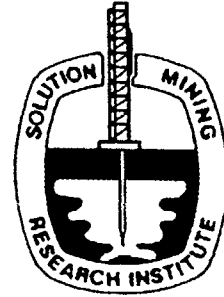


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**MEETING
PAPER**



**The Microgeometry of the
Dissolution Surface of Salt Rock
and Mass Exchange in
Underground Reservoirs**

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Presented at the Spring 1997 Meeting
Cracow, Poland
May 11-14, 1997

Abstract

When building underground reservoirs for the storage of hydrocarbons in rock salts, involving the injection of the solvent through the well, the actual dimensions and shape should be taken into consideration. These parameters can differ substantially from the assumed model parameters because of fall-outs, "pockets" and other defects of the real surface as well as the irregularities and the roughness of the surface (microgeometrical parameters). By irregularities in this work are meant relatively large microgeometrical elements having characteristic dimensions of the order of several millimeters. By roughness are meant microgeometrical elements having characteristic dimensions of the order of several tenths of a millimeter and less.

The microgeometrical parameters of the dissolution surface of test pieces taken from different rock salt fields have been studied.

It has been found that due to microgeometrical parameters the real surface will increase by 1.5...5 times in comparison to the geometrical surface for the full-scale test pieces.

It has been found out that the mass transfer layer in the course of dissolution in the "rock salt - liquid" system is determined by a microgeometrical element - by roughness. The thickness of the layer is 0.01 - 0.3 mm.

It has been found out that the intensive mass exchange layer in the course of dissolution in the "rock salt - liquid" system is determined by another microgeometrical element - by irregularities. The thickness of the layer is 3.2 - 5.2 mm.

The coefficients have been suggested taking into account the influence of the shape of irregularities and roughness on the mass transfer process.

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