

# **SOLUTION MINING RESEARCH INSTITUTE**

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**MEETING  
PAPER**



## **INVENTORY VERIFICATION IN SALT CAVITY STORAGE**

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## INTRODUCTION - BACKGROUND

In underground storage of natural gas, the residing inventory is directly related to the volume of the inventory at any one time. The relationship between these two quantities suggests that calculation of one from the other may provide a means to verify the inventory or volume against book value or direct measurement. Any methodology directed to inventory verification becomes subject to uncertainties inherent in the measurement or estimation of several parameters. Some of these are geometric while others are either physical, thermodynamic or empirical. In salt cavities, the problem of uncertainty of cavern volume becomes further complicated because of the creep phenomenon which may continually affect it. In porous and permeable reservoirs, the gas filled pore volume is not directly measured and depends on many variables which are subject to measurement errors and uncertainty.

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