A Progress Report on the Geochemical Characterization of Historical Drill Core Throughout Nova Scotia (2025-2026 update)

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Introduction

Nova Scotia has a long history of critical mineral production and continues to demonstrate potential to contribute to Canada's critical mineral supply. Through the Critical Minerals Geoscience and Data Initiative (CMGD), supported by Natural Resources Canada and the Geological Survey of Canada, the Geological Survey Division of the Nova Scotia Department of Natural Resources continued geochemical characterization of historical drill core during the 2025–2026 fiscal year to improve assessment of critical mineral potential across the province and expand publicly available geochemical datasets.

Summary of 2024-2025 Program

As previously reported, the 2024–2025 program included analysis of 601 samples from 99 drillholes, with results released in February 2025 as a digital data product (DP ME 550), interactive map application, and online dashboard presented at the PDAC Convention in March 2025 (OFR ME 2025-1).

Samples were selected to enhance historical drilling records associated with known mineral occurrences in Nova Scotia, modernize legacy geochemical datasets, and identify critical minerals not routinely analyzed in earlier exploration programs. Samples represented a range of geological environments and mineral deposit types throughout the province.

2025-2026 Program

Building on the work completed in the previous year, 465 additional samples were collected from 31 drillholes and shipped to AGAT Laboratories in Calgary, Alberta for sample preparation and analysis (Figure 10). All samples were analyzed by lithium borate fusion (whole rock analysis) with X-ray fluorescence (XRF) to determine their major element oxide composition (AGAT package 11-320). A four-acid digest followed by

ICP-OES/ICP-MS for metal and trace element compositions (AGAT package 201-071), and lithium borate fusion with an ICP-MS finish for metals and full rare earth element compositions (AGAT package 201-078) was also completed. Select samples were analyzed by ICP-OES via fire assay for Au (AGAT package 202052).

Deposit specific certified reference materials (OREAS) from The AnalytiChem Canada (formerly SCP Science) of Baie D'Urfé, Québec, as well as internal, non-certified, standards from the East Kemptville and Walton deposits were included for quality control. In addition, silica sand (SiO_2) from Shaw Resources was used as blank material. Control samples were inserted at a rate of approximately 10%. Samples were cut using the onsite core saw at the Stellarton Core Library when required and were then secured in a plastic bag with a zip-tie and sample tag clearly identified. Sample bags were then placed into larger, labeled rice bags in preparation for shipment to the lab.

Analytical results were received between February and March 2026 and are scheduled to be released for publication in early fiscal year 2026–2027. In addition, refinements to the interactive map application are currently being undertaken. This follow-up phase continued to improve historical datasets surrounding known mineral occurrences.

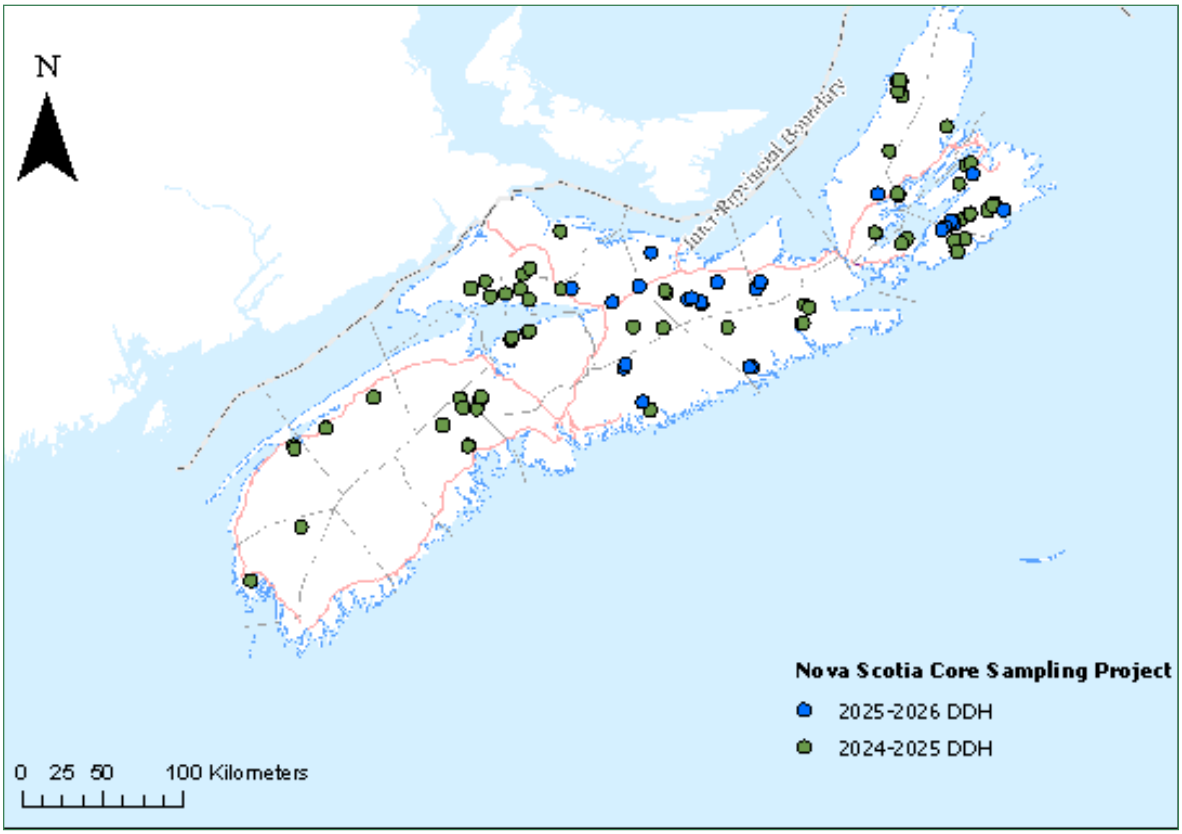

Figure 10. Map of sampled drillhole (DDH) locations across Nova Scotia for the geochemical characterization project. Drillholes sampled during the 2024-2025 campaign are shown in green while those sampled in 2025-2026 are shown in blue.

Acknowledgments

The author would like to acknowledge funding from the Geological Survey of Canada through the Critical Minerals Geoscience and Data Initiative for the opportunity to analyze these materials. In addition, the author would like to thank staff geologist Anna Ryan and contract geologist Neil Beaton for their technical assistance with drill core sampling, which contributed to the successful completion of this project as well as critical minerals specialist Andrew Russell for reviewing incoming results. We also acknowledge the summer students who assisted with core sampling and supported the program throughout the 2025 field season. Special thanks are extended to Stellarton Core Library staff Alex Mackay and Ivan Aikens for facilitating logistics and providing essential support during core library operations.