



VIENNA - SPIELFELD/STRASS HIGH PERFORMANCE RAILWAY LINE, SEMMERING BASE TUNNEL, CONTRACT SECTION PGG1

Client: Austrian Railways Infrastructure AG
Development Period: 2010 to 2015

THE PROJECT

The Southern Railway Line is part of the trans-european route from the *Baltic Sea* to the *Adriatic Sea*. The mountain section over the Semmering is a bottleneck at the moment due to the limited speed and tonnage.

The double tube, 27.3 km long, Semmering base tunnel runs between Gloggnitz (Lower Austria) and Mürzzuschlag (Styria) and was advanced from the portal site at Gloggnitz and three intermediate attacks. The advance was carried out by conventional methods (NATM) as well as by tunnel driving machines.

The contract section PGG1 included, besides the portal cut, three new bridges, the relocation of the B27 road into a trough structure and considerable flood protection measures along the *Schwarza River*.

OUR FUNCTION

BGG Consult was commissioned for this contract section with geotechnical and hydrogeological consulting during the tendering procedure and the construction phase. In order to detail the knowledge from previous explorations, subsoil investigation works were determined, supervised and evaluated. Based on these, a geotechnical-hydrogeological expert's report was compiled.

For the slope protections, the design and dimensioning has been done and a geotechnical monitoring was determined.

Furthermore, geotechnical measurements were conducted and a preservation of the hydrological evidence implemented.

Slope Protection Portal Area Gloggnitz:

In connection with the tunnel construction, the provision of adequate space for the building site facilities and the establishing of several structures in the portal area, an extensive hillside cut with slope heights of up to 18 m was necessary.

The protection was accomplished by an anchored shotcrete wall. For the anchoring, grouted self-drilling anchors with lengths between 4 m and 12 m as well as prestressed anchors (lengths up to 28 m) were used.

In the context of the geotechnical monitoring, several vertical inclinometers, anchor load cells and numerous geotechnical measuring points were supervised.

*Slope Protection
Portal Area Gloggnitz*

