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Etzel K202

– Leach and fill construction of a tailor-made oil storage cavern –

Update of Berlin 2004 paper

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Abstract

In northern Germany caverns constructed in salt domes are used for underground storage of crude oil and natural gas. At present, close to the North Sea coast, IVG Logistik GmbH owns, operates and develops an underground storage facility comprising 40 caverns (for oil and gas), with a total geometric volume of some 20 million m³.

This presentation provides an updated general overview of IVG oil storage cavern K202 , based on the report presented in Berlin 2004. Currently, the cavern leaching process has been finalized and the cavern taken into storage operation with an effective storage volume of about 550,000 m³.

Selected items are highlighted with special attention to:

- description of the leach and fill operation,
- early availability of volume for oil storage,
- leaching in youngest Zechstein 2 formation and the risks involved,
- cavern design and rock mechanical properties of the salt rock,
- variation of final cavern volume during construction phase.

Keywords: leach and fill operation, volume adjustment, customer demand, cavern design