Mont Terri Rock Laboratory

Field report: December 14-20, 2020 (Phase 26)

Distribution

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Principal Investigators and Experiment Delegates of Phase 26 experiments

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CS-D (CO₂: Studying Caprock and Fault Sealing Integrity) experiment
- On Thursday, the PI A. Zappone and M. Grab (ETHZ) performed miniRuedi measurements and took a fluid sample. They also removed the active seismic monitoring equipment (Figure 1). This part of the experiment is now concluded.

FE-M (Long Term Monitoring of the Full-Scale Emplacement Experiment) experiment
- On Tuesday, Z. Mussina (Nagra) performed the regular measurements and with the help of C. Nicaty and S. Schefer (swisstopo) refilled the fibre-optic temperature bath (Figure 2).

FS-B (Imaging the Long Term Loss of Faulted Host Rock Integrity) experiment
- On Tuesday, L. Merçay (swisstopo) performed a pulse test inside BFS-B2. He increased the pressure until 35 bar during 5 minutes. It was very hard labour! (Figure 3).

MH (Monitoring of Heaves) experiment
- From Monday to Thursday, F. Dal and S. Gartmann (swisstopo) with the help of N. Artho-Bovard, R. Nicol, L. Merçay and C. Nicaty performed the planned levelling campaign in the security gallery and the entire laboratory (Figure 4).

PF (Progressive Rock Mass Failure and Overbreak Sealing) experiment
- On Monday, C. Nicaty and L. Merçay cleaned the boreholes BPF-2, -4, -5 and -6 in preparation for the seismic measurements of the BGR team (Figure 5).
- On Tuesday, C. Nicaty and S. Schefer (swisstopo) with assistance by M. Ziegler started a photogramometric survey inside BPF-7.
- From Tuesday to Thursday, H. Albers, F. Schulte and T. Tietz (BGR) measured seismic tomography combining all the monitoring boreholes (Figure 6).

SM-C ( Permanent Nanoseismic Monitoring) experiment
- On Friday, E. Meier and G. Morgenegg (EMP) were on site to refill the water inside the hydrostatic levelling system (HLS). They injected 100 ml of water and observed the reaction of the system. This procedure will be repeated several times next year (Figure 7).

SW-A (Large-Scale Sandwich Seal in Opalinus Clay) experiment
- On Thursday, H. Albers (BGR) rearranged the cables and the reinstalled the data logger for the permanent ERT-measurements in BSW-A1.

Varia
- The rock lab will be on its yearly winter break until January 4, 2021. We wish you all a happy New Year!

Visits
- There were no visits this week due to COVID-19 restrictions.

C. Nussbaum and S. Schefer, December 18, 2020
Figure 1: **CS-D**: The PI A. Zappone and M. Grab (ETHZ) removing the active seismic monitoring equipment (Photo: C. Nicaty, swisstopo).

Figure 2: **FE-M**: Z. Mussina and S. Schefer lifting the lid of the fibre-optic temperature bath to refill the water (Photo: C. Nicaty, swisstopo).
Figure 3: FS-B: L. Merçay performs his fitness program during the pulse test (Photo: L. Merçay, swisstopo).

Figure 4: MH: The swisstopo-team during the levelling in Niche TT (Photo: C. Nicaty, swisstopo).
Figure 5: **PF:** L. Merçay (swisstopo) is drying BPF-6 (Photo: C. Nicaty, swisstopo).

Figure 6: **PF:** T. Tietz and F. Schulte (BGR) during the seismic measurements between BPF-3 and BPF-4 (Photo: S. Schefer, swisstopo).
Figure 7: SMC: G. Morgenegg and E. Meier discussing the refilling procedure (Photo: S. Schefer, swisstopo).

The days are getting longer again! Happy holidays to all of you! (Photo: L. Merçay, swisstopo)