

# The REE Geochemistry of Uraninites From the Labrador Central Mineral Belt

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Hydrothermal fluid chemistry ultimately affects the partitioning of trace elements into uranium minerals. Therefore, determination of trace element concentrations and ratios in uraninites can be used as a means of discriminating the metallogenic origins of uranium deposits. In general, magmatic uraninites appear to contain elevated Th and REE contents, whereas hydrothermal and low temperature uraninites have lower or variable (as shown by average crust-normalized REE patterns) contents. We “mapped” the uranium-bearing phases present in polished thin section samples from a number of uranium occurrences in the Labrador Central Mineral Belt (LCMB) using the Memorial University MLA-SEM facility. Subsequently, we then analyzed the trace element (Rb, Sr, Y, Zr, Nb, REE, Hf and Ta) compositions of these uranium phases via LAM-ICP-MS. Preliminary results indicate that the average crust-normalized REE patterns of uraninites display convex light REE-depleted patterns, suggesting at least two mineralizing fluids were active within the CMB. We ultimately hope to develop a catalogue of trace element and REE patterns for the uranium-bearing phases from throughout the CMB.