

About Schlumberger Water Services

We offer innovative groundwater solutions through professional expertise to meet the advancing technological requirements of today's professionals.

Schlumberger's Water Services division specializes in assessing, developing, and managing groundwater resources using some of the finest, advanced and cost-effective technologies available today.

Whether you're looking for field-scale data collection, data management, modeling, or resource decision-making solutions, our teams of specialists are here to help you address all your groundwater projects safely and efficiently.

Applied Technologies:

- Westbay System*
- Pressure Profiling
- Discrete Sampling
- Hydraulic Testing
- Automated Monitoring
- Remote Data Acquisition

Multilevel Monitoring for Geologic Repository

ANDRA URL, Bure, France



Photo courtesy of ANDRA

A portion of the surface facilities at Bure during shaft construction.

Highlights:

- At the Meuse/Haute Marne underground research laboratory ANDRA is studying the feasibility of establishing a deep repository in clay for storing high-level and long-lived intermediate-level radioactive waste
- As part of its initial investigation ANDRA installed six Westbay Systems to monitor fluid pressure changes in the geological formations overlying the clay
- A seventh Westbay System was installed several years later to obtain a comprehensive profile of the hydrology of the clay
- ANDRA found the Westbay System to be both robust and accurate

Background

The French National Agency for Radioactive Waste Management (ANDRA) is responsible for the long-term management of radioactive waste produced in France. The agency protects humans and the environment against the emission and dissemination of radioactive materials, which must be isolated from the environment until their radioactivity has decayed to an acceptable level. This means the waste must be carefully controlled at all stages – production, conditioning and final disposal.

In 1999, ANDRA established the Meuse/Haute Marne laboratory to study the feasibility of building a deep geological repository in clay (argillite) for high-level and long-lived intermediate-level radioactive waste. The underground research laboratory is a multi-disciplinary research facility with a concerted scientific experimental program.

Challenges

The Meuse/Haute Marne laboratory is located in Bure, approximately 200 km [125 miles] east of Paris. The underground portion of the laboratory consists of a network of drifts excavated in the argillite at a depth of 490 meters [1600 ft] below ground surface. Two large shafts connect the laboratory to the surface.

One of the major challenges facing ANDRA during the initial stages of construction was to monitor the effects of construction on the geological formations overlying the argillite. This data would be an integral part of proving the feasibility of building a geologic repository. In addition, data would need to be collected from within the argillite clay. The argillite is particularly difficult to characterize due to its low permeability.

