

**Petrographic Investigation of Two Float Samples from the Goldstake Property,
Northern Ontario**

**Prepared for:
Mr. Robert Dillman**

by

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Summary

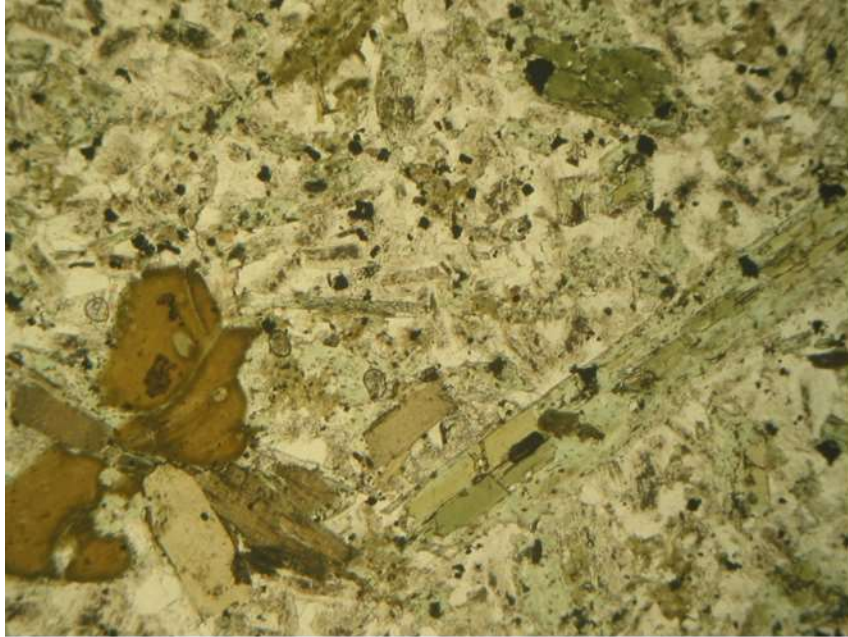
This report is based on two samples of float representing potential kimberlitic rocks from Northern Ontario. The rocks were submitted by Mr. Robert Dillman for detailed petrographic investigation to detail mineral textures relating to kimberlitic and lamprophyric rocks.

The rocks were cut and polished and thin sections were made. Samples were carbon coated and examined in transmitted and reflected light with a Zeiss petrographic microscope. Regions of interest were photographed and circled with a diamond scribe to enable relocation of the selected areas when in the microprobe. Samples were examined in detail using the Energy Dispersive System (EDS) on the microprobe. Images of relevant and interesting mineralogical and textural relationships were collected digitally.

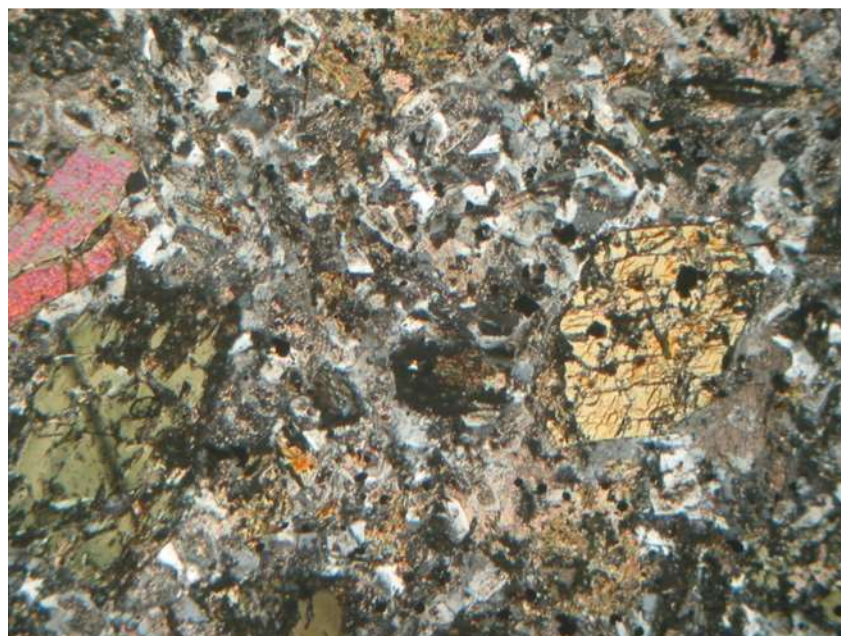
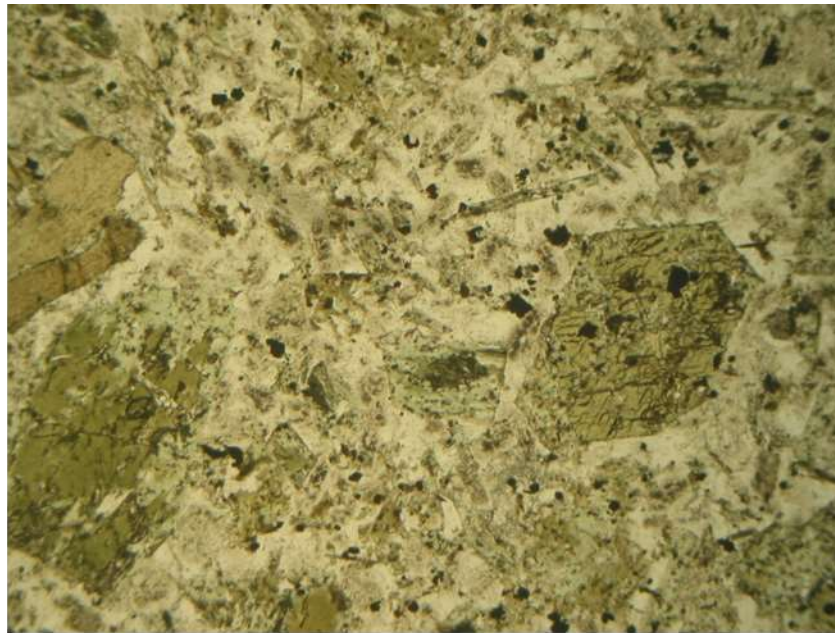
Goldstake 1a,b:

The rock is 10-15% coarse grained pale brown to green pleochroic igneous hornblende-amphibole phenocrysts in a finer even grained groundmass consisting of randomly oriented, simply twinned plagioclase feldspar. There are also coarse clusters of biotite phenocrysts as clots throughout the section. In addition to these clots are individual grains of amphibole and biotite throughout. Feldspars throughout the matrix are 30-40% consumed by fine-grained carbonate (calcite) and white mica. It is apparent the sample has experienced a degree of low grade retrogression evident by amphiboles retrogressed to chlorite and white mica. There are late stage patches of coarse-grained calcite and pyrite in late stage coarse-grained patches interpreted to represent late stage cooling gases. The random orientation of both the coarse grained amphibole and biotite platelets, is in accord with the random orientation of the much finer grained plagioclase feldspars. Throughout the groundmass are Mn-ilmenite and Cr-Ti-magnetite. The interpretation is that this rock represents a rapidly quenched volume of magma and due to its porphyritic nature likely represents a sample of a quartz-feldspathic-amphibole-biotite lamprophyre dike. The likelihood of this rock have kimberlitic possibilities is unlikely.

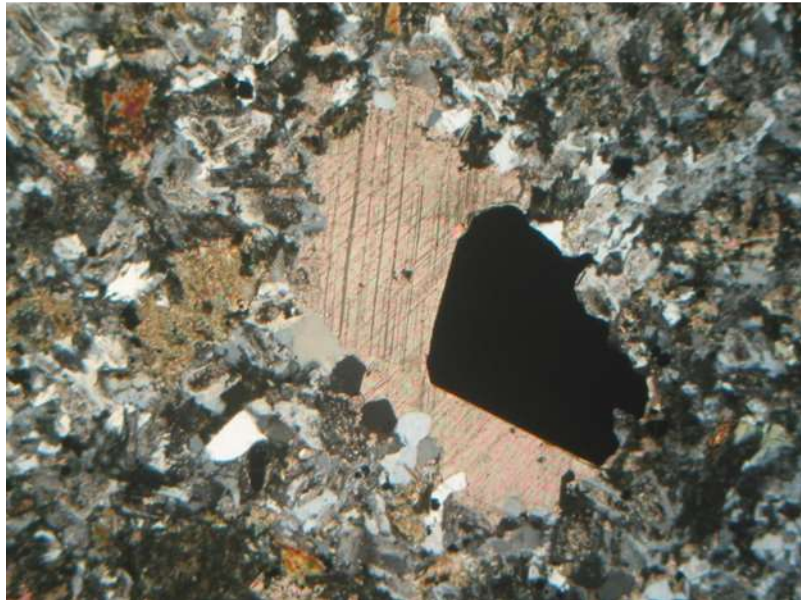
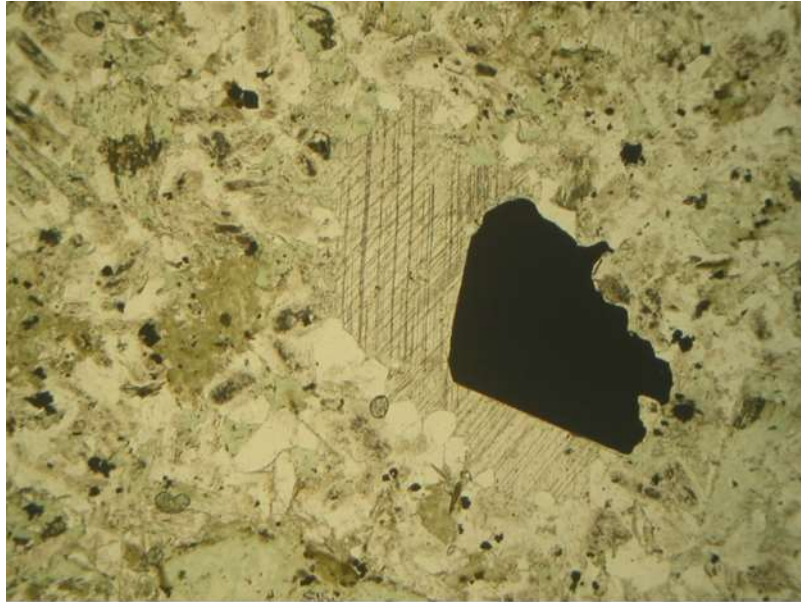
In summary the textures and mineralogical relationships, the sample is derived from a rapidly quenched body of magma with very limited kimberlitic potential.



Radial cluster of biotite-phlogopite solid solution and lath shaped amphibole phenocrysts in a matrix dominated by finer-grained, randomly oriented plagioclase feldspar.



Typical region of groundmass demonstrating degree of retrogressive alteration. The deep green hornblende amphibole (bottom left) is replaced by pale green chlorite. Feldspars throughout are replaced by fine-grained birefringent muscovite.



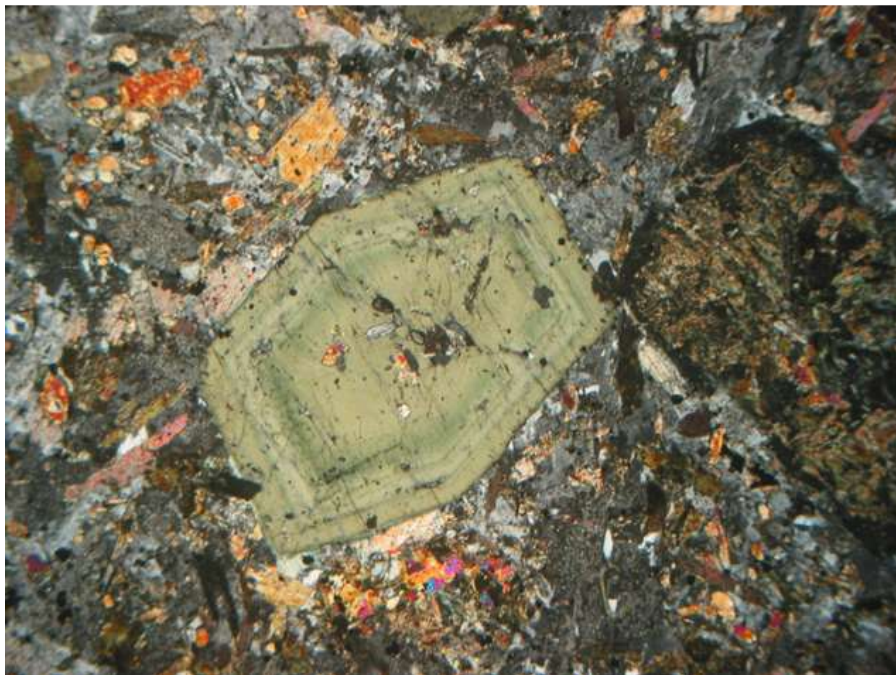
Concentration of coarse pyrite and calcite within a finer-grained more typical matrix of the sample. These isolated regions are considered to represent rapid mineral growth from later stage magmatic/hydrothermal fluids.

Goldstake 2a,b:

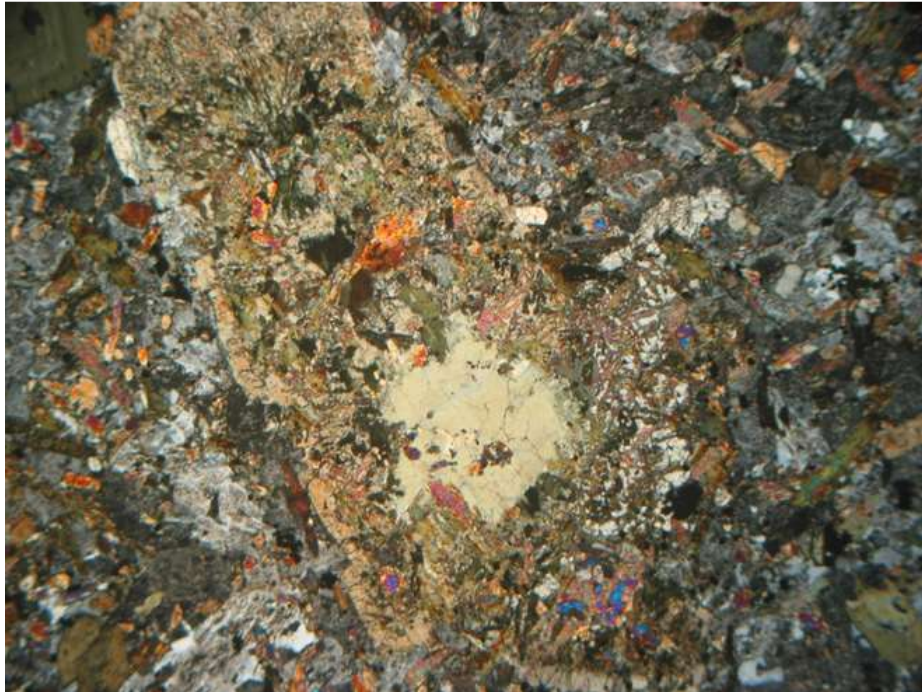
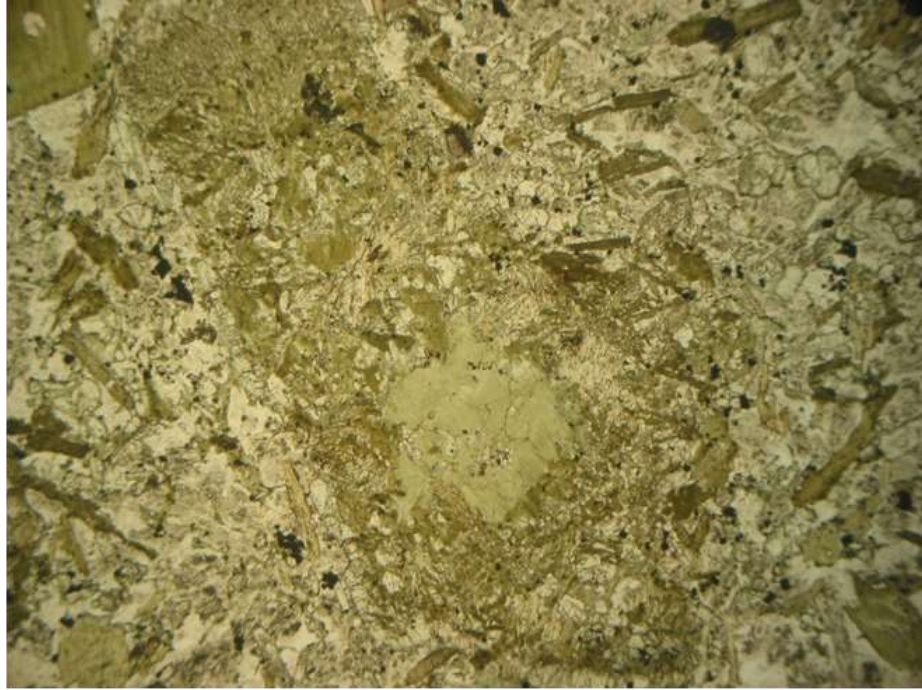
This sample is similar to sample 1 in that it has a porphyritic texture consisting of coarse grained phenocrysts of hornblende amphibole with microphenocrysts of deep green pleochroic biotite-phlogopite solid solution. These phenocrysts are intergrown with a matrix of 50-60% randomly oriented plagioclase feldspar (An15-35). Individual amphibole phenocrysts show concentric zonation representing compositional variation at the magmatic stage. This sample in its abundance of coarse amphibole phenocrysts with abundant much finer-grained mica platelets has a texture distinct from sample 1 that contained an abundance of coarse mica and amphibole phenocrysts. On rare occasions, certain amphibole grains present a basal section orientation and display a very interesting colour and compositional variation. This sample also contains late stage calcite clots. There is distribution of 3-4% minute grains of blocky Al-spinel with occasional ilmenite.

This particular sample contains an interesting angular clot in with internally consistent mineralogy and texture distinct from the host. This clot contains one coarse amphibole phenocryst in a matrix of 60-70% amphibole intermixed with feldspar. There is another interesting clot that consists of coarse amphibole phenocrysts in a finer grained matrix with abundant mica that appears to comprise a discrete fragment of earlier stage magmatic material since broken up and entrained in a subsequent magma. The interpretation is that this rock represents a rapidly quenched volume of magma and due to its porphyritic nature likely represents a sample of a quartz-feldspathic-amphibole-biotite lamprophyre dike. The likelihood of this rock having kimberlitic possibilities is unlikely.

In summary the textures and mineralogical relationships, the sample is derived from a rapidly quenched body of magma with very limited kimberlitic potential.



Concentric colour zonation within a zoned hornblende amphibole phenocryst. Note the concentration of birefringent red-orange, finer-grained biotite phlogopite solid solution microphenocrysts.



Interesting angular fragment consisting of a coarse amphibole phenocryst within a matrix of abundant green-brown mica (60-70%) and feldspar. This is interpreted to be a fragment of disrupted earlier stage material from depth.