

Potential for Low-Grade, Intrusion-Related Mineralization in the Kirkland Lake Gold Camp

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Abstract

The 572.6 ha Upper Beaver Property owned by Osisko Mining Corp., is located within the northeastern Gauthier Township approximately 25km west of the prolific Kirkland Lake Gold Camp. This world-class gold mining district is situated within a section of the Abitibi greenstone belt of the Superior Province. Historically, a total of 140,700 oz of gold and 11,955,310 lbs of copper from 526,680 t at 8.31 g/t Au have been mined from the Upper Beaver property. Mineralization is spatially related with the Upper Beaver Intrusive Complex, composed of predominantly Timiskaming-aged (2690 – 2670 Ma) syenites, and exhibits pervasive magnetite-feldspar-actinolite-epidote-carbonate-sericite alteration. The Upper Beaver deposit represents a unique style of mineralization, encompassing both a magmatic hydrothermal model, typical of Kirkland Lake, as well as syenite-associated model, similar to Osisko's Canadian Malartic property. This project will use data collected through ICP-OES and ICP-MS to determine geochemical trends of syenite samples from Upper Beaver and the Kirkland Lake area. Compilation of a regional database will aid in understanding the relationships and associations between different gold deposits across the Kirkland Lake camp. The results of this project may indicate a linkage between mineralization-associated syenites at Upper Beaver and syenites located across Kirkland Lake. As Osisko owns an extensive ~230 km² semi contiguous area spanning multiple townships in Kirkland Lake, locations of interest uncovered in this project can be further analyzed in the future.