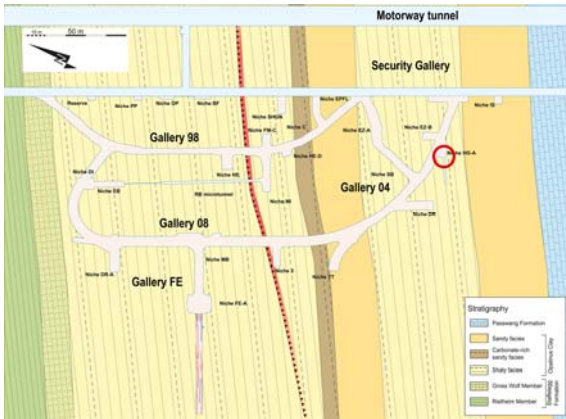




1 Gas processes and gas flowpaths



Objective: A storage container will corrode, releasing hydrogen gas. How does the gas behave? Does it dissolve in pore water or even cause fissures/fractures?

Procedure: Drill observation boreholes; install measuring devices. Bore micro tunnel (13 m); fill the last 4 m with gravel. Saturate the consolidated gravel with salt water; inject gas (nitrogen). Measure: pore water pressure, deformations, seismic tomography.

Results: Gas dissolves in the pore water, but can also displace water; slow widening of the bedding planes and storage of gas in them. No gas cracks so far. Opalinus Clay maintains its retention capability.

Start: 2003
End: 2015
Project Partners: ANDRA, BGR, NAGRA, NWMO
Cost: around CHF 3 million