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The Role of Condensate Drainports chemistry in Steam cleaning for Geothermal power plants.

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Steam purity is a significant factor in maintaining plant reliability, availability, and efficiency in geothermal power plants. Continuous monitoring of steam purity is therefore essential in maintaining the power plant operation and to detect changes in steam purity that need intervention

In the ideal case, 100% steam separation should occur at the separator station. However, this may not be the case and sometimes traces of brine can be carried over into the steam. The steam lines delivering steam from the separator stations have drain ports along the line to get rid of steam condensate that forms along the steam line. The sets of drain ports near the separator station are the first line of defense against water (brine) carry over and they should remove any carryover such that at the drains ports near the power plant, only steam condensate with no dissolved components is obtained. The concentrations of chloride in the condensate port discharges provide an accurate measure of the overall efficiency of steam line scrubbing and give confidence in the level of steam purity at the turbine.

This paper assesses the chemistry of condensate drain ports of Olkaria power plants and the role they play in improving the quality of steam before admission to the turbine.