

Till and Stream Sediment Sampling

The Alberta Geological Survey (AGS) commissioned a till and stream sediment sampling study. The study results are available for [download](#). A till and stream sediment survey is a type of prospecting that involves collecting and analyzing sediment samples of glacial till and stream sediments. Till sediments are rock debris deposited across the landscape by the flow of glacial ice sheets, such as the Laurentide Ice Sheet and Cordilleran Ice Sheet, during an ice age. Stream sediment is derived from local bedrock sources and surrounding glacial sediments.

Till and stream sediment data is used as a tool to trace the minerals from specific sample locations back to their source locations in the search of mineral deposits. Understanding the direction of ice flow and the position of the debris as it was transported through the ice sheets and ultimately deposited

as till is key to retracing the source of mineral anomalies found in glacial and stream sediments. In Alberta, this includes variations in the flow of the Laurentide Ice Sheet as it advanced into and retreated from the province, in combination with the flow of the Cordilleran Ice Sheet, which advanced from the mountains, converging with the Laurentide Ice Sheet and deflecting it.

AGS Geologists coordinated the largest till and stream sediment collection project in Alberta's history. Geologists chose three areas of interest to conduct sampling based on historical ice-flow patterns in a semiregular grid pattern. Samples were collected and analyzed in labs for their geochemical properties and indicators of mineral deposits.

Highlights

This till and stream sediment survey complements hundreds of data points published by the AGS since 1969.

14 field crews



700 locations



1200 samples



Till and stream sediment sampling has already been proven useful as it helped reveal potential diamond deposits within Alberta in the 1990s and 2000s.

(AGS BUL 065 [<https://ags.aer.ca/publication/bul-065>], pages 4, 20, 57)



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Till and stream sediment sample locations in Alberta.

