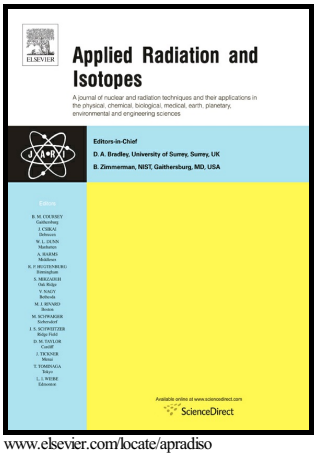

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Determination of ^{210}Pb, ^{210}Po, ^{226}Ra, ^{228}Ra and uranium isotopes in drinking water in order to comply with the requirements of the EU 'Drinking Water Directive'

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Abstract

The European Union published in 2013 a new Drinking Water Directive with stricter requirements for measuring natural radioactivity. In order to adhere to this, a method for sequential separation of ^{210}Pb, ^{210}Po, ^{238}U and ^{234}U in drinking water was applied using UTEVA® and Sr resins. Polonium-210, ^{238}U and ^{234}U were quantified using alpha-particle spectrometry and ^{210}Pb using liquid scintillation counting. Radium-226 and ^{228}Ra were determined using 3M Empore Radium RAD Disks, and their quantification was done using a Quantulus™ 1220 liquid scintillation counter.

Keywords: drinking water directive, natural radioactivity, ^{210}Pb, ^{210}Po, ^{226}Ra, uranium isotopes

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