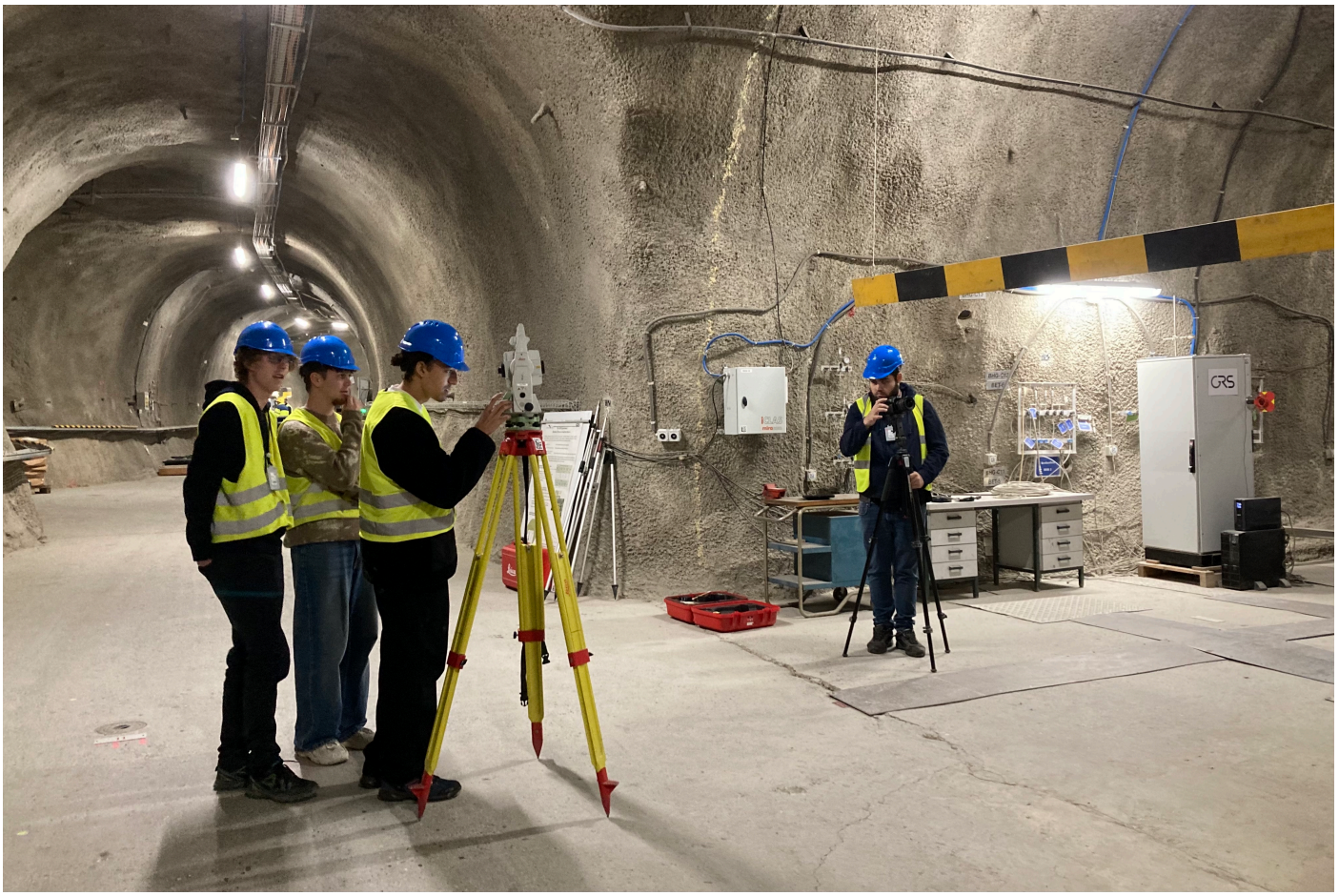
Mont Terri Project
Underground Rock Laboratory

Report period: May 26, 2025 – June 8, 2025

Assembled and edited by swisstopo, St-Ursanne



Spotlight of the week: R. Meier, Y. Magne, F. Hirsiger and N. Tester, four last year apprentices of swisstopo visited the lab. Together with S. Schefer and M. Abdelouhabi (swisstopo) they performed laser scanning and photogrammetry in the niche CS-A. The two resulting models were geo-referenced and then compared for accuracy and easy of use. In the picture you see the tachymetric measurements for the reference points and the production of the photogrammetric model (Figure S. Schefer, swisstopo).

BIM (Mont Terri Building Information Modeling) experiment

- On Monday, June 2, S. Volken and S. Schefer (swisstopo) resolved many of the differences between the BIM database and Fulcrum.

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

- On Thursday, June 5, S. Schefer restarted the psychrometric measurements after an electrical failure in the cabinet.

CL (CO2LPIE-CO2 Long-Term Periodic Injection) experiment

- On Tuesday, June 3, M. Ziegler and D. Jaeggi (swisstopo) took seven samples with IDs 2104-2110 from the five intervals of BCL-10.
- On Tuesday, June 3, S. Braunschweig, F. Durulan (Eul GmbH), T. Theurillat, M. Ziegler, D. Jaeggi (swisstopo), J. Gisiger and A. Jakupi (Solexperts) successfully retrieved the monitoring 5-fold multi-packer system from borehole BCL-10 (**Figure 1**).
- On Wednesday, June 4, J. Gisiger and A. Jakupi (Solexperts) installed three PT1000 sensors and two resin injection lines in BCL-10. The borehole was backfilled with gravel and will be resined next week. Note that BCL-10 must unfortunetly be abondoned as borehole redrilling/reaming led to unexpected large borehole widening. A replacement location for BCL-10 will soon be discussed and allows for clean installation of the new multipacker sampling system.

CS-E (Mini-Fracturing and Sealing) experiment

- On Tuesday, June 3, P. Annan and D. Zbinden (ETHZ) installed a 100 l extension vessel to the CO_2 mixing tank, which can be used to refill the mixing tank using the ISCO pump. They tested the refill process and pressurizing the mixing vessel. A time lapse GPR profile was conducted at 18.6 m in BCS-D6.
- On Wednesday, June 4, P. Annan and D. Zbinden(ETHZ) configured fibre optic strain monitoring of CS experiment using Rayleigh TW-COTDR on the Neubrex interrogator. GPR profiles were conducted to target the main fault zone in BCS-D6 and BCS-D5. They started a mini-stimulation in BCS-D1 interval Q2 at 15:00. Fault zone in target interval was very tight, meaning pressures were sustained at 8500 kPa before fault reactivation initiated. GPR profiles were run in BCS-D5 during recovery between hydraulic tests. Constant pressure injection was restarted at 5100 kPa around 20:00. The Neubrex interrogator will continue to acquire measurements for around one week following the mini-stimulation.

DR-C (Diffusion in a Thermal Gradient) experiment

- On Tuesday, May 27, Y. Lettry (Solexperts) was on site to increase the temperature in BDR-C1 to 69°C.

FE-M (Long-Term Monitoring of the Full-Scale Emplacement Experiment) experiment

- On Tuesday, May 27, A. Guzik (Neubrex) removed Nagras Neubrex computer for maintenance.

FS-B (Imaging the Long-Term Loss of Faulted Host Rock Integrity) experiment

- On Monday, May 26, M. Abdelouhabi and S. Schefer (swisstopo) marked the position and orientation for BFS-B14b. It will be above the main fault and reach a depth of 70 m.
- On Tuesday, May 27, J. Gisiger and H. Geisser (Solexperts) performed grout injection in BFS-B14. No casing was installed. Only instrumention is a pore water pressure sensor at about 23 m. This borehole was abandoned at 42 m due to a borehole collapse at around 24 m depth (**Figure 2**).
- On Friday, June 6, S. Schefer (swisstopo) restarted the DORSA acquisition system.

PF-A (Progressive Evolution of Structurally-Controlled Overbreaks: Long-term monitoring, hydromechanical simulation and rock testing) experiment

- On Wednesday, May 28, M. Ziegler (swisstopo) measured absolute strain on fibre loops 2 and 5 of borehole BPF-7 using PPP-BOTDA.

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

- On Tuesday, May 27, the HPT attached to the borehole BSW-A1 has been refilled by T. Theurillat (swisstopo).
- On Thursday, June 5, T. Theurillat (swisstopo) refilled the HPT of shaft 1.

Varia

- On Tuesday, May 27, S. Schefer and M. Ziegler (swisstopo) received an optical switch board from A. Guzik (Neubrex Infra) and got trained some basics on the NBX-7031 interrogator.

Visits

Day	Date	Group Name	Group Size	Visitors Guide
Mon	26.5.2025	**Sekundarschule Binningen**	26	H. Hauser (freelance) R. Nicol (swisstopo)
Mon	26.5.2025	**Université De Neuchâtel, CHYN**	9	S. Schefer (swisstopo)
Mon	2.6.2025	**Thales Simulation & Training**	14	R. Nicol (swisstopo)
Tue	3.6.2025	**Iii = Interessiert, Informiert, Involviert**	16	A. Lambert (freelance9
Wed	4.6.2025	**OSZ Rittermatte Biel**	32	H. Hauser (freelance) R. Nicol (swisstopo)
Thu	5.6.2025	**Coordination Romande Des Délégués Au Climat**	10	R. Nicol (swisstopo)
Fri	6.6.2025	**Geotechnische Aspekte Bei Der Endlagerung Von Radioaktiven Abfällen**	34	H. Sager (Nagra) T. Vogt (Nagra)
Fri	6.6.2025	**Collège De St-Maurice**	41	G. Brusatin (freelance) R. Nicol (swisstopo)

Figures

Figure 1: CL: Removing the installation from within BCL-10 (S. Schefer, swisstopo).

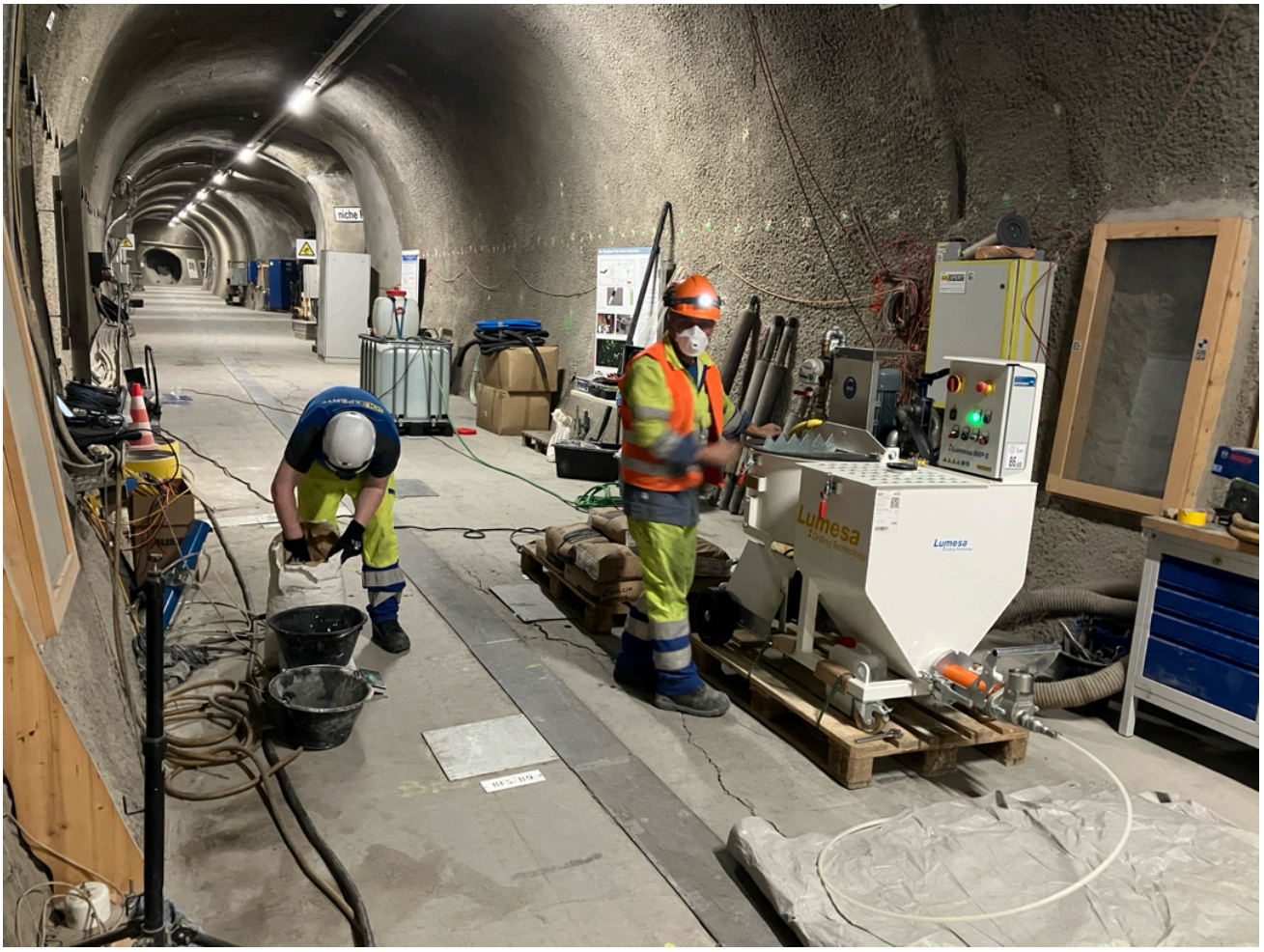


Figure 2: FS-B: Solexperts team performing the grouting (S. Schefer, swisstopo).