

# SOLUTION MINING RESEARCH INSTITUTE

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MEETING  
PAPER



UNDERGROUND STORAGE IN THIN SALT LAYERS ON TEESIDE

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*Manchester, UK  
October 1982*

## UNDERGROUND STORAGE IN THIN SALT LAYERS ON TEESSIDE

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### 1 INTRODUCTION

ICI operates two underground storage sites on Teesside in the North East of England. These sites are located at Saltholme to the North of the River Tees, near ICI's North Tees Works, and within ICI's Wilton Works to the South of the River Tees.

In this paper I shall seek to trace the evolution of underground storage operations at these sites with particular reference to the development of certain key principles for storage operations using brine displacement in the relatively thin salt layers that exist on Teesside. I shall also give an indication of the type of underground storage facilities used and the range of products stored

The rock strata under the ICI land at Saltholme to the North of the River Tees includes a layer of salt at a depth of round about 340m which varies in thickness between 27m and 40m. This salt layer is sandwiched between layers of marl and anhydrite. Overlying this there is a water bearing layer of sandstone stretching from 30m down to 270m below the surface.

ICI extracts salt from the Saltholme brinefield for chemical manufacture, and solution mining techniques have been developed so as to form discrete brine filled cavities of a size, shape and spacing designed to prevent subsidence of overlying formations. Over a hundred of these cavities have now been formed, varying in final leached volume from 10,000 m<sup>3</sup> to 100,000 m<sup>3</sup> capacity.