

# **Mobil's Gas Cavern Storage Project in Lesum/Germany Construction Design, Leaching Operations and Gas Storage Issues**

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## **Abstract**

In 1996 Mobil in Germany initiated a venture to construct 3 caverns for gas storage in the Lesum salt dome, located in Northwest Germany and already used for oil and gas storage in caverns. Purpose of the cavern storage is to offset diminishing gas production capacities due to continuing depletion and to satisfy high short-duration peak demands in cold winters.

The 3 caverns will be located at depths of 1,285 m to 1,750 m (4,200 to 5,740 ft) and have volumes between 500,000 m<sup>3</sup> and 600,000 m<sup>3</sup> (18 – 21 MCF). The first cavern L 301 is currently being leached and has already exceeded 300,000 m<sup>3</sup> volume. Completion of the leaching process is expected in May 2000.

The paper discusses cavern design issues dictated by mechanical properties of the salt and by operating pressure criteria, including investigations simulating a case of total loss of internal pressure in the cavern.

It also presents well completion design plans and briefly deals with relevant surface equipment for gas operations.

Particular emphasis was given to periodically measure temperature changes in the cavern during the leaching process in order to determine the thermodynamic conditions in the cavern at the beginning of gas storage operations. The significance of the temperature data in this regard will be discussed.

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