Interpretive Compilation of Stratigraphic Sections

Section 99-30M-A
The section is located on a small creek, in a valley carved into rocks of the Dubawnt Supergroup. It consists of a tough, blocky, red-brown sandy silt diamicton with minor sandy laminae or lenses. No major facies changes were observed in the 3 m section, although stony zones were present between 80-110 cm, 150-180 cm and 220-250 cm from the top of the section. The diamicton is interpreted as till. Field observations and the results of geochemical analyses and pebble lithological studies indicate one unit only. Geochemical composition of the two top samples reflects marine reworking and/or soil processes. Deep, consistent striae on bedrock outcropping at the base of the section are oriented at 134-144° and accompanying crescentic fractures indicate ice flow toward the southeast (Phase 5a). Fabric measured near the base of the section has a mean vector of 100°-270°, but low eigenvalues ratios suggest the unit at this depth was deposited as a sediment flow (Dowdeswell and Sharp, 1986). Latest flow (Phase 6) in the area is to the west (277° measured at height of land) and pebble counts in the top may reflect this late push of ice from the east.

Sections 99-KR-A and 99-KR-B
Sections exposed on the Kazan River indicate that till deposits in some parts of the study area may be thick and consist of more than one till unit of different provenance.

At least four distinctive till units are distinguished based on compositional variation, colour and till-fabric analyses. In both sections, the upper 1-1.5 m is characterized by well-sorted sand with pebbles and silt/clay facies containing marine fossils. This sediment package is interpreted as a marine transgressive sequence deposited in the post-glacial Tyrrell Sea.

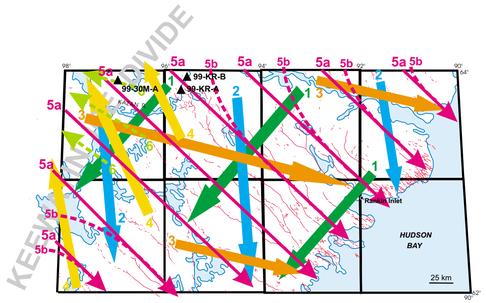
Underlying diamicton facies exhibit major breaks in colour and composition in both sections. The two upper tills (Units A and B) have a relatively low percentage of Dubawnt lithologies (4-8 mm fraction) and relative high percentage of greenstone/plutonic lithologies compared to lower diamicton unit(s). The composition indicates a provenance in the crystalline terrane outcropping north and east of the site. Till fabrics vary in strength, but confirm a southerly (upper till Unit A) and southeasterly (Unit B) ice flow (possibly during Phases 5b and 5a respectively).

In Section 99-KR-A, the till below (Unit C) shows a marked increase in total Dubawnt clasts, specifically in arkosic sandstone, and a fabric indicating a north-northwesterly flow. The data suggests this unit was deposited during Phase 4. Unit C was not observed in section 99-KR-B.

In both sections, Unit D is separated from the overlying unit by stratified sediments and/or a sharp colour change. The relative proportion of Dubawnt clasts is high in relation to greenstone/plutonic lithologies, which suggests a more easterly sediment provenance (possibly associated with Phase 3). Fabric analyses support this interpretation.

The relative chronology interpreted from striations measured on outcrop exposed across the river from the sections is consistent with the interpretations from the sections.

Reference:
Dowdeswell, J.A. and Sharp, M.J.
1986: Characterization of pebble fabrics in modern terrestrial glacigenic sediments. Sedimentology, 33, 699-710.

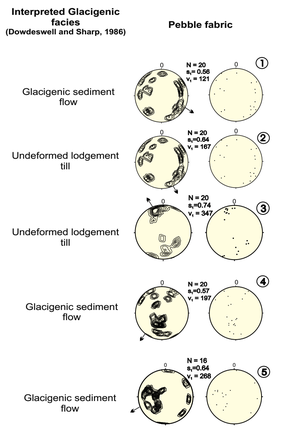


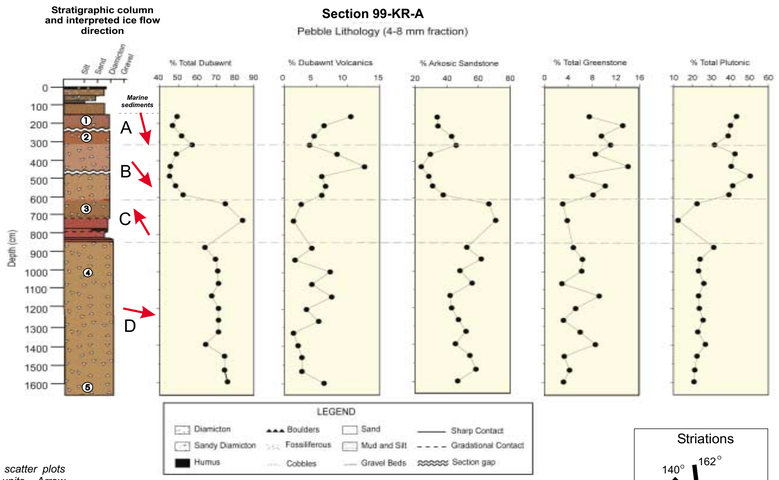
Generalized ice-flow chronology interpreted from ice-movement indicators. Location of sections shown with black triangles.

This compilation is part of GSC OF 4595 CD-ROM publication (2004). Additional information and the complete datasets are included in \Stratigraphic sections.

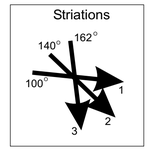
Field work and compilation by P. Henderson and I. McMartin, 1999.

Section 99-KR-A

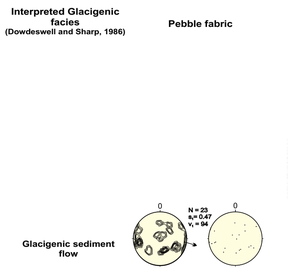


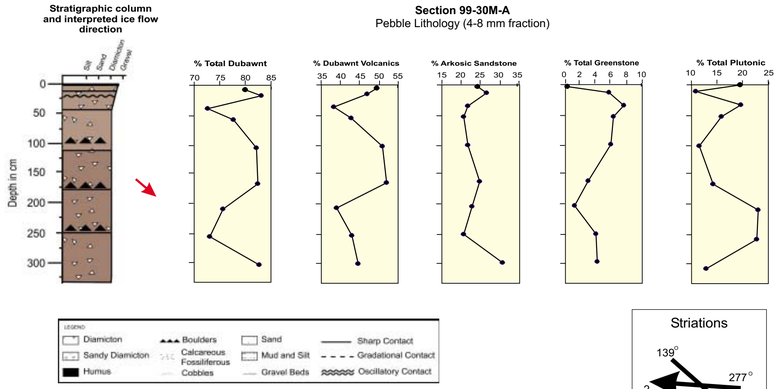


Contoured Schmidt equal-area nets and scatter plots showing pebble orientations in diamicton units. Arrow indicates orientation of the principle eigenvector v1; s1, the strength of the principle eigenvector; N, the number of measurements.



Section 99-30M-A





Section 99-KR-B