Temperature modelling during salt-cavern leaching process

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Abstract

In order to predict cavern production performances, cavern thermodynamics behaviour must be studied by higher accuracy approaches. This behaviour is extremely related to the temperature distribution in the surrounding formations. During the leaching process, the thermal equilibrium of the rock salt surrounding the cavern is extensively disrupted. The purpose of the present paper is to study the heat transfer problem during the leaching process and to develop a thermal model which can be easily used in field applications.
Key words: Salt cavern, leaching, heat transfer, semi-analytical approach, computer modelling, finite elementsimulations