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Published 2003

MAP 2044A

SURFICIAL GEOLOGY

# MCKELLAR BAY

BAFFIN ISLAND

NUNAVUT

Scale 1:100 000/Échelle 1/100 000

kilometres 2 0 2 4 6 8 kilomètres

Universal Transverse Mercator Projection
North American Datum 1927
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Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1927
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## LEGEND

*This legend is common to maps 2042A, 2043A, 2044A, 2045A, 2046A, 2047A, and 2048A. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend appear on this map.*

### QUATERNARY

#### HOLOCENE

**Fpt** — ***FLUVIAL DEPOSITS (nonglacial alluvial floodplain, terrace, fan, and delta topsets):*** *gravel, sand, boulders, minor silt; and muck; 1–10 m thick; deposited in braidplains.*

***MARINE DEPOSITS:*** *sediments deposited during postglacial regression of a high sea level.*

**Mv** — ***Marine veneer:*** *sand, silt, and gravel; 0.5–2 m thick; discontinuous cover of littoral and offshore sediment including beach ridges and sea-ice-rafted debris; mimics surface of underlying till or rock. Fine-grained sediment bears a continuous vegetation cover patterned with subpolar nilis.*

***GLACIAL MARINE DEPOSITS:*** *sand, silt, gravel, and boulders; 2–30 m thick; deposited in the high prograde sea.*

**GMd** — ***Glacial marine delta:*** *sand, silt, boulders, and gravel; 2–20 m thick; massive to crossbedded sediments that coarsen upwards in ice-contact deposits or at termination of outwash trains or meltwater channels.*

**GMb** — ***Glacial marine blanket:*** *sand, silt, minor gravel, and dropstones; 2–30 m thick; deposited from suspension and iceberg rafting; locally capped by Holocene marine regression sediments.*

***GLACIOFLUVIAL DEPOSITS:*** *gravel and sand; 1–30 m thick; deposited by meltwater behind, at, and in front of ice margins.*

**GFpt** — ***Glaciofluvial outwash:*** *stratified gravel and sand; 1–30 m thick; proglacial floodplains, terraces, and fans; includes kame terraces, minor subglacial and subaquatic deposits, glacial lacustrine channelled deltas and fans; locally kettled; grade to glacial marine deltas at marine limit; may include washed till surfaces with few fines.*

**Gr** — ***Glaciofluvial ice-contact deposits (eskers and kames):*** *poorly stratified to sorted gravel, sand, and boulders; 5–20 m thick; forming ridges and hummocks.*

#### EARLY HOLOCENE AND WISCONSINAN

***TILL:*** *clast-supported silty sand, dominantly cobble- and boulder-size igneous and metamorphic clasts; 0.5–20 m thick; deposited in subglacial and ice-marginal environments of local ice caps (Meta Incognita Peninsula) and of the Foxe Ice Dome (Amadjuak Ice Divide). Minor silty till deposited on Hudson Strait coast by Labrador (i.e. trans-strait) and central Laurentide (i.e. down-strait continental outlet) ice.*

**Th** — ***Hummocky till:*** *diamicton which may be underlain by remnant glacier ice; 1–20 m thick; rolling to hummocky; mainly in Frobisher Bay moraines.*

**Tb** — ***Till blanket:*** *diamicton; 1–10 m thick; undulating plain with minor fluted, hummocky, ridged, ribbed, or channelled areas; solifluction lobes on steeper slopes; thick end moraines; minor till veneer or glaciofluvial outwash; rare glaciolacustrine fines.*

**Tv** — ***Till veneer:*** *diamicton; 0.5–2 m thick; >40% of area is till, <60% of area is rock ledges and knobs, and rubble; bedrock topography is evident; minor till blanket, minor colluvium, including talus, colluvial fans, solifluction lobes, and undifferentiated valley-bottom deposits; minor washed-till boulder fields.*

### QUATERNARY AND PRE-QUATERNARY

***BEDROCK AND ROCK WEATHERING PRODUCTS:*** *intact and frost-riven outcrop, discontinuous cover of rubble, boulders, gravel, sand, and minor silt; glacially scoured to frost-rived or disaggregated outcrop; >40% till and boulder fields (including till from which finer fraction was washed by glacial meltwater or a higher sea), and colluvium; very minor fluvial deposits, muck, or raised marine nearshore and shoreline deposits. Topography variable from rolling to rough with some major and numerous minor ridges and scarps. Vegetation continuous to absent, low Arctic to mid-Arctic, depending on substrate, exposure, and elevation. Subdivided by M.R. St-Onge by resistance to weathering, least to most: units Ol, Ps, Pc, APt, and Pg.*

**Ol** — *Ordovician limestone.*

**Ps** — *Clastic metasedimentary rocks of Paleoproterozoic Sugluk and Lake Harbour groups and Blandford Bay assemblage.*

**Pc** — *Marble of Paleoproterozoic Lake Harbour Group.*

**APt** — *Tonalite-monzogranite orthogneiss of Archean Superior Province and of Paleoproterozoic Narsajuaq arc and Ramsay River.*

**Pg** — *Monzogranite of Paleoproterozoic Cumberland batholith.*

*Surficial materials contact*

*Cirque*

*Ice-moulded rock*

*Striation (sense known, unknown)*

*Till lineation/streamline/smear*

*Drumlin*

*Esker*

*Interlobate moraine*

*End and/or lateral moraine*

*Assumed ice margin (readvance/recessional); thick till on proximal side*

*Subaqueous push moraine (De Geer moraine)*

*Subglacial or proglacial meltwater outlet (flow direction known, unknown)*

*Lateral (sidehill) meltwater channel; barb upslope*

*Perched delta; marine or glaciolacustrine*

*Glacial lake shoreline*

*Limit of marine inundation, observed*

*Limit of marine inundation, interpolated where data permits*

*Beach ridges, prominent*

*Solifluction terrace*

*River icing*

*Elevation (m): w – washing limit; d – delta top; b – beach* — 53w,43b

*$^{14}$C date location (see Table 1)* — 23

*Ground observation*

*Till sample*

**Author: D.A. Hodgson**

*Geology by D.A. Hodgson, 1995–1997, 1999*

*Digital map compilation by D.A. Hodgson, 1997–2002*

*Digital cartography by E. Everett, Earth Sciences Sector Information Division (ESS Info)*

*This map was produced from processes that conform to the ESS Info Publishing Services Subdivision Quality Management System, Ottawa, registered to the ISO 9001: 2000 standard*

*Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada*

*Digital base map from data compiled by Geomatics Canada, modified by ESS Info*

*Mean magnetic declination 2003, 32°48'W, decreasing 23.1' annually. Readings vary from 32°11'W in the SW corner to 33°23'W in the NE corner of the map*

*Elevations in metres above mean sea level*

## REFERENCE

**St-Onge, M.R., Scott, D.J., and Wodicka, N.**
1999: Geology, McKellar Bay, Nunavut; Geological Survey of Canada, Map 1981A, scale 1:100 000.

| Map no. | Age[1] | Lab. identification | Elev. (m) | Material |
|---|---|---|---|---|
| 1 | >43 300 | AA-7897 | 0,3 | Mollusca |
| 2 | 8045 ± 55 | AA-7025 | 35 | Mollusc |
| 3 | 7960 ± 60 | AA-7893 | 73 | Mollusc |
| 4 | 7880 ± 140 | GSC-433 | 64 | Mollusca |
| 5 | 7865 ± 250 | QC-1137 | 75 | Mollusca |
| 6 | 7595 ± 65 | AA-7892 | 57 | Mollusc |
| 7 | 7490 ± 160 | GSC-504 | 43 | Mollusca |
| 8 | 7185 ± 120 | QC-1138 | 45 | Mollusca |
| 9 | 4690 ± 380 | GSC-1382 | 14 | Charred fat |
| 10 | 4460 ± 150 | GaK-1291 | 14 | Charred fat |
| 11 | 4067 ± 73 | P-727 | 12 | Charred fat |
| 12 | 3880 ± 150 | M-1532a | 8 | Charred fat |
| 13 | 3850 ± 150 | M-1532b | 8 | Charred fat |
| 14 | 3814 ± 69 | P-708 | 18 | Charred fat |
| 15 | 3790 ± 140 | GSC-596 | 3 | Mollusca |
| 16 | 3577 ± 69 | P-710 | 15 | Charred fat |
| 17 | 3480 ± 200 | M-1531 | 11 | Charred fat |
| 18 | 3390 ± 210 | GSC-1051 | 18 | Charred fat |
| 19 | 3043 ± 63 | P-699 | 10 | Charred fat |
| 20 | 2608 ± 50 | P-698 | 6 | Charred fat |
| 21 | 2410 ± 120 | M-1535 | 12 | Charred fat |
| 22 | 2399 ± 150 | M-1528 | 6 | Charred fat |
| 23 | 2380 ± 80 | GaK-1284 | 12 | Seal skin |
| 24 | 2370 ± 100 | GaK-1286 | 12 | Twig |
| 25 | 2360 ± 100 | GaK-1280 | 6 | Sod, twigs |
| 26 | 2350 ± 140 | GSC-620 | 6 | Charred fat |
| 27 | 2250 ± 130 | M-1526A | 6 | Charred fat |
| 28 | 2220 ± 150 | GaK-1276 | 12 | Sod |
| 29 | 2200 ± 120 | M-1534 | 8,5 | Charred fat |
| 30 | 2180 ± 120 | M-1530a | 10 | Charred fat |
| 31 | 2110 ± 80 | GaK-1287 | 12 | Baleen |
| 32 | 2040 ± 130 | GSC-794 | 8,5 | Driftwood |
| 33 | 2010 ± 80 | GaK-1463 | 12 | Charred fat |
| 34 | 1916 ± 61 | P-704 | 12 | Plant material |
| 35 | 1870 ± 110 | GaK-1464 | 12 | Sod |
| 36 | 1827 ± 61 | P-706 | 12 | Twigs |
| 37 | 1790 ± 120 | M-1530b | 10 | Charred fat |
| 38 | 1790 ± 130 | GSC-708 | 38 | Organic debris |
| 39 | 1670 ± 150 | M-1533 | 4 | Charred fat |
| 40 | 1470 ± 110 | M-1529 | 4 | Charcoal |
| 41 | 1400 ± 80 | GaK-1285 | 12 | Sod |
| 42 | 680 ± 180 | GSC-591 | 76 | Peat |
| 43 | 580 ± 80 | GaK-1288 | 12 | Twig |
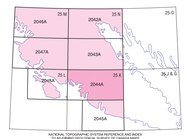
**Table 1.** Summary of radiocarbon dates. [1]For nonmarine material, the normalized age (machrone age corrected to a 0 ‰ $\delta^{13}C$ = -25‰) is given where available, otherwise the uncorrected age is given. For marine organisms, where the isotopic ratio is known the age is corrected following GSC convention to a 0 ‰ $\delta^{13}C$ = 0‰, which is equivalent to subtracting a marine reservoir effect of 400 years from a normalized age; otherwise the uncorrected age (which incorporates the marine reservoir effect) is given.