

Approaching the Zero Liquid Discharge in Tannery Wastewater: the Tamil Nadu (India) Clusters Experience and the Santa Croce (Italy) Scenario. Perspectives and Technologies

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Abstract: The alarming depletion of ground water in Tamil Nadu (India) tannery clusters is pushing toward the choice of Zero Liquid Discharge (ZLD) as inevitable technical solution. This leads the main CETP of the Tamil Nadu (India) area to face, among the firsts in the world, the experience of implementing a new applied technology in tannery wastewater treatment to be conducted and operated by a consortium of industries. The paper wants to give the status of the art of the ZLD technology in tannery wastewater, collecting the pilot experiences as well as the industrial applications wherever applied and operating. Pre-treatment technologies, implementation of water-saving systems to be applied in each tannery as well as TDS-segregation options are analyzed compiling the European and Indian experiences till today. An overview is given on the present status of the tannery CETP analyzing their existing performances and evaluating the most profitable path while converting the existing facilities into ZLD systems. In last the study analyzes in detail the expected quantity and quality of “by-products” deriving from a ZLD system in relation to the technology adopted such as sludge and salts as well as the available alternatives for their disposal or reuse.

Key words: Tannery cluster; Wastewater; Zero Liquid Discharge