

# ETUDE DU CARACTERE INCRISTANT DES EAUX ET SON INHIBITION PAR DES ESSAIS CHIMIQUES ET D'ELECTRODEPOSITION

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**Abstract :** Groundwater Hamma and Fourchi that feed the cities of Constantine and Ain M'lila are from limestone. These waters have a very high hardness (57°F to 87°F Hamma and Fourchi). These waters give rise to encrusting deposits (compacts and components) of calcium carbonate in their movement. This, the consequences of these deposits are of three types : Hydraulic, thermal and mechanical. According to Khalil et al. (1992) to fight against scale, it requires the use of chemical or physical. These methods, based on the use of inhibitors of calcification, such as certain carboxylate or phosphonate, are effective but not feasible in the case of water distribution. This leads to the search for safe methods of inhibition of scale-forming power of water which remain applicable in the case of drinking water. Our study focuses firstly on the quality assessment of hard water of Hamma and Fourchi and secondly on the inhibition of scale-forming power of this water by using a chemical process with lime and sodium carbonate and potassium dihydrogen phosphate. The electrochemical method of scaling based on the accelerated reduction of dissolved oxygen is also of great interest for the development and inhibition of power in laying these waters.

**Keywords :** drinking water, scaling calcium carbonate, inhibition,  $\text{Ca(OH)}_2$ ,  $\text{Na}_2\text{CO}_3$ ,  $\text{KH}_2\text{PO}_4$ .