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Meeting Paper



**Echometric Surveying of Gas
Cavities – Practical Experience with the
BSE Echo Tool and its Applications**

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by

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1 Introduction

When performing cavity surveillance a variety of parameters must be recorded and numerous measuring techniques applied. The echometric surveillance of cavities is especially important with regards to their safe and effective operation.

As opposed to brine production cavities, storage cavities are generally subject only to convergence and do not undergo large and irregular changes of shape. Echometric surveillance is therefore primarily employed to obtain proof of the cavity stability and convergence. By comparing the results of the current survey with those of the previous ones it is possible to arrive at conclusions about any sloughing or collapse of the cavity wall that may have occurred.

Such operations are carried out either as full surveys or as partial surveys for monitoring just the cavity roof and floor. For certain operating situations it is advantageous to make spiral measurements, which have an extremely high measuring point density and so provide very accurate and detailed information about specific regions of the cavity.

Applying the BSE tool generation developed by SOCON it is possible during an echometric survey to measure and process besides the geometry such parameters as the pressure, temperature and dew point.

In the first instance the techniques used for surveying under high gas pressures are elucidated and then the entire survey procedure in a gas-filled cavity from the installation of the high-pressure lubricator right up to the execution of the echometric survey itself is described.

Subsequently some interesting results of full and partial surveys in gas cavities are presented. In conclusion some case studies are introduced highlighting dew-point surveys as well as the accurate recording of cavity roof and neck areas that can be achieved using spiral measurements.