A LARGE SCALE TEST FOR THE VERIFICATION OF A MODEL FOR SOLUTION MINING OPERATIONS IN MULTI-COMPONENT ORES.

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At the Kon./Shell Laboratories in Amsterdam a computerised model for the simulation of solution mining of multi-component ores has been developed. The exact verification of such a complicated model is impossible on a laboratory scale in view of the scaling problems or in a field trial because too little information can be obtained from the down-hole cavern. To overcome these limitations we have carried out a large scale test in a potassium mine in West-Germany. The resulting cavern was 5 m wide and 2 m deep.

In this model cavern all important assumptions in the model could be verified, including the vital assumption of a constant concentration in the horizontal plane. This verification is impossible in the actual caverns.

From this test, the importance of the presence of kieserite ($MgSO_4.H_2O$) in the ore has become clear. The present model describes both this test and the actual field data very well.