DESCRIPTIVE NOTES

The Ulukhaktok map area consists of the northeastern part of NTS 87-F/9 and northwestern part of NTS 87-F/10. It lies within the Minto Inlier, a ~300 km long by 100–150 km wide belt of gently folded sedimentary and igneous rocks of early Neoproterozoic age (late Tonian-early Cryogenian). The Neoproterozoic sedimentary rocks belong to the Shaler Supergroup, a ~4 km thick succession of shallow marine carbonate and evaporite rocks with interbedded terrigenous metasedimentary strata deposited in a shallow intracontinental epeiric sea known as the Amundsen Basin (Thorsteinsson and Tozer, 1962; Young, 1981; Rainbird et al., 1994, 1996a). The basin is considered to have formed within the supercontinent Rodinia and similar rocks outcrop in the Mackenzie Mountains of the northern Cordillera, suggesting that the basin extended for more than 1000 km to the southwest (Long et al., 2008; Rainbird et al., 1996a). Basal strata of the Shaler Supergroup (Rae Group) are exposed only at the northeastern end of the Minto Inlier, near Hadley Bay, where they unconformably overlie Paleoproterozoic sedimentary rocks, which in turn, unconformably overlie Archean granitic rocks (Campbell, 1981; Rainbird et al., 1994).

Shaler Supergroup strata were injected by tholeiitic basaltic sills of the ca. 723–720 Ma (Heaman et al., 1992; Macdonald et al., 2010) Franklin igneous event. Sills are generally 20–60 m thick, constitute 10–50% of the stratigraphic section, and commonly extend for 20 km or more along-strike with little change in thickness. Rare north-northwest striking dykes are interpreted to have intruded along syn-magmatic normal faults, to feed sills and possibly the flood basalts (Bédard et al., 2012). Sills of similar type and age also occur in the Coppermine Homocline, Brock Inlier and Duke of York Inlier to the south (Jefferson et al., 1994; Rainbird et al., 1996b; Shellnutt et al., 2004) and coeval, geochemically similar intrusions and volcanic rocks associated with the Franklin event extend from Greenland to the western Yukon (Heaman et al., 1992; Denyszyn et al., 2009; Macdonald et al., 2010). The Shaler Supergroup in Minto Inlier is capped by Natkusiak Formation flood basalt lava flows and interflow sedimentary rocks (Williamson et al., 2013). The lavas are up to 1 km thick and are the extrusive equivalent of the Franklin sills (Baragar, 1976; Jefferson et al., 1985; Dostal et al., 1986; Dupuy et al., 1995). Two main Franklin magma populations are identified. Basal lavas and older sills (Type 1) are slightly enriched in very incompatible trace elements (high Ce/Yb), tend to be more primitive (higher MgO), and the sills may have peridotitic bases, with up to 55% olivine (Hayes et al., 2015). These primitive Type 1 sills have potential for Ni-Cu-PGE mineralization (Jefferson et al., 1994). Younger diabasic sills (low Ce/Yb, Type 2) correspond to the major sheet flow units of the lava succession. A prominent feldspar porphyritic facies characterizes some Type 2 intrusions.

The irregular edge of the exposed Minto Inlier is defined by an erosional unconformity that separates the Neoproterozoic rocks from Lower Cambrian sandstone and siltstone that passes upward into a thick succession of mainly dolomitic carbonate rocks ranging in age from Cambrian to Devonian (Thorsteinsson and Tozer, 1962; Dewing et al., 2015). Minto Inlier rocks are affected by open folds with northeast trending axial traces. Beds typically dip no more than 10° and there is generally no penetrative deformation fabric. The origin of the folding is unknown but it occurred after 720 Ma, before uplift and erosion of the Proterozoic rocks and prior to deposition of overlying lower Cambrian siliciclastic rocks (Durbano et al., 2015), which are not folded, but dip gently towards the northwest. Two main generations of faults are present (Bédard et al., 2012; Harris, 2014): north- to northwest trending syn-magmatic Proterozoic normal faults and a younger set of east-northeast to east trending normal faults that cut all rocks in the area. The normal faults form horst and graben systems with up to 200 of metres of stratigraphic separation on individual faults, although throws are generally much less than this. A wide zone of intense east-northeast to east trending normal faulting stretches from Boot Inlet in the west to Wynniatt Bay in the east. This regional-scale, en-echelon, stepping normal fault system records sinistral transtensional motion (Harris, 2014). Observed contacts and lithologies were extrapolated and/or inferred using aeromagnetic data and satellite imagery (e.g. orthorectified air photos, Landsat7, SPOT5, and Google Earth™). Many linear structures visible on air photos and linear discontinuities on the 1st-derivative aeromagnetic maps (Kiss and Oneschuk, 2010) are interpreted to be faults, although significant throws cannot always be demonstrated. Late Wisconsinan proglacial and glacial deposits cover about 40% of the map's area (Dyke and Savelle, 2004). The extent of Quaternary cover shown on this map is not meant to be comprehensive, but to highlight areas where bedrock attributions are uncertain.

NTS 87-F/9 (east side) and NTS 87-F/10 (west side) extends from the Hamlet of Ulukhaktok to the Amundsen Gulf and the Albert Islands on the southern flank of the Minto Inlier. Together with intercalated sills, strata dip gently to the east and northeast, defining the nose and southern flank of the Holman Island Syncline. The map area is dominated by thick Type 2 sills that are separated by septa of the tan carbonate (unit nPκ3) and upper evaporite (unit nPκ4) members of the Kilian Formation. No Type 1 sills have been recognized in this mapsheet. The map area is informally divided into 3 areas: western, central-southern, north-western.

In the western part of the map area, between the coast and a major lake known as Ingilraniq, the landscape is dominated by a very thick (up to 150 m) sill that forms a high plateau. The outcrop pattern is broken up by a dominant set of roughly north-south trending normal faults, with subordinate east-west-trending faults, all of which are probably of Paleozoic age. The faults create linear valleys, many occupied by lakes, and have variable throws, such that blocks are offset in a chaotic way (*see* cover illustration). A lower sill is poorly exposed on some valley floors (UTM, 480560E, 7841600N), in Ulukhaktok (e.g. UTM, 471900E, 7848500N), and along the coast (Quaraukkat Cape, UTM, 480000E, 7833500N). A poorly exposed septum (~70 m thick, e.g. UTM, 477370E, 7837960N) of strongly contact-metamorphosed strata of the Kilian Formation tan carbonate (unit nPκ3) member separates the upper and lower sills.

In the central-southern part of the map area, a major sill (~100 m thick) dominates the landscape, forming prominent cliffs that line the eastern shore of Ingilraniq (lake) and the shores of Shoal Bay and Safety Channel to the south. This sill forms a broad diabase-floored plateau extending many km inland. The upper intrusive contact is recessive and runs along an arc defined by four lakes (Hingilihuk, Anaruvik, Uyarahugyulik and Qikiqtalik). A lower sill is exposed on Nauyaat-Bold Bluff (UTM, 485800E, 7832000N) and the Albert Islands (UTM, 489900E, 7829500N). The two sills are separated by a ~70 m thick sequence of tan carbonate member strata (unit nPκ3, UTM, 488420E, 783050N) that hosts a thin parasitic sill (UTM, 487470, 7849050). How the main upper and lower sills in this part of the map area are related to the upper/lower sills in the western area (discussed above) is uncertain as a result of unconstrained motion on inferred faults.

Toward the north and east, a ~70 m thick section of the upper evaporite member of the Kilian Formation (unit nPκ4) is locally well exposed (UTM, 497700E, 7844460N) above the central-southern area capping sill. Above these sedimentary rocks, a ~50 m thick diabase sill forms prominent mesas in the north-eastern part of the map area (UTMs, 497630E, 7844700N; 497200E, 7843100N). This mesa-forming sill has a recessive upper contact that follows the base of another set of mesas further to the north-east, where ~50 m of unit nPκ4 strata are exposed (e.g. UTM, 497780E, 7848400N). Another sill (~70 m thick), caps yet another set of mesas further to the north-east, and is intermittently exposed beneath the Quaternary cover all the way to the northeast corner of the map area.

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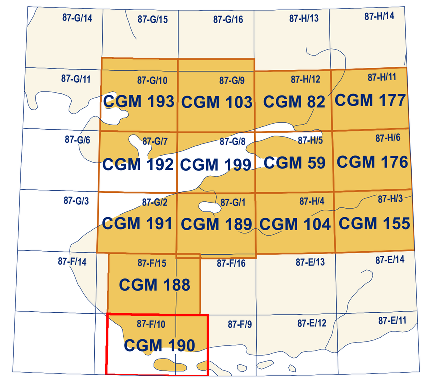
Abstract

NTS 87-F/9 and NTS 87-F/10 are underlain by the upper Kilian Formation of the Neoproterozoic Shaler Supergroup and mafic sills of the Franklin event. Shallowly east- and northeast-dipping strata define the nose and southern flank of the Holman Island Syncline. Carbonate, shale, and evaporitic rocks of the Kilian Formation are poorly exposed beneath capping sills or as thin contact-metamorphosed septa between sills. West of a major lake named Ingilraniq, a thick sill forms a high plateau disrupted by many north-south and east-west trending normal faults. A lower sill occupies the floor of some valleys. East of Ingilraniq, four thick sills separated by sedimentary septa form a series of cuestas. Resistant sills form prominent west-facing cliffs and mesas, and extend towards the east as diabase-floored plateaux.

Résumé

Le sous-sol des feuillets 87-F/10 et 87-F/9 du SNRC est constitué de roches de la partie supérieure de la Formation de Kilian du Supergroupe de Shaler, ainsi que de filons-couches mafiques de l'événement de Franklin. Les strates faiblement inclinées vers l'est et le nord-est définissent le nez et le flanc sud du synclinal de Holman Island. Les roches carbonatées, les shales et les roches évaporitiques de la Formation de Kilian ne sont que très peu exposées dans des coupes sous des filons-couches sommitaux ou dans de minces feuillets séparant des filons-couches, où ils ont subi les effets d'un métamorphisme de contact. À l'ouest d'un grand lac nommé Ingilraniq, un épais filon-couche forme un haut plateau disséqué par plusieurs failles normales d'orientation nord-sud et est-ouest. Un filon-couche plus bas forme le plancher de vallées. À l'est du lac Ingilraniq, quatre épais filons-couches séparés par de minces feuillets de roches sédimentaires forment une série de cuestas. Des filons-couches résistants forment d'importantes falaises à regard ouest et des mésas et se prolongent vers l'est sous la forme de plateaux à surface constituée de diabase.



National Topographic System reference and index to adjoining published Geological Survey of Canada maps

Cover illustration
View west of shore south of Ulukhaktok (Victoria Island NWT) showing block faulting of Franklin Sills, Victoria Island, Northwest Territories. Photograph by J.H. Bédard. 2014-144

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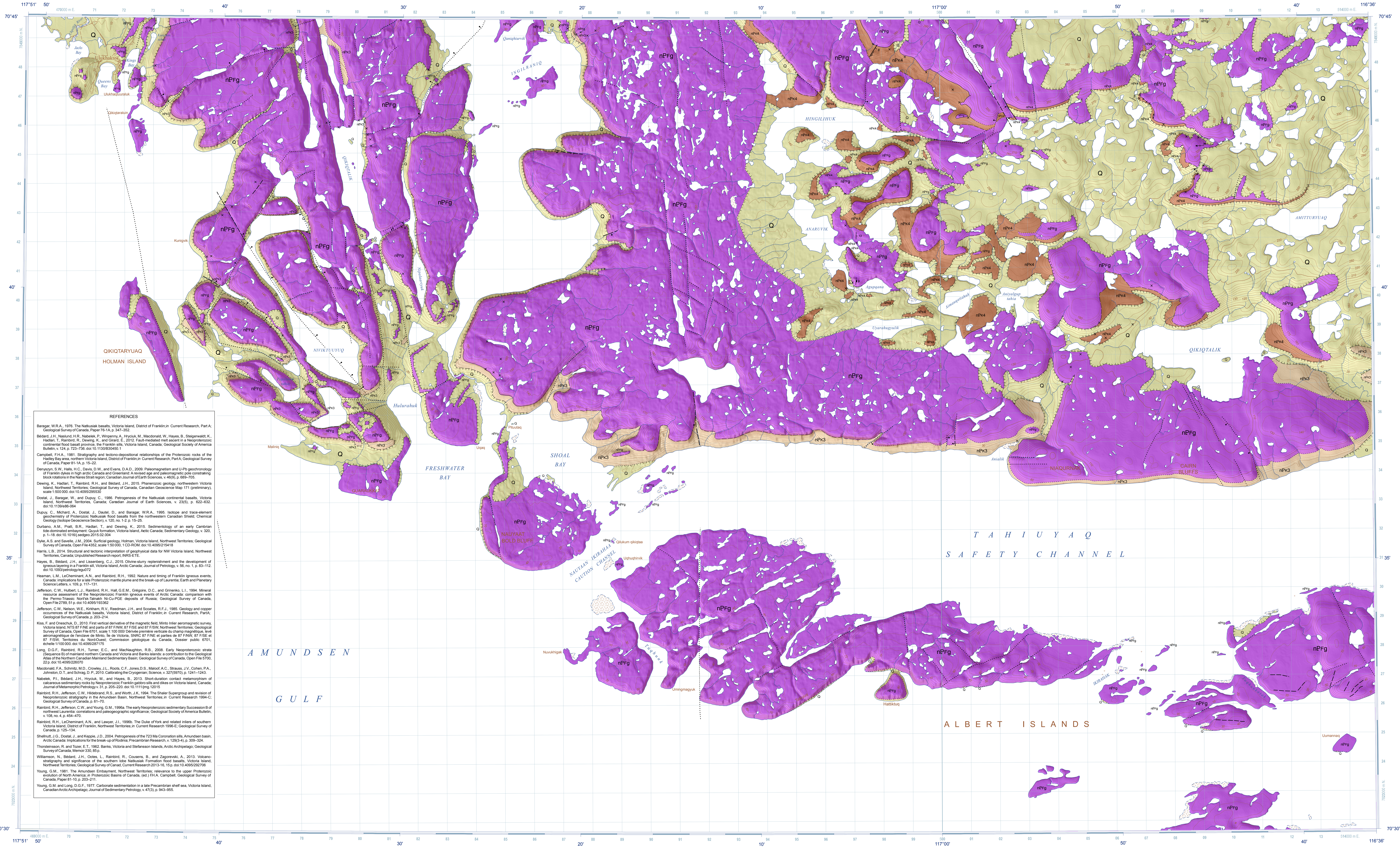
CANADIAN GEOSCIENCE MAP 190

GEOLOGY

ULUKHAKTOK

Victoria Island, Northwest Territories

1:50 000



REFERENCES

Baragar, W.R.A., 1976. The Natkusiak basalts, Victoria Island, District of Franklin; *in* Current Research, Part A; Geological Survey of Canada, Paper 76-1A, p. 347–352.

Bédard, J.H., Naslund, H.R., Nabelek, P., Winpenny, A., Hryciuk, M., Macdonald, W., Hayes, B., Steigerwaldt, K., Hadlari, T., Rainbird, R., Dewing, K., and Girard, É., 2012. Fault-mediated melt ascent in a Neoproterozoic continental flood basalt province, the Franklin sills, Victoria Island, Canada; Geological Society of America Bulletin, v. 124, p. 723–736. doi:10.1130/B30450.1

Campbell, F.H.A., 1981. Stratigraphy and tectono-depositional relationships of the Proterozoic rocks of the Hadley Bay area, northern Victoria Island, District of Franklin; *in* Current Research, Part A; Geological Survey of Canada, Paper 81-1A, p. 15–22.

Denyszyn, S.W., Halls, H.C., Davis, D.W., and Evans, D.A.D., 2009. Paleomagnetism and U-Pb geochronology of Franklin dykes in high arctic Canada and Greenland: A revised age and paleomagnetic pole constraining block rotations in the Nares Strait region; Canadian Journal of Earth Sciences, v. 46(9), p. 689–705.

Dewing, K., Hadlari, T., Rainbird, R.H., and Bédard, J.H., 2015. Phanerozoic geology, northwestern Victoria Island, Northwest Territories; Geological Survey of Canada, Canadian Geoscience Map 171 (preliminary), scale 1:500 000. doi:10.4095/295530

Dostal, J., Baragar, W., and Dupuy, C., 1986. Petrogenesis of the Natkusiak continental basalts, Victoria Island, Northwest Territories, Canada; Canadian Journal of Earth Sciences, v. 23(5), p. 622–632. doi:10.1139/e86-064

Dupuy, C., Michard, A., Dostal, J., Dautel, D., and Baragar, W.R.A., 1995. Isotope and trace-element geochemistry of Proterozoic Natkusiak flood basalts from the northwestern Canadian Shield; Chemical Geology (Isotope Geoscience Section), v. 120, no. 1-2. p. 15–25.

Durbano, A.M., Pratt, B.R., Hadlari, T., and Dewing, K., 2015. Sedimentology of an early Cambrian tide-dominated embayment: Quyuk formation, Victoria Island, Arctic Canada; Sedimentary Geology, v. 320, p. 1–18. doi:10.1016/j.sedgeo.2015.02.004

Dyke, A.S. and Savelle, J.M., 2004. Surficial geology, Holman, Victoria Island, Northwest Territories; Geological Survey of Canada, Open File 4352, scale 1:50 000, 1 CD-ROM. doi:10.4095/215418

Harris, L.B., 2014. Structural and tectonic interpretation of geophysical data for NW Victoria Island, Northwest Territories, Canada; Unpublished Research report, INRS-ETE.

Hayes, B., Bédard, J.H., and Lissenberg, C.J., 2015. Olivine-slurry replenishment and the development of igneous layering in a Franklin sill, Victoria Island, Arctic Canada; Journal of Petrology, v. 56, no. 1, p. 83–112. doi:10.1093/petrology/egu072

Heaman, L.M., LeCheminant, A.N., and Rainbird, R.H., 1992. Nature and timing of Franklin igneous events, Canada: implications for a late Proterozoic mantle plume and the break-up of Laurentia; Earth and Planetary Science Letters, v. 109, p. 117–131.

Jefferson, C.W., Hulbert, L.J., Rainbird, R.H., Hall, G.E.M., Grégoire, D.C., and Grinenko, L.I., 1994. Mineral resource assessment of the Neoproterozoic Franklin igneous events of Arctic Canada: comparison with the Permo-Triassic Noril'sk-Talnakh Ni-Cu-PGE deposits of Russia; Geological Survey of Canada, Open File 2789, 51 p. doi:10.4095/193362

Jefferson, C.W., Nelson, W.E., Kirkham, R.V., Reedman, J.H., and Scoates, R.F.J., 1985. Geology and copper occurrences of the Natkusiak basalts, Victoria Island, District of Franklin; *in* Current Research, PartA; Geological Survey of Canada, p. 203–214.

Kiss, F. and Oneschuk, D., 2010. First vertical derivative of the magnetic field, Minto Inlier aeromagnetic survey, Victoria Island, NTS 87 F/NE and parts of 87 F/NW, 87 F/SE and 87 F/SW, Northwest Territories; Geological Survey of Canada, Open File 6701, scale 1:100 000/ Dérivée première verticale du champ magnétique, levé aéromagnétique de l'enclave de Minto, Île de Victoria, SNRC 87 F/NE et parties de 87 F/NW, 87 F/SE et 87 F/SW, Territoires du Nord-Ouest; Commission géologique du Canada, Dossier public 6701, échelle 1/100 000. doi:10.4095/287175

Long, D.G.F., Rainbird, R.H., Turner, E.C., and MacNaughton, R.B., 2008. Early Neoproterozoic strata (Sequence B) of mainland northern Canada and Victoria and Banks islands: a contribution to the Geological Atlas of the Northern Canadian Mainland Sedimentary Basin; Geological Survey of Canada, Open File 5700, 22 p. doi:10.4095/226070

Macdonald, F.A., Schmitz, M.D., Crowley, J.L., Roots, C.F., Jones, D.S., Maloof, A.C., Strauss, J.V., Cohen, P.A., Johnston, D.T., and Schrag, D. P., 2010. Calibrating the Cryogenian; Science, v. 327(5970), p. 1241–1243.

Nabelek, P.I., Bédard, J.H., Hryciuk, M., and Hayes, B., 2013. Short-duration contact metamorphism of calcareous sedimentary rocks by Neoproterozoic Franklin gabbro sills and dikes on Victoria Island, Canada; Journal of Metamorphic Petrology v. 31, p. 205–220. doi:10.1111/jmg.12015

Rainbird, R.H., Jefferson, C.W., Hildebrand, R.S., and Worth, J.K, 1994. The Shaler Supergroup and revision of Neoproterozoic stratigraphy in the Amundsen Basin, Northwest Territories; *in* Current Research 1994-C; Geological Survey of Canada, p. 61–70.

Rainbird, R.H., Jefferson, C.W., and Young, G.M., 1996a. The early Neoproterozoic sedimentary Succession B of northwest Laurentia: correlations and paleogeographic significance; Geological Society of America Bulletin, v. 108, no. 4, p. 454–470.

Rainbird, R.H., LeCheminant, A.N., and Lawyer, J.I., 1996b. The Duke of York and related inliers of southern Victoria Island, District of Franklin, Northwest Territories; *in* Current Research 1996-E; Geological Survey of Canada, p. 125–134.

Shellnutt, J.G., Dostal, J., and Keppie, J.D., 2004. Petrogenesis of the 723 Ma Coronation sills, Amundsen basin, Arctic Canada: Implications for the break-up of Rodinia; Precambrian Research, v. 129(3-4), p. 309–324.

Thorsteinsson, R. and Tozer, E.T., 1962. Banks, Victoria and Stefansson Islands, Arctic Archipelago; Geological Survey of Canada, Memoir 330, 85 p.

Williamson, N., Bédard, J.H., Ootes, L., Rainbird, R., Cousens, B., and Zagorevski, A., 2013. Volcano-stratigraphy and significance of the southern lobe Natkusiak Formation flood basalts, Victoria Island, Northwest Territories; Geological Survey of Canad, Current Research 2013-16, 15 p. doi:10.4095/292706

Young, G.M., 1981. The Amundsen Embayment, Northwest Territories; relevance to the upper Proterozoic evolution of North America; *in* Proterozoic Basins of Canada, (ed.) F.H.A. Campbell; Geological Survey of Canada, Paper 81-10, p. 203–211.

Young, G.M. and Long, D.G.F., 1977. Carbonate sedimentation in a late Precambrian shelf sea, Victoria Island, Canadian Arctic Archipelago; Journal of Sedimentary Petrology, v. 47(3), p. 943–955.

LEGEND

CENOZOIC

Q — Quaternary sediments.

NEOPROTEROZOIC

nPFg — **Franklin intrusions (ca. 720 Ma):** Typically massive, laterally extensive, diabasic sills with columnar jointing (~3–50 m thick, rarely up to 100 m). Some sills are composite with internal intrusive contacts. Two types: 1) An older, more primitive type is commonly layered, with microdiabasic lower and upper border zones and olivine-enriched basal cumulate (olivine gabbro to feldspathic wehrlite) that may be capped by a thin, (1–2 m) feldspathic pyroxenite cumulate. The olivine cumulate is commonly covered with bright orange lichen, weathers chocolate brown, and shows a characteristic layer-parallel ribbed weathering. Upper one half to three quarters of sills composed of massive olivine and pigeonite gabbros, a magnetite gabbro with common pitted weathering (magnetite oikocrysts) and a granophyric horizon containing abundant ocelli of granophyre and coarse, bladed clinopyroxene crystals. 2) Younger (based on crosscutting relationships), more evolved, diabasic sills showing enrichment in magnetite, ilmenite, quartz, and alkali feldspar towards their cores, but are rarely layered. Some sills are porphyritic and contain 10–15% plagioclase>clinopyroxene>olivine phenocrysts and glomerocrysts up to 5 mm. Less common, 1–40 m wide dykes. Irregular to very linear (generally oriented NNW). Commonly associated with fault breccias or drag folds in host metasediments. Dykes commonly connect to sills; some associated with calc-silicate contact metamorphic rocks (reddish garnet rimmed by bright green vesuvianite), black Fe-oxide skarns, and minor sulphides.

NEOPROTEROZOIC-TONIAN TO CRYOGENIAN

Shaler Supergroup

Kilian Formation (nPκ3–nPκ4)

nPκ4 — **Upper Evaporite-Carbonate member:** Base is dolosiltite and dololutite with 10–20% ripple crosslaminated gypsiferous siltite. Bedding-parallel and crosscutting satinspar veinlets and desiccation cracks common. Changes up-section from creamy grey to pinkish grey, reflecting increase in hematitic siltstone relative to carbonate. Nodular sulphate more common in middle part of member. Upper consists mainly of parallel-laminated red dolomitic mudstone and wavy- to lenticular-bedded, buff- to pink-weathering dolosiltite -no sulphate. Diagenetic redox horizons, desiccation cracks, halite pseudomorphs and tepee structures are ubiquitous. Present only in the southwest domain of the Minto Inlier. Approxomately 80 m thick.

nPκ3 — **Tan Carbonate member:** Tan to green-grey, flaggy weathering dolostone and limestone. Gradation between parallel-laminated lutite and flat to wavy and hummocky bedded siltite. Lutite-rich layers are generally plane parallel laminated with rare siltite lenses (starved ripples?). Bed bases typically scoured grading up to lutite-rich tops. Intraformational clast breccia commonly infilling swales and gutters. Black chert nodules throughout and stromatolites at several horizons. One distinctive bioherm, from the middle of the tan carbonate member, is laterally traceable from Ulukhaktok along the Kuujjua River Valley to where it cuts across the Natkusiak plateau. Approximately 60 m thick.

Contact; depositional, depositional-conformable or intrusive
- Defined
- Approximate
- Inferred

Contact; depositional-unconformable
- Approximate
- Inferred

Fault, generic; steep dip
- Approximate
- Inferred or concealed

Fault, normal; upright
- Defined
- Approximate
- Inferred or concealed

Station location
- Ground observation

Planar structure
- Bedding: Inclined
- Intrusive contact: Inclined
- Fault: Fault plane or small, minor shear fault. Showing dip. Arrow shows direction of relative horizontal displacement
- Jointing: Inclined

Linear structure
- Lineation: Glacial striation or groove

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Geomatics by É. Girard

Cartography by N. Côté

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Map projection Universal Transverse Mercator, zone 11.
North American Datum 1983

GEOLOGY

ULUKHAKTOK

Victoria Island, Northwest Territories

1:50 000

1 0 1 2 3 4 km

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications.
Elevations in metres above mean sea level

Shaded relief image derived from the digital elevation model supplied by GeoBase.
Illumination: azimuth 225°, altitude 45°, vertical factor 1x

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Magnetic declination 2015, 20°10'E, decreasing 42.5' annually.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. *See* documentation accompanying the data.

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Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 190

GEOLOGY

ULUKHAKTOK

Victoria Island, Northwest Territories

Canada