

The Petrology and Geochemistry of the Lac des Iles Dike Suites, Northwestern Ontario

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This project includes a detailed study of the various dike suites recognized in and around the Lac des Iles palladium deposit in order to constrain the timing on their emplacement and petrogenesis. Previous mapping suggests that there are multiple dike suites, some of which post-date mineralization and others have more ambiguous relationships with the mineralized intrusions. There are multiple possible igneous events documented in the region that could be related to dikes, including the 2490–2408 Ma Matachewan and Mistassini dike swarm events, Geon 15 igneous complexes, or the 1.1 Ga Midcontinent Rift and resolving the origin of the dike swarm to identify ones which are coeval with LDI and can provide insight into the tectonic setting at the time of emplacement.



Mapping and interpretation of dikes in and around the LDI mine: Surface mapping in order to characterize cross-cutting relationships, relative timing of dikes and degree of deformation and metamorphism.

Drill Core Sampling: dikes ranging in compositions from felsic to mafic, from previous drill holes have been sampled to be used for whole rock geochemistry and petrology.

Geochronology: U-Pb dating of the various intrusive units to supplement existing data sets and further constrain the magmatic evolution of the area.