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መግቢያው ስለሆነው የግብርና ቤት  
በግብርናው የግብርናው መግቢያ 254S  
በግብርናው የግብርናው በግብርናው  
በግብርናው መግቢያ 2016-11S

መግቢያው የግብርናው

**SYLVIA GRINNELL**

**LAKE (SOUTH)**

የግብርናው, መግቢያ



መግቢያው  
የግብርናው  
በግብርናው

**ለግብርናው**

መግቢያው ስለሆነው የግብርና ቤት  
በግብርናው የግብርናው መግቢያ

2016

Canada



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St-Onge, M.R., Weller, O.M., Dyck, B.J., Rayner, N.M., Chadwick T., & Liikane, D., 2016. ሙሽጥ ንቅስትናማ፣ Sylvia Grinnell Lake (south), የዋሪያርኔ፣ ሙሽጥ፣ ሙሽጥ፣ ሙሽጥና ንቅስትናማ ከፊር፣ ከፊር ሙሽጥ ንቅስትናማ፣ ሙሽጥና 254S (ለፖሊስ); ሙሽጥ ይኸውም ንቅስትናማ በበናል፣ ለፓሊስና ሙሽጥና 2016-11S, ፋይልም 1:100 000. doi:10.4095/298757

## ABSTRACT

This map summarizes the field observations for the Sylvia Grinnell Lake (south) map area following eight weeks of regional and targeted bedrock mapping on western Hall Peninsula. The 2015 field campaign completes a two-decade mission to update map coverage for the whole of Baffin Island south of latitude 70°N. The bedrock is dominated by a Paleoproterozoic metaplutonic suite, ranging in composition from gabbro to syenogranite, with crosscutting relations indicating a progression from mafic to silicic magmatism. Prevailing upper amphibolite to lower granulite facies metamorphic conditions overlap the stability limits of magnetite and orthopyroxene, which is consistent with equilibrium phase diagrams and regional aeromagnetic data. Metasedimentary rocks, including quartzite, pelite, marble, and metagreywacke, are present as screens and enclaves between and within plutonic bodies. An examination of the 'ghost' stratigraphy suggests that the metasedimentary rocks can be correlated with the middle Paleoproterozoic Lake Harbour Group in the south and Piling Group in the north. Two basaltic dyke swarms and shallowly dipping Ordovician limestone respectively crosscut and overly the Paleoproterozoic units.

ΔΙΕΥΚΡΙΝΙΣΤΕ

[illegible]





[illegible]

Normal fault; solid circle indicates downthrown side  
Oblique-slip fault, normal, inferred  
Antiform, defined  
Antiform, overturned, defined  
Synform, defined  
Synform, overturned, defined

[illegible]



[illegible][illegible]

[illegible][illegible][illegible]

- 1) ወደሐምጋኔል ሊብረክት ካርታይድ፣ ጋሮንቲኒየር ምስራቅናም ቤንጂኖ-ሪቶኒው ሁለተኛው Superior ሊብረክት አይነት፣ ለዚህ የበላይኛው ልዩነት Paleoproterozoic supracrustal ንዑስ (Povungnituk Group; St-Onge et al., 1996;
- 2) የበላይኛው ሙሉ Paleoproterozoic ልዩነት monzogranitic ለዚህ granodioritic orthogneiss፣ ጋሮንቲኒየር ምስራቅናም arc-magmatic terrane (Narsajuaq arc; Scott, 1997; St-Onge et al., 2009),

[illegible]

- [illegible]

የፀዳሎች 3 ላይ 4 ሲሆኑ በብርሃኑም ታችኛው Cumberland batholith, ርዕሰ ልዩነቱም ይገኛል። ይህም ለ ca. 1865–1845 Ma (Whalen et al., 2010). ይህ Cumberland batholith በብርሃኑም ላይ ለAndean-type batholith (St-Onge et al., 2009), የፀዳሎች ለፍጥነትም በብርሃኑም ይገኛል። lithospheric delamination ላይ ይገኛል። የብርሃኑም (Whalen et al., 2010). ርዕሰ ልዩነቱም የፀዳሎች ca. 720 Ma basaltic ‘Franklin’ ነው። ርዕሰ ልዩነቱም የብርሃኑም Ordovician limestone strata (Blackadar, 1967).

[illegible]



ኖጆዊሎሙቶር 2-3 ካና ስፔር (Soper River) ወዲስ በበናጋሪያግሬፕ  
 ቅሩብሮሮረሞሽኑ ወደነፃነት ምዕራባዊ (magmatic arc) ሲሆን Rae-Meta  
 Incognita ልማቱም አለመሆኑም ርዕሰ ጉዳይ የሆነው 1845 Ma, ርዕሰ  
 ምዕራባዊ ልማት ሲሆን ርዕሰ ጉዳይ የሆነው 1842 Ma, ርዕሰ ምዕራባዊ  
 ልማት ሲሆን ርዕሰ ጉዳይ የሆነው oldest Andean-type phase  
 (Scott, 1997). ርዕሰ ጉዳይ የሆነው ልማት ሲሆን ርዕሰ ጉዳይ የሆነው  
 ልማት ሲሆን ርዕሰ ጉዳይ የሆነው syn-metamorphic amphibolite-facies ሲሆን  
 granulite-facies metamorphic foliation (St-Onge et al., 2007).

[illegible]TECTONOSTRATIGRAPHIC ΔC<sup>b</sup>d<sup>u</sup>LRΔ[illegible]

Paleoproterozoic metasedimentary ሴፕቲክሮን ጉሳፍ ልጥፍፍጋቤ ሊወሰን  
quartzite, semipelite, pelite, marble, ላይ ግራወክ ካሞኖኦርፖይድ ልወሰን፣ enclaves,  
screens, ላይ ፓኔል ርብረብ ላይ ሞባል ላይ ስፔሶሮንወስ ወደ ልወሰን፣ Mafic-  
ultramafic ስፔሶሮ ካሞኖኦርፖይድ ጉሳፍ ልወሰን ልወሰን metasedimentary strata.

[illegible]

[illegible]

[illegible]Metagreywacke ( $\Delta \dot{C}^b \dot{d}^a \dot{L}^c \dot{P}^b$  PPL)

Metagreywacke በበናጥረባለ ልዩነት ያለው የጨርቅ አይነት ነው።  
ከግሪንስተን ተመሳሳይነት ያለው biotite monzogranite (አማካኝ 3f)። የጀርባ በበናጥረባለ  
greywacke ለጥንታዊነት ይታወቃል Lake Harbour Group ይባላል። የጨርቅ አይነት፣ የጥንታዊ  
ለጥንታዊነት ይታወቃል Longstaff Bluff ለጥንታዊነት ይታወቃል Piling Group  
ወደፊት (Wodicka et al., 2014), ለጥንታዊነት ይታወቃል granitoid-ጥንታዊ

### Paleoproterozoic mafic-ultramafic sills (Δc<sup>b</sup>d<sup>a</sup>Δ PLHu-PLHd)

[illegible]

**Paleoproterozoic metaplutonic suite (Δ<sup>c</sup>bd<sup>u</sup>lrΔ Pg-Psb)**

Gabbro ( $\Delta\dot{C}^b d^a L^c P_g$ )

ኔብላዲክ ምድባዊ ልዩነት pegmatitic, kilometre-scale, layered biotite-clinopyroxene-magnetite±hornblende gabbro plutons ለሲሊቪያ Sylvia Grinnell Lake–Clearwater Fiord ልዩነት አሉ። ለዚህም ምክንያት CLፋፍታ ልዩነት አሉ።

Quartz diorite ( $\Delta \dot{c}^b d^{\dot{a}} \dot{u} \dot{r}^b$  Pd)

Quartz diorite ካምቦኦክሮክሮ ሊታኖጋቦ, ናዎሙጋቦ, ላኩላሊሲ ርዕሳዊኮባርዶሮ ልረካሳሊቲ ልጋሮክሮ ክብራሊቲ biotite-clinopyroxene-orthopyroxene±hornblende. ርዕሳዊ ርዕሳዊባርዶሮ ክብራሊቲ plutons ላሊካሊቲ ልረካሳሊቲ ክብራሊቲ ክብራሊቲ, ላሊታ

Garnet-sillimanite leucogranite ከሥዋናርኤል ለሚገኝ ልጋጋሪው ልጋጋሪናጋሪው  
Ldሚገኝ garnet-biotite monzogranite ይገኛል፡፡ ይህም ልጋጋሪናጋሪው  
ልጋጋሪናጋሪው Ldሚገኝ garnet-biotite monzogranite ከሚገኝ ልጋጋሪናጋሪው

Phase equilibria modelling ንፅሁንና ምድብ ዲግሪ ሚኒየር ማለት ሲሆን ለመስራቱ የሚያስፈልጉት መሳሪያዎች እና ሂሳብ አጠቃላይ በሀገሪቱም ተጽእኖ ሊሰጥ ይችላል።







clinopyroxene, hornblende,  $\text{Al}/\text{Mg}$  garnet,  $\text{Al}$   $\text{Fe}^{2+}$   $\Delta$ -cristobalite  
 $\Delta$ -cristobalite plagioclase  $\text{Al}$  quartz  $\pm$  K-feldspar. orthopyroxene, biotite,  
clinopyroxene,  $\text{Al}$  hornblende  $\Delta$ -cristobalite  $S_1$   $\Delta$ -cristobalite metaplutonic  $\Delta$ -cristobalite  
 $\Delta$ -cristobalite  $S_1$   $\Delta$ -cristobalite axial-planar  $\Delta$ -cristobalite  $\sim 100$  m  $\Delta$ -cristobalite  
isoclinal  $\Delta$ -cristobalite  $\Delta$ -cristobalite  $\Delta$ -cristobalite  $\Delta$ -cristobalite  $\Delta$ -cristobalite  
(Dyck and St-Onge, 2014).

[illegible][illegible][illegible][illegible][illegible]

$D_3$  ንፍፁሞም፡

[illegible]





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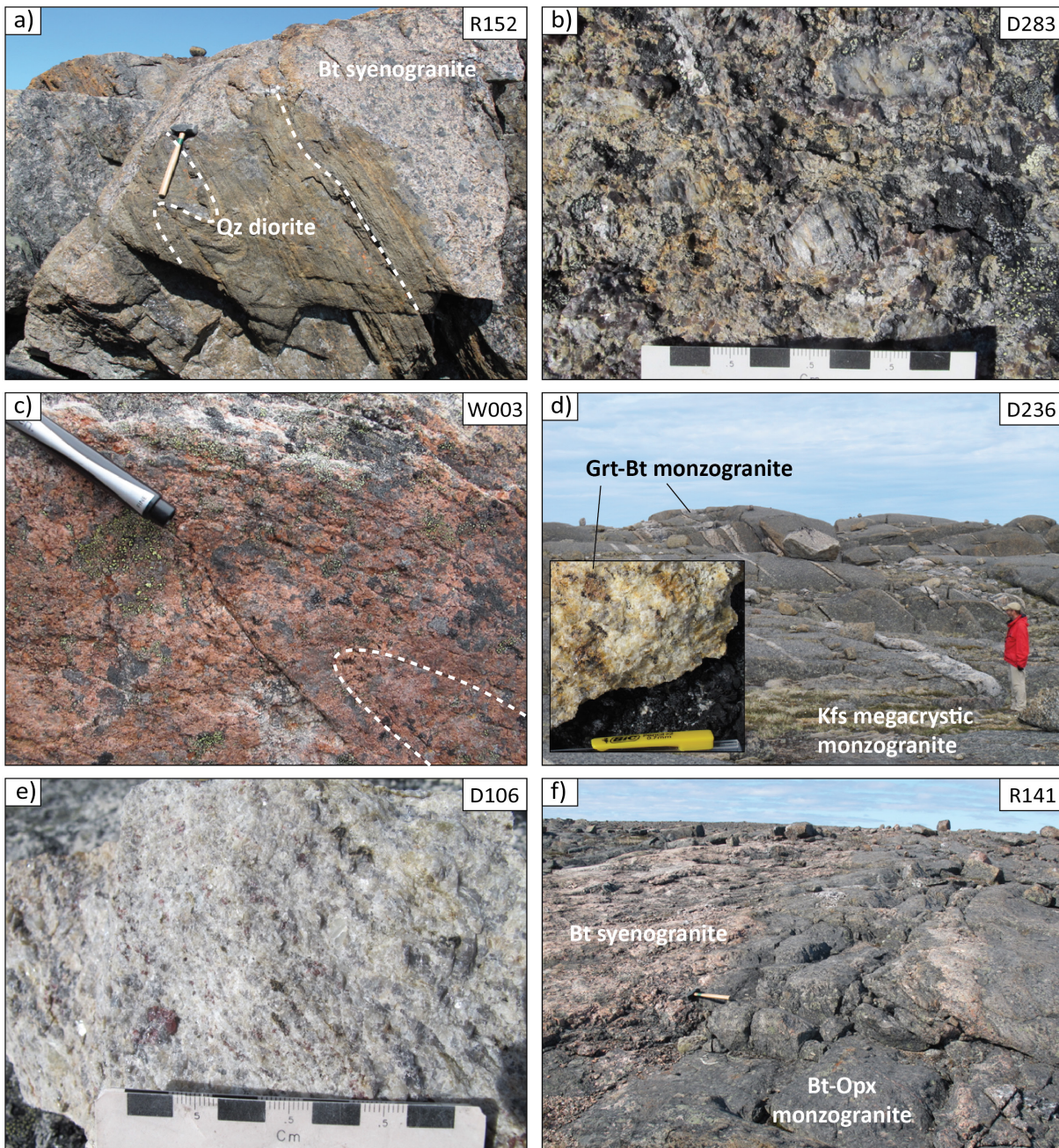


**ՃՆԱՊԱՏՈՒՄ 3.** ՃՆԱՊԱՏՈՒՄ ԸՆԿՆՈՒՄԻՆԻ ՏԵՄԵՆՈՒՄ՝ Sylvia Grinnell Lake-Clearwater Fiord. ՈՐՈՇԵՐՈՒՄԻ ՆԵՐՈՒՄ՝ ԸՆԿՆՈՒՄՈՒ ՈՐՈՇԵՐՈՒՄ ՎՈՐ ՃՆԱՊԱՏՈՒՄ ՎՈՐՈՇԵՐՈՒՄՈՒՄ՝ 15SAB-ՆԵՐՈՒՄԻ. a) 10 m ԸՆԿՆՈՒՄ ՆԵՐՈՒՄՈՒՄ՝ quartzite ԵՄԵՐՈՒՄ՝ biotite-իՄՈՒՄ՝ ԵՄԵՐՈՒՄ՝. b) ՎՈՐՈՇԵՐՈՒՄ՝ quartzite ՎՈՐՈՇԵՐՈՒՄ՝ ՏԵՄԵՆՈՒՄ՝ ԼՆԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝. c) ԸՆԿՆՈՒՄՈՒՄ՝ 1-2 cm ՎՈՐՈՇԵՐՈՒՄ՝ ԵՄԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ biotite ՎՈՐՈՇԵՐՈՒՄ՝ sillimanite. d) ՆԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ biotite-orthopyroxene monzogranite. e) ՆԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ ՎՈՐՈՇԵՐՈՒՄ՝ marble, ԸՆԿՆՈՒՄ՝՝ biotite-orthopyroxene monzogranite. f) ՎՈՐՈՇԵՐՈՒՄ՝ metagreywacke ՎՈՐՈՇԵՐՈՒՄ՝ biotite monzogranite.









**ՃՀԵՍՈՒՄ 5.** Բազալտային ճՀԵՍՈՒՄՆԵՐ metagranitoid-ԵՐ Sylvia Grinnell Lake–Clearwater Fiord-ԴՐ. ՈՐՈՇԵՐԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ ԵՐՇԵՐ ԸՆԴՈՒՄՆԵՐ ՈՐՈՇԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ 15SAB- ԵՐԴԿԵՐԻՆԻ. a) Բազալտային ճՀԵՍՈՒՄՆԵՐ ԱՆԿՆԵՐ ճՀԵՍՈՒՄՆԵՐ quartz diorite ճՀԵՍՈՒՄՆԵՐ grained biotite syenogranite. b) ԵՐԴԿԵՐԻՆԻ K-feldspar megacrystic monzogranite ճՀԵՍՈՒՄՆԵՐ 3–6 ԴՐՈՇԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ rapakivi ԵՐԴԿԵՐԻՆԻ. c) ճՀԵՍՈՒՄՆԵՐ ՍԻՆԵՐԵՐԻ ԱՆԿՆԵՐ biotite-orthopyroxene monzogranite. d) ճՀԵՍՈՒՄՆԵՐ K-feldspar megacrystic monzogranite ԵՐԴԿԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ biotite-garnet monzogranite ԴՐՈՇԵՐԻՆԻ. ԵՐԴԿԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ ԵՐԴԿԵՐԻՆԻ 1.8 m ՃՀԵՍՈՒՄՆԻ. ճՀԵՍՈՒՄՆԵՐ: ԵՐԴԿԵՐԻՆԻ biotite-garnet monzogranite ԵՐԴԿԵՐԻՆԻ, ճՀԵՍՈՒՄՆԵՐ 1–3 ԴՐՈՇԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ garnet phenocrysts ճՀԵՍՈՒՄՆԻ ճՀԵՍՈՒՄՆԵՐ ԵՐԴԿԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ sub-parallel biotite flakes. e) ԵՐԴԿԵՐԻՆԻ garnet-sillimanite leucogranite, ճՀԵՍՈՒՄՆԵՐ ճՀԵՍՈՒՄՆԻ ճՀԵՍՈՒՄՆԵՐ ճՀԵՍՈՒՄՆԵՐ ճՀԵՍՈՒՄՆԵՐ ԵՐԴԿԵՐԻՆԻ. f) ճՀԵՍՈՒՄՆԵՐ biotite-orthopyroxene monzogranite ԵՐԴԿԵՐԻՆԻ ճՀԵՍՈՒՄՆԵՐ biotite syenogranite ԴՐՈՇԵՐԻՆԻ. ճՀԵՍՈՒՄՆԵՐ ԵՐԴԿԵՐԻՆԻ 35 cm ՃՀԵՍՈՒՄՆԻ.







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