

Progress Report  
Solution Mining Research Institute Project  
Contract No. 30852-2

The University of Texas  
Austin, Texas

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Analysis of Mixing of Fresh Water and Brine

Mechanism of Solution and Cavity Control -  
Annulus or Intermediate Injection

Cavity Shape Calculation for a Midpoint Injection, Bottom  
Production Field Well Cavity Development

Mathematical Review - Problems Relating to Salt Solution

## Summary

A mathematical model which employs salt removal rates corresponding to the variation in saturation of brine in a cavity, and applied over finite, incremental heights within the cavity has been used to calculate the progression of cavity shape and total volume of salt removal. The results obtained are in good agreement with actual measured shape and volumes of salt produced. A prediction is made of the shape to be expected after another year's operation if no change is made in pipe positioning and if the rate of injection remains relatively the same.