium feldspar megacrystic granite to granite

INTRUSIVE CONTACT

15 Biotite Granite Suite[e]
- 15a Unsubdivided
- 15b Leucocratic granite
- 15d Granite dikes
- 15e Feldspar megacrystic granite
- 15f Gneissic granite
- 15h Pegmatitic granite
- 15i Aplite

INTRUSIVE CONTACT

13 Muscovite Granite Suite
- 13a Muscovite granite

INTRUSIVE CONTACT

12 Biotite Tonalite Suite[e]
- 12b Leucocratic tonalite
- 12d Dike
- 12i Granodiorite to granite

INTRUSIVE CONTACT

11 Gneissic Suite[e]
- 11a Unsubdivided
- 11b Felsic to intermediate gneiss
- 11c Mafic gneiss

INTRUSIVE CONTACT

10 Late Tectonic to Posttectonic Mafic to Ultramafic Intrusive Rocks[f]: gabbro, melagabbro, pyroxenite

INTRUSIVE CONTACT

8 Synvolcanic to Syntectonic Intermediate to Felsic Intrusive Rocks[f]
- 8e Tonalite
- 8s Quartz porphyry
- 8t Quartz feldspar porphyry
- 8u Feldspar porphyry

INTRUSIVE CONTACT

7 Syntectonic to Posttectonic Mafic Intrusive Rocks
- 7a Diorite
- 7c Gabbro

INTRUSIVE CONTACT

6 Clastic Metasedimentary Rocks
- 6b Feldspathic arenite
- 6c Lithic arenite
- 6e Feldspathic wacke
- 6f Lithic wacke
- 6g Siltstone
- 6h Argillite, shale
- 6j Polymictic conglomerate
- 6m Quartz-biotite-feldspar schist (mafic)
- 6n Quartz-biotite-feldspar schist (intermediate)

5 Chemical Sedimentary Rocks
- 5a Oxide facies
- 5d Sulphide facies
- 5e Chert
- 5f Ferruginous chert

4 Felsic Metavolcanic Rocks
- 4a Massive flow
- 4k Tuff
- 4q Tuffaceous sandstone

3 Intermediate Metavolcanic Rocks
- 3a Massive flow
- 3q Tuffaceous sandstone
- 3k Tuff
- 3l Lapilli-tuff
- 3s Foliated intermediate rock[g]

2 Mafic Metavolcanic Rocks
- 2a Massive flow
- 2b Flow-foliated, flow-banded, flow-laminated
- 2f Pillowed flow
- 2g Pillow fragment breccia
- 2k Tuff
- 2l Lapilli tuff
- 2p Tuffaceous mudstone
- 2q Tuffaceous sandstone
- 2s Foliated to massive gabbroic amphibolite[g]

[a] This legend applies to Maps P.3559, P.3560 and P.3561. Not all rock types may be present on this map. In addition, the numerical codes for this legend were designed for use with a database of geoscience information related to the Lake Nipigon Region Geoscience Initiative. As a result, not all numerical codes used in the database are present on these maps.
[b] The letter "C" preceding a code indicates data compiled from previously published work, as listed under "Sources of Information". These codes are presented in grey to distinguish them from this study's data. The letter "D" preceding a code indicates data compiled from diamond-drill holes. The letter "G" preceding a code indicates that the unit is interpreted from geophysical data.
[c] Very coarse-grained to coarse-grained amphibole-plagioclase ± potassium feldspar. Amphibole may be either hornblende or actinolite; pink feldspar may be potassium feldspar or hematite-stained plagioclase. This unit could represent a late magmatic phase of the sills, assimilation of Sibley Group sedimentary rocks, or a combination of the 2 processes.
[d] HF28 indicates hornfelsed sedimentary rock most likely of the Sibley Group.
[e] Contacts between units 11, 12, 15 and 16 may be gradational or obscure, especially in small outcrop. Polygons are coloured according to dominant rock type.
[f] From compiled data, not observed in outcrop.
[g] Foliated to highly deformed intermediate to mafic rocks of probable volcanic origin.

SYMBOLS[abc]

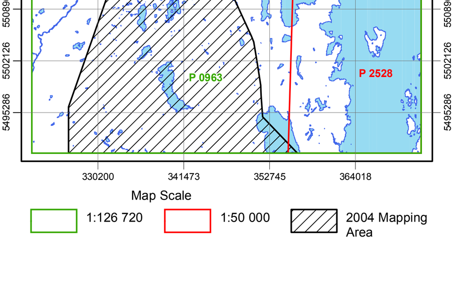
- Approximate centre of outcrop or outcroppings[d]
- Geological contact; interpreted
- Fault; trend only, unknown vertical component, interpreted
- Limit of mapping
- Graded bedding; with facing (inclined, magnitude of dip uncertain)
- Sedimentary bedding; with facing, overturned
- Bedding; no facing, unsubdivided (horizontal, inclined)
- Axial plane of fold; M-asymmetry, unknown generation, trend only
- Axial plane of fold; Z-asymmetry, unknown generation, trend only
- Axial plane of kink fold; S-asymmetry, unknown generation, vertical
- Crenulation cleavage; unknown generation, inclined
- General cleavage; unknown generation (inclined, vertical)
- Compositional layering; unknown generation, trend
- Mineral foliation; unknown generation (trend only, inclined, vertical)
- Fracture; sinistral horizontal displacement, unknown vertical displacement, trend only
- Fracture; unknown horizontal and vertical displacement (inclined, magnitude of dip uncertain)
- Igneous contact; dike, trend only
- Igneous contact; sill (inclined, trend only)
- Igneous contact; unsubdivided, inclined
- Joint (horizontal, inclined, vertical)
- Joint (trend only, magnitude of dip uncertain)
- Elongation (stretch) lineation; unknown generation
- Mineral lineation; unknown generation
- Lineation; undefined, unknown generation
- Schistosity (inclined, magnitude of dip uncertain)
- Ductile shear; unknown separation (trend only, inclined)
- Vein; extensional, inclined
- Vein; fault, trend only
- Vein; foliation parallel, trend only
- Glacial striae; direction known
- Diamond-drill hole (vertical, inclined with direction)
- Company drill-hole number
- Elevation benchmark
- Road (primary, secondary, tertiary)
- Provincial Park
- Nature reserve, Conservation reserve
- Indian Reserve

[a] This list of symbols applies to Maps P.3559, P.3560 and P.3561. All symbols may not be present on this map.
[b] Symbols in red represent compiled information.
[c] Symbols in grey indicate data compiled from previously published work.
[d] Only outcrops visited by field personnel or compiled from the literature are indicated.

ABBREVIATIONS[a]

act	actinolite	mag	magnetite
Au	gold	MYL	mylonite
bt	biotite	po	pyrrhotite
BX	breccia	py	pyrite
chl	chlorite	qtz	quartz
cp	chalcopyrite	ser	sericitic
ep	epidote	spc_hem	specular hematite
grt	garnet	tr	tremolite
hem	hematitic	U	uranium

[a] This list of abbreviations applies to Maps P.3559, P.3560 and P.3561. All abbreviations may not be present on this map.



DIAMOND-DRILL HOLES[a]

DDH Number	UTM, NAD 83, Zone 16	Elevation (m)	Azimuth, Dip	Total Depth (m)	Company Name	Drilling Year
MT-01	336655E 5518369N	315	000, -90	246	Canplats Resources Corp.	2002
GR-01-01	342405E 5513369N	287	000, -90	813.5	Canplats Resources Corp.	2002
JP-01-01	345508E 5506602N	299	280, -60	149	Canplats Resources Corp.	2001
JP-01-02	345450E 5511732N	290	317, -50	87	Canplats Resources Corp.	2001
JP-01-03	345600E 5511183N	290	000, -90	298	Canplats Resources Corp.	2001
JP-01-04	346305E 5504619N	300	280,-45	208	Canplats Resources Corp.	2001

[a] Only those diamond-drill holes (DDH) that are located within the Lake Nipigon Region Geoscience Initiative map area or those that are used for the construction of geological cross sections are presented in this table.

Note:
Only outcrops that were visited by field party personnel during this mapping project, or which were reliably located on previously published maps (*see* "Sources of Information") are displayed on the map face.

Due to rugged topography, variable outcrop exposure, and the common occurrence of outcrop along cliffs, instead of attempting to portray the probability of outcrop distribution on the map by using colour or stipple, the authors have instead chosen to provide topographic information on the map face. This was done in order to provide the user with a more reliable indication of areas with a higher probability of containing outcrops in addition to those indicated on the map, as well as to aid in the visualization of the geology in a geological terrain where most major rock units are predominately flat lying.

Ontario

Ontario Geological Survey

MAP P.3559

PRECAMBRIAN GEOLOGY

KABITOTIKWIA LAKE AREA

WEST-CENTRAL NIPIGON EMBAYMENT NORTHWESTERN ONTARIO

Scale 1:50 000

1000m 0 1 2km

NTS References: 52 H/10, 11, 14, 15

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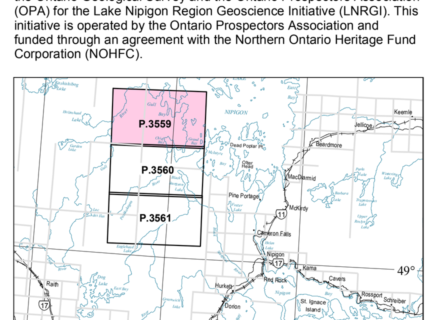
Ontario Prospectors Association

Ontario
Northern Ontario Heritage Fund
Fonds du patrimoine du Nord de l'Ontario

This publication was completed under a contract agreement between the Ontario Geological Survey and the Ontario Prospectors Association (OPA) for the Lake Nipigon Region Geoscience Initiative (LNRGI). This initiative is operated by the Ontario Prospectors Association and funded through an agreement with the Northern Ontario Heritage Fund Corporation (NOHFC).



Location Map 1cm equals 25 km

SOURCES OF INFORMATION

Base map information derived from the Ontario Land Information Warehouse, Land Information Ontario, Ontario Ministry of Natural Resources, scale 1: 20 000.

Map Datum: NAD 83

Mapping conducted using UTM coordinates in Zone 16.

Metric conversion factor 1 foot = 0.3048 m.

Geology is not tied to surveyed lines.

Magnetic declination at the centre of the map area approximately 3°23'W in 2004.

*Compiled geology derived from:

Hart, T.R. 2001. Precambrian geology, Garden Lake greenstone belt (east half); Ontario Geological Survey, Preliminary Map P.3423—Revised, scale 1:20 000.

MacDonald, C.A., ter Meer, M., Lepage, L., Préfontaine, S. and Tremblay, E. 2004. Precambrian geology of the English Bay–Havoc Lake area, western Nipigon Embayment, northwestern Ontario; Ontario Geological Survey, Preliminary Map P.3537, scale 1:50 000.

Milne, V.G. 1964. Garden Lake area (east half), Thunder Bay District; Ontario Department of Mines, Map 2058, scale 1:63 360.

Ontario Geological Survey 2004. Ontario geophysical surveys, gravity data, grid and point data (ASCII and Geosoft® formats) and vector data, Lake Nipigon Embayment survey; Ontario Geological Survey, Geophysical Data Set 1052.

Ontario Geological Survey 2004. Ontario airborne geophysical surveys, magnetic and gamma-ray spectrometric surveys, Lake Nipigon Embayment area; Ontario Geological Survey, Maps 81 812 to 81 847, scale 1:50 000.

Ontario Geological Survey 2004. Ontario airborne geophysical surveys, magnetic and gamma-ray spectrometer data, grid data (ASCII Format) and vector data, Lake Nipigon Embayment area; Ontario Geological Survey, Geophysical Data Set 1047a.

Pye, E.G. and Baillie, J. 1965. Garden–Obonga Lakes sheet, Thunder Bay District; Ontario Department of Mines, Preliminary Map P.326, scale 1:126 720.

Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Robertson, D. 1974. Operation Ignace–Armstrong, Obonga–Lac des Iles sheet, District of Thunder Bay; Ontario Division of Mines, Preliminary Map P.963, scale 1:126 720.

Sutcliffe, R.H. 1982. Precambrian geology of the Wabigoon–Quetico Subprovince boundary, Grand Bay sheet, Thunder Bay District; Ontario Geological Survey, Preliminary Map P.2528, scale 1:50 000.

Sutcliffe, R.H. and Greenwood, R.C. 1985. Precambrian geology of the Lake Nipigon area, Kelvin Island sheet, District of Thunder Bay; Ontario Geological Survey, Geological Series - Preliminary Map P.2838, scale 1:50 000.

*Only compiled stations from Sutcliffe and Greenwood (1985) and Sutcliffe (1982) are depicted on this map face.

Exploration information derived from:

Core storage facilities: Resident Geologist's Office, Thunder Bay.

Assessment files: Mines Library, Sudbury.

Mr. R.S. Middleton, Exploration Manager, East West Resource Corporation, kindly provided access to the company's drill core.

CREDITS

Geology compiled by E. Tremblay.

Digital drafting by S.J. McIlraith.

Cartographic production by Alphons Evers.

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 2005.

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:

MacDonald, C.A., Tremblay, E. and ter Meer, M. 2005. Precambrian geology of the Kabitotikwia Lake area, west-central Nipigon Embayment, northwestern Ontario; Ontario Geological Survey, Preliminary Map P.3559, scale 1:50 000.