

KEYNOTE LECTURE THE INTERNATIONAL MONT TERRI ROCK LABORATORY IN SWITZERLAND

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Argillaceous formations are being considered as potential host rocks for repositories of radioactive waste. Therefore, in 1995 several organisations decided to start an international research project in the reconnaissance gallery of the Mont Terri motorway tunnel in north-west Switzerland, in a Mesozoic shale formation, the Opalinus Clay (Aalenian). The following organisations are partners in the project: SNHGS and NAGRA (Switzerland), ANDRA and IPSN (France), BGR (Germany), ENRESA (Spain), JNC and OBAYASHI (Japan), SCKoCEN (Belgium). The aims of the project are to analyse the hydrogeological, geochemical and rock mechanical properties of the Opalinus Clay, the changes to these properties induced by the excavation of galleries, and to evaluate and improve appropriate techniques for investigation, drilling and excavation. The Opalinus Clay consists mainly of 40-70% clay minerals, 10-30% quartz and 5-20% calcite. The physical porosity is 12-18 vol.%. The porewater is a highly mineralised sodium-chloride water with total dissolved solids of up to 20 g/l. In January 1996, eight niches were excavated and experiments were started in boreholes in these niches. In winter 1997/1998 a new research gallery was excavated. The research programme consists of a series of individual experiments. By summer 1999, 20 experiments had been completed and a further 20 are in progress. New experiments may be added to the programme and new partners may join the project. The programme will last at least until the year 2003. The internet homepage of the project is <http://www.mont-terri.ch>