SOLUTION MINING RESEARCH INSTITUTE

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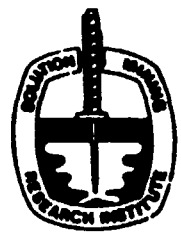

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IMPURITIES IN RAW BRINE FROM BEDDED SALT DEPOSITS

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1. INTRODUCTION

There are numerous gaseous and water-soluble solid substances contained within a bedded evaporite deposit that can affect the operation of a brine field, pipelines, or the chemical plant. Gaseous substances include free ammonia (NH_3), hydrogen sulfide (H_2S) methane (CH_4), carbon dioxide (CO_2) and carbon monoxide (CO). Soluble solid compounds contain calcium, magnesium, potassium, and iron, as well as sulfates, sulfides, carbonates and silicates. Liquid hydrocarbons are also occasionally encountered.

Most of these impurities are contained within the interbedded mudstones, marlstones and shales found within the evaporite deposit. It is important, therefore, that the entire evaporite sequence to be solution-mined within a New Brine Field be continuously cored. Cores should be geologically described, properly sampled, and chemically analyzed for potential injurious substances as promptly as possible after retrieved from the core hole. A lapse of a few weeks before chemical analysis will permit significant degassing of the core.