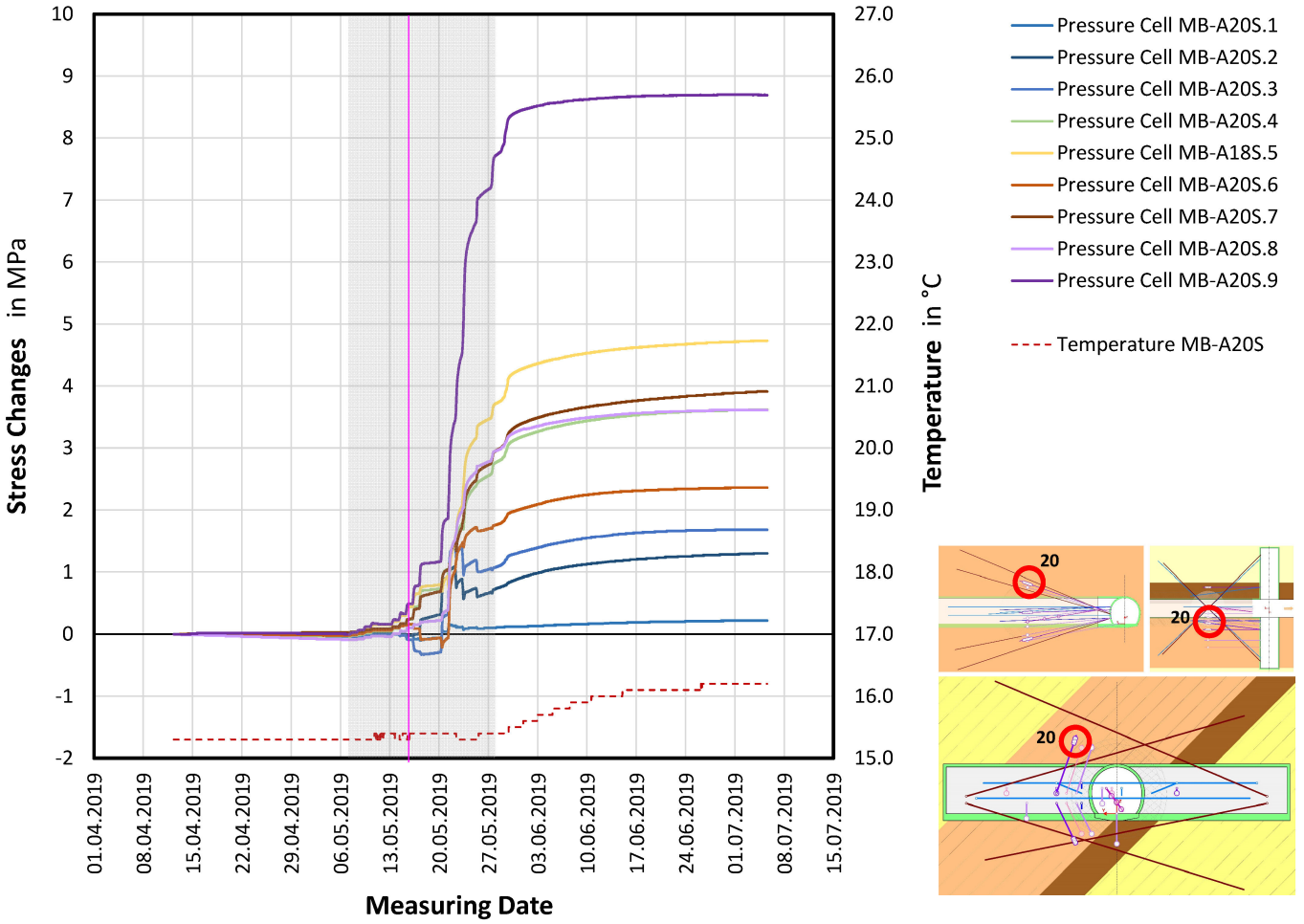
Mont Terri Project
Underground Rock Laboratory

Report period: February 19–25, 2024

Assembled and edited by swisstopo, St-Ursanne



Spotlight of the week: The experiments MB-A and MB-B are designed to characterize the sandy facies of the Opalinus clay regarding its mechanical und hydraulic behaviour. Within the MB-A experiment the rock mass response to the excavation of Gallery18 was observed by measuring the deformations as well as changes in pore pressure and rock stresses. Because instrumentation and start of measurements were done months before excavation went through the investigation area, we were able to record the relevant processes before, during and after the excavation. Based on the comprehensive measurement data the excavation process and the changes in the rock mass will be simulated in MB-B in order to determine the parameters of the surrounding rock mass and to validate the used numerical models.

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

- On Monday, February 19, T. Theurillat (swisstopo) began to test the tightness of the packer that will be installed into borehole BCL-8.
- From Tuesday to Wednesday, February 20–21, S. Braunschweig and F. Durulan (Eul GmbH) drilled borehole BCL-8 to 17.25 m, did a grinding to its final depth of 17.48 m and reamed the top 8 meters.
- From Tuesday to Wednesday, February 20–21, P. X Meury (Géo&Environnement) and J. Windisch (swisstopo) did the core mapping with help of C. Zwahlen and J. Ma (Uni Bern) and took some samples for squeezing and diffusion tests. The samples were sealed in aluminum respectively plastic bags (**Figure 1**).
- From Thursday to Friday, February 22–23, the BGR team consisting of D. Novotny, M. Kreutz and A. Gölzner performed pneumatic measurements in borehole BCL-8.

CS-E (Mini-Fracturing and Sealing) experiment

- On Friday, February 23, K. Tuinstra and M. Nuus (ETHZ) carried out a round of shots in D5, monitored with geophones and DAS and afterwards re-installed the DSS.

HS (Hydrogeological Survey of the Mont Terri Anticline) experiment

- On Thursday, February 22, D. Jaeggi (swisstopo) exchanged the autonomous pore pressure data logger at borehole BHS-3. The recorded pressure at the well head was 5.1 bar and had to be released again due to this exchange. After re-equilibration next week a pulse test will be performed and the crosshole response monitored at BHS-1 uppermost intervals.

SI-B (Seismic Imaging of Structures Below the Mont Terri Tunnel and Rock Laboratory) experiment

- On Thursday, February 22, in preparation of seismic investigations imaging the Mont Terri Anticline, B. Wawerzinek and S. Lüth (GFZ) scouted the forest and farming roads above the laboratory, guided by T. Theurillat (swisstopo), in order to identify the potential locations of profiles for the operation of a seismic vibro truck.

SM-C (Permanent Nanoseismic Monitoring) experiment

- On Monday, February 19, I. Gutierrez and E. Meier (EMP) were calibrating the Hydrostatic Leveling System (HLS) probes by using the touch point method in Ga98 (**Figure 2**).

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

- On Monday, February 19, Th. Theurillat (swisstopo) replaced the gas bottle attached to the borehole BSW-A1.

Visits

Day	Date	Group Name	Group Size	Visitors Guide
Tue	20.2.2024	**BS CH InfraRoom / Ar Immo**	12	D. Jaeggi (swisstopo)

Figures

Figure 1: CL: Borecores of BCL-8 (J. Windisch, swisstopo).

Figure 2: SM-C: HLS calibration south (E. Meier).