

**Long Term Development and Extension
of Brine Field and Storage Site Teutschenthal Bad Lauchstaedt
in Central Germany**

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Abstract

The paper firstly describes the salt cavern and storage site Teutschenthal/Bad Lauchstaedt within an area in Central Germany, which has been used by several mining industries for many decades. Favorable geological conditions were the main basis for the companies VNG and Dow and their predecessors in title respectively to create and commission salt caverns for storing gas and hydrocarbons already in the 1970s there in neighbored mining concessions. These storage facilities have been successively extended.

From the middle of the 1990s on Dow invested in own solution mining facilities and used the new created cavern volumes for its extended hydrocarbon storage needs. A characteristic of the solution mining process is the closed brine loop between the cavern field and the chlorine production plant.

The natural gas storage site Bad Lauchstaedt has outstanding importance for the company VNG which has interest for further extension.

VNG and Dow started a long-term construction of new gas storage caverns, in which UGS Mittenwalde is the engineering and main service company. The close cooperation of all companies is the essential basis in this combined process of brine production, assurance of brine supply and quality management as well as cavern shape.

The paper also delineates specific conditions and technical solutions for installing the subsurface gas completion of a previous brine production cavern. The drilling of two new cavern wells was combined with exploration measures and field tests. Meanwhile the leaching of these caverns has run for several months and the restrictions, the leaching technology, the process monitoring as well first results can be presented.

Key words: Bedded Salt Deposit, Brine Chemistry, Cavern Dissolution Modeling, Caverns for Gas Storage, Caverns for Liquid Storage, Geology, Germany, Rock Mechanics, Well Design, Drilling and Completion