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Room: Exhibition hall 7 subroom 1

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In-situ experiment for redox buffer capacity in the subsurface environment of Horohobe URL site

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The redox conditions are of consequence for the performance of geological disposal of high-level radioactive waste. The oxidized condition would affect the corrosion of canisters and the migration of radionuclides eventually released from a damaged canister. The mechanisms and the rate of biochemical reduction regarding the preservation of reducing condition of geological environments are therefore an indispensable research subject.

An in-situ experiment for redox buffer capacity in the subsurface environment of Horonobe Underground Laboratory was performed. Dissolved Oxygen was quickly consumed, and reducing condition was reformed by water-rock-microbes system.

Keywords: Horohobe Underground Research Laboratory, redox buffer capacity, in-situ experiment, sedimentary rocks, water-rock-microbes system