

# SOLUTION MINING RESEARCH INSTITUTE

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## SOME COMMENTS ON THE MIT TEST

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### ABSTRACT

We discuss several aspects of the so-called MIT test which is performed by lowering a nitrogen/brine interface in the annular space of a salt cavern hole.

1. In case of a gas leak, the leak rate is underestimated by a factor comprised between 1 and 2 when multiplying the annular cross section by the interface rise rate.
2. The interface level, as measured by a logging equipment, can be checked by :
  - i. Comparing the brine and gas pressures as measured at the well head.
  - ii. Measuring the cavern compressibility and brine pre-pressure.
  - iii. Measuring the nitrogen injected mass.
3. Several factors, like thermal expansion, steady state and transient creep, brine percolation can modify the interface rate even in the case of absence of leak. The effect of some of those factors can be precisely estimated.
4. A thoroughful examination of brine and gas pressure at ground level allow for estimating the gas leak.

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