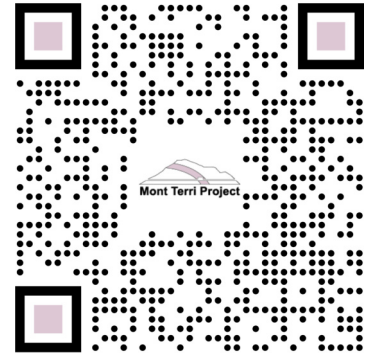
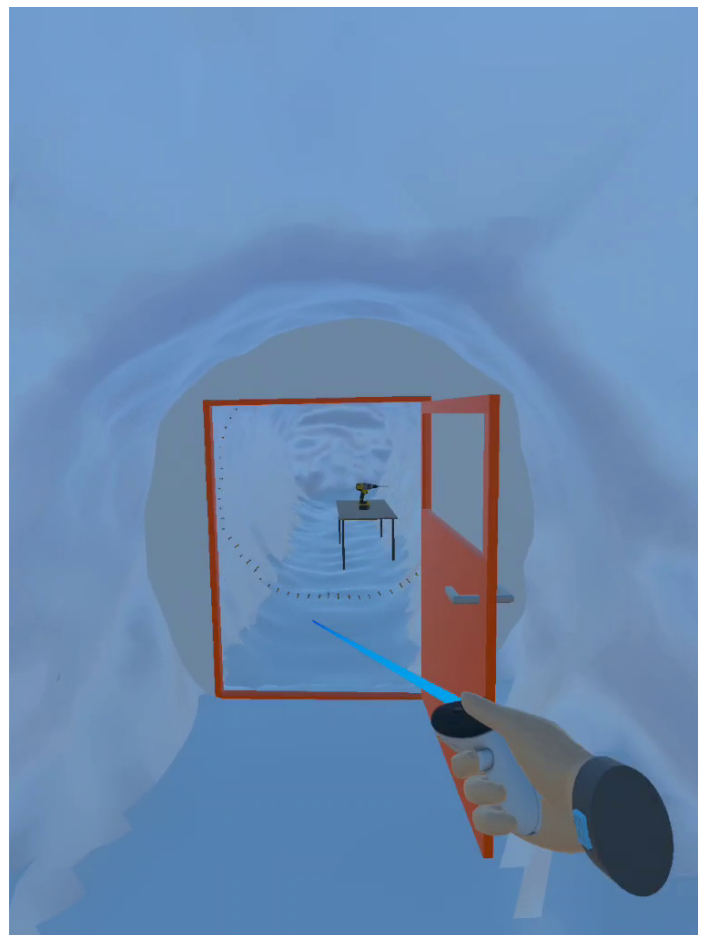
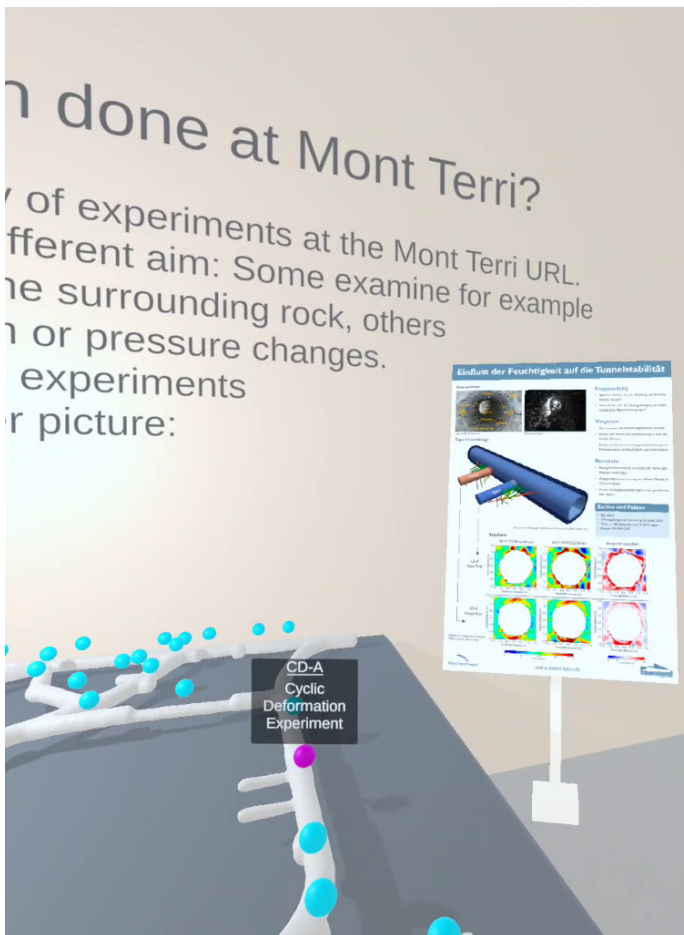


# Mont Terri Project Underground Rock Laboratory



Report period: February 5–11, 2024

Assembled and edited by swisstopo, St-Ursanne



**Spotlight of the week:** Within VR-A, the Helmholtz Centre for Environmental Research (UFZ) is developing interactive visualizations in virtual reality for the Mont Terri underground laboratory. In recent projects, a focus lay on cooperations with the BGR concerning visualizations of the CD-A experiment. Currently, a serious game is developed to communicate research methodology and results of the electrical resistivity tomography in the twin niches to the broad public. The medium chosen for this serious game is immersive virtual reality, creating the benefit of engaging participants in the actual work of researchers - from the experiment's planning to implementation to result visualization and analysis.

## CD-A (Influence of Humidity on Cyclic and Long-Term Deformations) experiment

- From Monday to Tuesday, February 5–6, M. Middelhoff, B. Zehle and V. Gillich (GRS) drilled two boreholes (BCD-A30 and BCD-A31, inclination 30 degrees) into the front of the Niche Closed Twin and installed piezometers at 2.5 and 5 m, respectively (**Figure 1**).

## CL (CO<sub>2</sub>LPIE-CO<sub>2</sub> Long-Term Periodic Injection) experiment

- On Monday, February 5, S. Braunschweig and F. Durulan (Eul GmbH) installed the drill rig for BCL-7 and S. Schefer (swisstopo) oriented it parallel to BCL-5 (**Figure 2**).
- On Monday, February 5, T. Theurillat (swisstopo) attached the injection and degassing lines for BCL-5.
- From Tuesday to Wednesday, February 6–7, S. Braunschweig and F. Durulan (Eul GmbH) drilled BCL-7 down to 14.4 m (diameter 101 mm, orientation 327/33).
- From Tuesday to Thursday, February 6–8, P. X. Meury (Géo&Environnement), C. Marion (Eawag) and J. Windisch (swisstopo) did the core mapping and took samples for determining water content, rock density, etc. The samples were sealed in aluminium and/or plastic bags (**Figure 3**).
- From Wednesday to Friday, February 7–9, D. Novotny, A. Engelke, A. Gölsner and M. Kreutz (BGR) transported all their material, tested the probe and performed pneumatic measurements inside BCL-7 (**Figure 4**).
- On Thursday, February 8, S. Braunschweig and F. Durulan (Eul GmbH) ground the last 10 cm of BCL-7 down to its final depth of 17.5 m and performed a reaming of the top 8 m of the borehole to 104 mm.

## DR-D (Heterogeneity of Sandy Facies by Geophysical Characterization and Diffusion Studies) experiment

- On Wednesday, February 7, Y. Lettry and K. Lehner (Solexperts) installed the control unit, the circulation module and argon gas bottle and the data acquisition computer close to the location of DR-D3. They also connected the computer to the network and delivered the packer system.

## FS-E (Distributed Hydromechanical Response during Fault Damage and Fault Self-Sealing Evolution) experiment

- On Tuesday, February 6, M. Rutschi (Neubrex) measured the fiber-optical sensor cables of BPF-7.

## HE-F (Gases & Watersoluble Organic Compounds in OPA at Elevated T/p) experiment

- On Thursday, February 8, C. Dubois and L. Broquet (ATB) marked the position and orientation of BHE-F3.
- From Thursday to Friday, February 8–9, A. Engelke, A. Gölsner and M. Kreutz (BGR) started installing the drilling rig for the upcoming borehole BHE-F3 starting on Monday.

## HT (Hydrogen Transfer in Opalinus Clay) experiment

- On Wednesday, February 7, Y. Lettry (Solexperts) removed the computer from the HT-cabinet for repair.

## SW-A (Large-Scale Sandwich Seal in Opalinus Clay) experiment

- On Tuesday, February 6, T. Theurillat (swisstopo) refilled the HPT of shaft 1.
- On Thursday, February 8, T. Theurillat (swisstopo) refilled the HPT of shaft 1.

## Visits

Day	Date	Group Name	Group Size	Visitors Guide
Mon	5.2.2024	Nukleartechnikerschule Baden	7	R. Nicol (swisstopo)
Tue	6.2.2024	ETHZ, Group SMILE	16	M. Ziegler (swisstopo)

## Figures

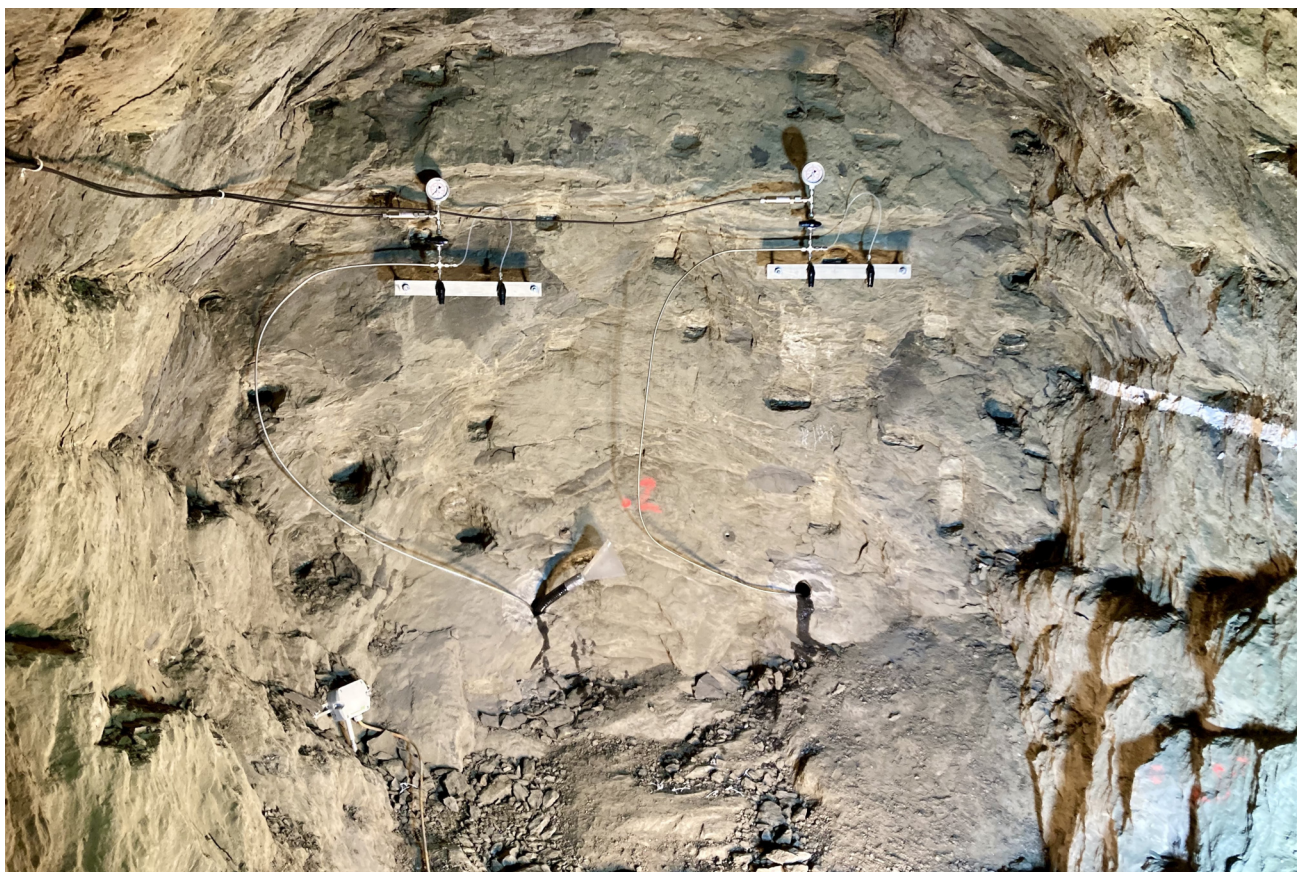


Figure 1: CD-A: The completed installation inside the Closed Twin (S. Schefer, swisstopo).



Figure 2: CL: The drill rig is perfectly parallel to BCL-5 (S. Schefer, swisstopo).



**Figure 3: CL:** Preparing the core for photo documentation (S. Schefer, swisstopo).



**Figure 4: CL:** Inserting the heavy pneumatic probe into BCL-7 is a team effort (S. Schefer, swisstopo).