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## Potential Influence of Granular Salt on Cavern Stability

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### **Abstract**

Legislation, in the state of Louisiana, has recently modified regulations on the required minimum separation distance between a solution-mined cavern and the periphery of the host salt. In consideration of this, discussion and laboratory experiments will be presented here to provide insight into how the accumulation and consolidation of granular salt on the floor of a cavern may influence the floor stability and minimum separation distance. A summary of recent deformation and flow experiments on crushed salt are presented. These experiments were performed in an effort to quantify both the consolidation and transport properties of crushed salt under a combination of confining and pore pressures at elevated temperatures. During hydrostatic creep tests, volumetric strains were measured in excess of 20% that resulted from large decreases in pore volume. Additionally, gas flow measurements were made during creep consolidation, and results from tests show the permeability of crushed salt approaches that of intact salt during hydrostatic consolidation.

**Key words:** Granular Salt, Permeability, Salt Periphery

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