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Abandonment of caverns by backfilling

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Abstract

In Staßfurt, backfilling with solids has been practiced for many years at several caverns. Different solids are used - of mining and non-mining origin. Both backfill materials are filled into the cavern as a suspension. However, the methods for producing the suspension differ for the two materials. Starting with a material characterization of the backfill materials itself, the techniques used for both materials are described, and the respective specifics are outlined. The differences regarding the operational monitoring of the backfilling process are also addressed.

Subsequently, an overview is given of how the backfilling operation has run over the past years and what the current status is.

The backfilling of the caverns has been very intensively monitored by the operator in cooperation with authorities over the years. The focus here is on demonstrating long-term safety. The basic approach to this verification is explained. The essential components of the long-term safety demonstration are also named.

Key words: Backfilling, Abandonment, Long-Term Safety

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