

S2.6.3 SUCCESSFUL TREATMENT OF RO BRINE IN A TUBULAR MEMBRANE PROCESS

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As of Fall 2016 a process treating RO brine has been successfully operating using an array of tubular UF membranes coupled with physiochemical treatment. The concentrated dissolved salts, particularly silica, in the brine are precipitated using a combination of basic lime-softening and magnesium addition. The resulting suspension is then filtered by the tubular membranes and recycled to the first RO in the process. Reject from the membranes is recirculated through them so as to maximize water reuse and a side stream of reject is removed such that the solids can be concentrated by a filter press; the reject water is sent back to the membranes. This high flux operation removes 99.95% of the solids in suspension and has increased the overall water recuperation from 80% to 95%.