

DETERMINATION OF FORMATION PRESSURES IN ROCK SALT WITH REGARD TO CAVERN STORAGE

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Abstract

Constraints on the prevailing formation pressure within rock salt induced by the load of the overburden are essential for the dimensioning and positioning of storage caverns. Especially with regard to the permissible maximum pressure for the operation of caverns most accurate values of formation pressures at certain depths allow an utilization of the storage volume to the maximum.

In this context basically four different methods have been applied so far: density determination from rock samples, analyses of lithodensity logs, hydraulic fracture tests and borehole gravity measurements. Results from these methods are frequently a matter of debate in terms of accuracy, reliability and interpretation.

In this paper the different methods will be presented and advantages and disadvantages will be described. Because this issue has been addressed already by earlier publications this paper will focus on recent experiences and some practical aspects that might be helpful for planning a new cavern project or a new cavern in an existing cavern field.

Key words: Cavern Operation, Hydraulic Fracturing, Rock Salt, Well Logging