

## **Provenance of volcanoclastic detritus from Sites U1507 and U1508, Zealandia continent**

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Drilling at Sites U1507 and U1508 by IODP Expedition 371 recovered volcanoclastic sediments <36 Ma from the New Caledonia Trough, and <25 Ma from the Reinga Basin, according to biostratigraphic ages. The volcanic sediment contain medium to coarse sand-size grains of clinopyroxene, amphibole and plagioclase at Site U1507, and medium sand grains of amphibole and plagioclase at Site U1508. We analyzed in situ major and trace element components of those minerals and in situ Sr isotopes in plagioclase. Clinopyroxenes from Site U1507 have high Mg number (92-72) and low Na content at high Mg number, reflecting an origin from basaltic volcanic rocks. Major elements of clinopyroxenes indicate a transitional nonorogenic setting to orogenic setting. Trace elements of clinopyroxenes indicate a depleted mantle source with metasomatism by an enriched subduction component. Low Na<sub>2</sub>O, Zr, Nb of amphiboles from Site U1507 also show a transitional nature between intraplate and subduction compositions. Sr isotope ratios of plagioclase (0.7027-0.7031) from U1507 indicate a moderately depleted source. In contrast, amphiboles from Site U1508 have unambiguous subduction related affinities, along with higher Sr isotope ratios of plagioclase. The age and composition of the U1508 volcanic grains tentatively point to an Oligocene-Miocene Northland Arc source.

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