A note on the occurrence of gold in the Ilímaussaq alkaline complex, South Greenland

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Single grains of gold measuring 22 µm have been found in analcime veinlets intersecting concentrations of pyrrhotite, pyrite and marcasite in the lowermost part of layer +16 red of the kakortokite sequence in the southernmost part of the Ilímaussaq alkaline complex (Davison 1989). The kakortokite sequence consists of a repetition of units of lower black layers rich in arfvedsonite, red layers rich in eudialyte and white layers rich in microcline (cf. Sørensen 2001, this volume, for a review of the geology of the Ilímaussaq complex). Layer +16 red is the most prominent eudialyte-rich layer of the complex. The identification of the gold grains was verified by SEM - Energy dispersive X-ray analysis (Fig. 1).

Flotation concentrates of the sulphide minerals show 8.8 g/t gold (Davison 1989). A number of kakortokite samples have been analysed for gold by atomic absorption spectrometry of 5 g samples decomposed in aqua-regia, detection limit 10 ppb gold, most with a negative result (Le Couteur 1990). The samples of layer +16 red all showed < 10 ppb gold. Up to 50 ppb gold was found in layer B red of the transitional layered kakortokite (Bohse & Andersen 1981).

Samples of lujavrite from the Kvanefjeld area in the northern part of the complex have been analysed for gold by direct current plasma determination of metal in a fire-assay bead. Fifteen out of 42 samples gave more than 2 ppb, and the highest content found was 10 ppb (Tilsley & Fisher 1983).

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References


