Avoiding Salinity from the Chrome Tanning Process

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Abstract: Salinity as a component of TDS is unaffected by tannery effluent treatment. Over and above salt preservation (which technically can be avoided), the major source of salinity is the conventional acid/salt pickle process. Many attempts have been made to replace this process, but these methods cause major changes to the leather characteristics and have not been accepted by tanners.

A process was developed for a high uptake chrome tannage that produced high quality leathers and operated on full-scale production for many years. This process was based on the discharge of a conventional acid/pickle bath before a low-float chrome tannage, followed by chrome fixation at high temperature/low pH. Subsequently this was rationalised in two separate full-scale investigations:

- by draining, adjusting and recycling the used acid/salt pickle to minimise the salinity
- recycling of the used tanning float to minimise the chrome use/discharge.

However, more recent investigations by other research associations and universities show ways that the process could be further rationalised. The recycled pickle liquor could be made-up using alternative salt to sodium chloride that could be removed from the drainings/washings that follow tanning, and within effluent treatment.

A poster presentation would be a powerful way of bringing these proven techniques and amendments together. It would illustrate as a route that tanners might follow to:

- eliminate sodium chloride from the acid pickle.
- ensure a very low TDS as a result of the pickle/chrome tanning process.

Key words: Salinity; process