# GEM II HOPEDALE PROJECT: SURFICIAL MAPPING AND TARGETED TILL SAMPLING WEST OF HOPEDALE (NTS MAP AREAS 13N AND 13M) LABRADOR

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Surficial sampling and mapping were undertaken in the summer of 2018, as part of a GEM II GSC-GSNL collaborative project to investigate the geology and mineral potential of the Hopedale Block. The objectives of the surficial study are to 1) sample till in areas of no bedrock exposure, 2) map glacial sediments and landforms, and 3) record erosional indicators in areas that have not been previously mapped.

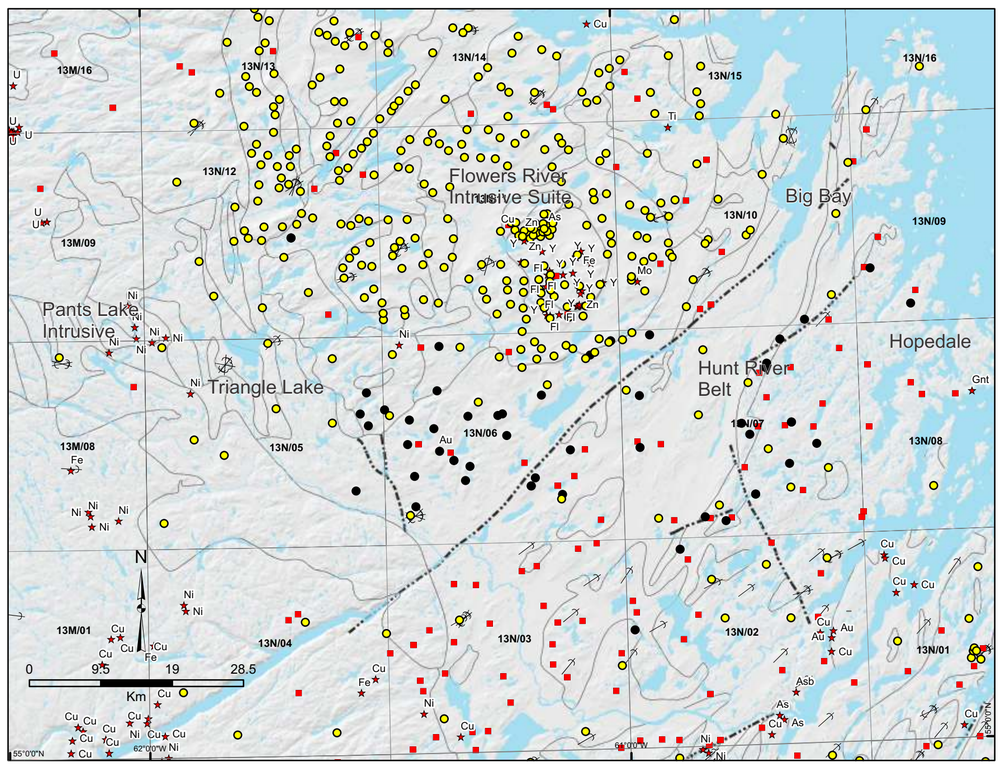
Till sites were chosen with input from Hamish Sandeman (top left), Alana Hinchey and Deanne van Rooyen(top right) about tectonic environments favorable for hosting mineralization, and outcrops displaying alteration (lower right) and mineralization. Gerry Kilfoil (lower left) provided geophysical insight into the inferred extent of favourable bedrock units in areas of glacial cover. Lake sediment geochemistry also helped guide the till-sampling program. During the sampling program, newly acquired airborne geophysical data from the GSC over NTS sheets 13 M and 13N, flown at 200m line spacing, allowed for efficient site identification in regions not covered by industry geophysics.

West-east-oriented streamlined landforms perched on ridge to the northeast of Triangle Lake (looking north). Large boulder (centre) is1 m wide.

U-Shaped valley east of Triangle Lake, formed by the passage of glacial ice between bedrock ridges (looking east-northeast)

Ridged moraine immediately west of Triangle Lake that may indicate cessation of glacial flow (looking south over).

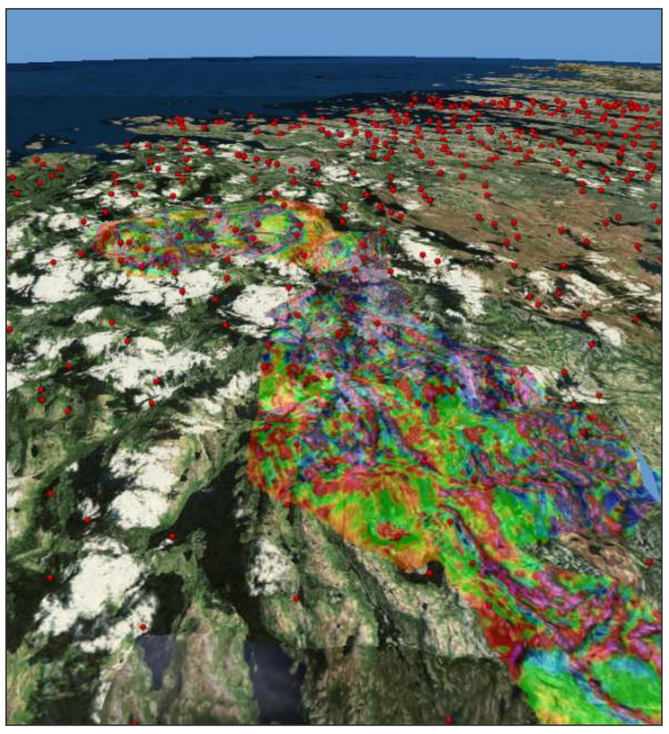
The Hunt River Archean greenstone belt and the area south and southwest of the Flowers River Igneous Suite were sampled in 2018; preliminary surficial mapping was conducted west of Triangle Lake. Pre-field site targeting was completed using comprehensive data mining of regional datasets including satellite imagery, regional lake sediment data, regional surficial and bedrock maps, and geophysical data from industry and government. On map sheet 13N, 53 till samples including six duplicates were taken at a spacing ranging from 2-10 line km, for analysis of the -63 micron fraction of the C-horizon. Bulk till samples were also collected for indicator-mineral analysis, and the pebble fraction recovered for lithology identification.




Site locations for till geochemistry and bulk till samples (black) collected in July 2018 in NTS map areas 13N and 13M Yellow dots represent sites taken by the GSC between 1984-87; red squares indicate the locations of NGR lake sediment samples.

Looking towards the south-southwest at crag-and-tail landforms west of the Pants Lake Intrusion. Landforms are about 2 km long, with the tapered ends pointing toward the direction of ice flow (east-northeast).

Results from this study will assist in exploration in the Hunt River Belt and the region south of the Flowers River Igneous Suite. Future work will include mapping and sampling west of Triangle Lake, to provide regional till geochemical, surficial mapping and ice-flow data in the Pants Lake Intrusion, and the Lac Lomier complex to the west. Continued cross-disciplinary collaboration with associates at the GSNL and GSC, and the close examination of the newly acquired geophysical data as it is released in the future, will provide the necessary framework for efficient till sampling and mapping studies.



Oblique view looking southeast of industry-generated geophysical data from the airborne geophysical surveys index and National Geochemical Reconnaissance (NGR) regional lake sediment data. Both of these datasets, obtained from the Geoscience Atlas, are draped over a digital elevation model: Hopedale is located in a straight line from the circular geophysical feature toward the coast. Till sample locations near lake-sediment anomalies were selected on ridges believed to be contributing sediment to the anomalous lakes.

Sample site in an area with thick till, south of Big Bay.

Looking west at fluvial terraces in a valley east of Hunt Lake. Sampling of these sediments, that are abundant in this valley, was avoided due to the difficulty of tracing them back to their bedrock source.

Two different striation sets measured near the Aucoin prospect, south of the Flowers River Intrusive Suite.

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