



Mont Terri Project

Underground Rock Laboratory

ANDRA BGR CHEVRON CRIEPI DOE ENRESA ENSI FANC GRS HELMHOLTZ IRSN JAEA NAGRA NWMO OBAYASHI RWM SCK•CEN SWISSTOPO TOTAL

Mont Terri Rock Laboratory

Field report: June 3–9, 2019 (Phase 24)

Distribution

Authorities

Swisstopo: P. Bossart, O. Lateltin
BfE: M. Stauffer, Ph. Schaub
RCJU: P. Mertenat, Th. Flüeler, M. Giamboni, J. Fernex, A. Herrmann
EC: Ch. Davies

Delegates of the Project Partners

ANDRA: E. Huret
BGR: K. Schuster
CHEVRON: R. Ewy
CRIEPI: T. Oyama
DOE: P. Nair, J. Birkholzer
ENRESA: J.C. Mayor
ENSI: M. Herfort
FANC: F. Bernier
GRS: K. Wiczorek
Helmholtz: M. Kühn
IRSN: J.-M. Matray
NAGRA: O. Leupin
NWMO: L. Kennell-Morrison
JAEA: K. Tanai
Obayashi: M. Fukaya
RWM: S. Thompson
SCK•CEN: C. Bruggeman
Swisstopo: A. Möri
TOTAL: A. Brisset

Principal Investigators and Experiment Delegates of Phase 24 experiments

ANDRA (E. Huret, G. Armand, A. Albrecht, J. Delay, Y. Linard, S. Necib, A. Vinsot, P. Henocq), BGR (K. Schuster, J. Massmann, S. Costabel, W. Graesle, C. Ostertag-Henning, H. Shao, A. Schippers, J. Hesser, T. Kneuker, G. Ziefele, D. Rebscher), CHEVRON (R. Ewy, H. Goodman), CRIEPI (T. Oyama, S. Yokoyama), DOE (P. Nair, J. Birkholzer, J. Rutqvist, Y. Guglielmi), ENRESA (J.C. Mayor), ENSI (M. Herfort, B. Graupner, J. Hansmann, E. Saraiva, M. Sentis), FANC (F. Bernier, P. De Cannière, B. Guiot, G. Pochet, M. Surkova), GRS (K. Wiczorek, O. Czaikowski), Helmholtz (M. Kuehn, S. Lueth, A. Cherkouk, A. Vieth), IRSN (J.-M. Matray, C. Wittebroodt, P. Dick), JAEA (K. Tanai, K. Aoki), NAGRA (O. Leupin, J. Becker, N. Diomidis, F. Kober, D. Traber, B. Garitte, L. Cantieni, S. Giger, N. Giroud, G. Deplazes, S. Koehler, A. Reinicke), NWMO (L. Kennell-Morrison, S. Briggs, H. Kasani, K. Birch, J. Binns, P. Keech, T. Yang), OBAYASHI (M. Fukaya, Y. Kimura), RWM (S. Thompson, S. Norris, R. McLaverty, R. Hibberd, M. Bailey, J. Pearson, M. Cowley, H. Pairaudeau), SCK•CEN (C. Bruggeman, D. Jacques, M. De Craen, N. Bleyen, N. Maes), Swisstopo (A. Moeri, P. Bossart, S. Condamin, C. Nussbaum, D. Jaeggi, C. Minnig, S. Schefer), TOTAL (A. Brisset)

Supporting Research Organisations

Paul Scherrer Institute PSI: S. Churakov, Th. Gimmi, M. Glaus, L. van Loon
ETHZ: S. Löw, S. Wiemer, A. Zappone, M. Ziegler
EPFL: L. Laloui, R. Bernier-Latmani, B. Lecampion, M. Violay

Project Management

Swisstopo: C. Nussbaum (Project Manager), T. Theurillat (Site Manager), S. Schefer (Dep. Site Manager), D. Jaeggi (Research Associate)
GGT: F. Burrus (Project Engineer), Th. Küttel, R. Daneluzzi

Construction of Gallery 18

- On Monday morning the renovation work in Niche 7 and the adjacent tunnel behind Niche TT started (**Figure 1**). This action was absolutely necessary after the cutting through. By Friday, all repairing was done and the construction site was moved to Niche 6, where the excavation will start next week.
- In the night from Monday to Tuesday, N. Philipposian, Q. Bobillier (Sigeom SA) performed laser scans in the last stretch of Ga18 to calculate shotcrete thickness.

BN (Bitumen-Nitrate-Clay-Interaction) experiment

- On Thursday, S. Schefer and T. Theurillat (swisstopo) installed 4 sampling containers into loop 3, started circulation and removed the first sample in the evening.

DF (Drilling fluids for Opalinus Clay) experiment

- From Monday to Wednesday B. Strommer and G. Vogel (Polymetra GmbH) were on-site to install the last packer systems. On Monday and Wednesday they were joined by the PI A. Reinicke (Nagra).

MA-A (Modular Platform for Microbial Studies) experiment

- On Monday, the PhD student N. Burzan (EPFL) took samples and on Thursday removed a bio-reactor for further analysis in the lab.

MH (Monitoring of Heaves) experiment

- In the night from Monday to Tuesday, D. Jotteraud and B. Mignot (High School of Engineering, HEIG VD) supported by the PI S. Condamin and S. Schefer (swisstopo) performed 3D laser-scanning and tachymetry from Ga04 to the breakthrough of Ga18 including Niches 7&8 (**Figure 2**). This data will be used together with previous measurements in the same area to calculate convergences of the tunnel wall.

C. Nussbaum, D. Jaeggi and S. Schefer, June 7, 2019

Visits

Mon	03.06.2019	International School of Lausanne	41	G. Fiedler H. Sager
Wed	05.06.2019	Schüler Gewerbeschule GWS Lörrach	31	G. Fiedler F. Glauser P. Burgert
Wed	05.06.2019	Delegation FG SI RK ZNO	10	P. Bossart A. Lambert
Thu	06.06.2019	Hans Wildbolz-Stamm	20	G. Fiedler
Thu	06.06.2019	Ecoeng, Porrentruy	10	M. Pretalli
Fri	07.06.2019	Berufsmaturitätsklasse S1z BZ kvBL	25	G. Fiedler
Sat	08.06.2019	Männerriege Beckenried	31	A. Murer H. Hauser



Figure 1: Ga18: Repairing of the shotcrete in Niche TT and Ga 18 (Photo: S. Schefer, swisstopo).



Figure 2: MH experiment: B. Mignot (HEIG VD) during the 3D laser scanning measurements in Niche 8 (Photo: S. Schefer, swisstopo).