***Reman A, Ross M, 2016, Towards a Quaternary stratigraphic framework of the Highland Valley Copper mine area, south-central British Columbia, Abstract, PDAC-SMC, Toronto, ON***

The Highland Valley Porphyry Cu-Mo-Au system in B.C. is the largest known porphyry system in Canada. There are currently 5 known ore bodies, which are at the core of the Upper Triassic Guichon Creek Batholith. The mine consists of several large and deep pits, but some ore bodies remain covered by thick unconsolidated sediments, mostly of Quaternary age, with the base extending into pre-Quaternary times. There is great interest in characterizing these sediments to 1) determine whether there is a footprint of the buried mineralized zones in that cover, and also to 2) estimate the effect these sediments have on geophysical data characterizing the physical properties of the underlying bedrock. The purpose of this study is to investigate the stratigraphy and sedimentology of the unconsolidated sediment successions overlying the footprint area with the goal of improving understanding of its potential impact on surficial footprint studies (e.g. till geochemistry) and geophysical characterization of the footprint. This study will advance our knowledge of the Late Cenozoic / Quaternary depositional history, and could enhance exploration methods for finding other elusive low-grade Cu deposits under thick sediment cover at Highland Valley or in other similar settings. The methodology focuses on detailed sedimentological descriptions of three existing drillcores, 124 to 235 metres deep, from the site provided by Teck Resources. The resulting stratigraphic logs will be integrated with available data and topographical and surficial geology maps from government geological surveys. All available data and maps will first be compiled and integrated in a 3D geomodeling environment (Gocad Suite) for visualization and spatial analysis. Laboratory analyses will focus on textural (e.g. grain size) and compositional (e.g. lithology and geochemistry) characteristics.

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