

## **Towards a 3D Quaternary and Neogene stratigraphic model of the Highland Valley Copper mine area, South-Central British Columbia**

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Highland Valley Copper (HVC) is a large porphyry Cu-Mo system in British Columbia that is partially covered by more than 200 meters of Quaternary and Neogene sediment. Geochemical pathfinder elements and indicator minerals have been identified in the surface sediment and can be traced back to shallow, mineralized sources. In areas where mineralization is more deeply buried, however, little is known of the composition and physical properties of indicators in the overlying sediment; this has implications for defining dispersal patterns throughout the transported cover and for geophysical inversion efforts. Three out of nine sonic drill-cores have thus far been logged to define the three-dimensional sediment stratigraphy at HVC. The drill-cores are located at distances ranging from 61 to 97 meters from the southeastern wall of the Valley pit. Drill-core interpretation focuses on facies analysis and stratigraphic correlation, as well, the lithology of the pebbles has been classified to establish provenance and the till units have been analyzed for magnetic susceptibility. Preliminary results suggest a complex stratigraphy that differs at depth from previously established interpretations, which suggests that lateral facies transition over short distances and depositional units vary in spatial extent. The sediment cover is, therefore, expected to be highly heterogeneous both in terms of composition/provenance and geophysical characteristics. NSERC-CMIC Footprints Exploration Project Contribution #127.