



# **$^{60}\text{Co}$ sorption onto bentonite clay**

## **Background**

The used nuclear fuel from the Swedish nuclear power plants will be put into a final repository, to be built close to the Forsmark NPP site. The repository relies on a number of barriers for retaining the highly radioactive waste: a copper cannister, bentonite clay and finally the surrounding bedrock. For the barrier material bentonite clay the diffusion and sorption of radionuclides are of interest in order to estimate the release rate in case that the copper cannister is broken and the waste is in direct contact with the groundwater

## **Project Description**

In this project you will conduct laboratory experiments with batch sorption of  $^{60}\text{Co}$  onto bentonite clay. The experiments will be made in batches with simulated groundwater and bentonite clay at different temperatures, from 20 up to 80°C. The temperature is what can be expected from the heat generated by the spent nuclear fuel. Samples for radioactivity measurements will be taken from 1 day up to 3 months with regular intervals. The sorption data will be compared with in-situ experiments that have been made in the Äspö tunnel, close to Oskarshamn NPP.

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