



Wastewater recycling- Case Study

All over the world, limited access to drinking water, high water costs, strict legislation are high priority considerations when planning the water supply for a brewing or beverage operation and it will surely gain even more relevance in the future.

The installation of modern processes and the diligent use of water can sustainably reduce the water demand in the brewing and beverage industry. But only up to a certain point, which is for breweries about at a ratio of 3 hectoliters (hL) of water for 1 hL of beer packaged. To reduce this specific water consumption further, water recycling is required.

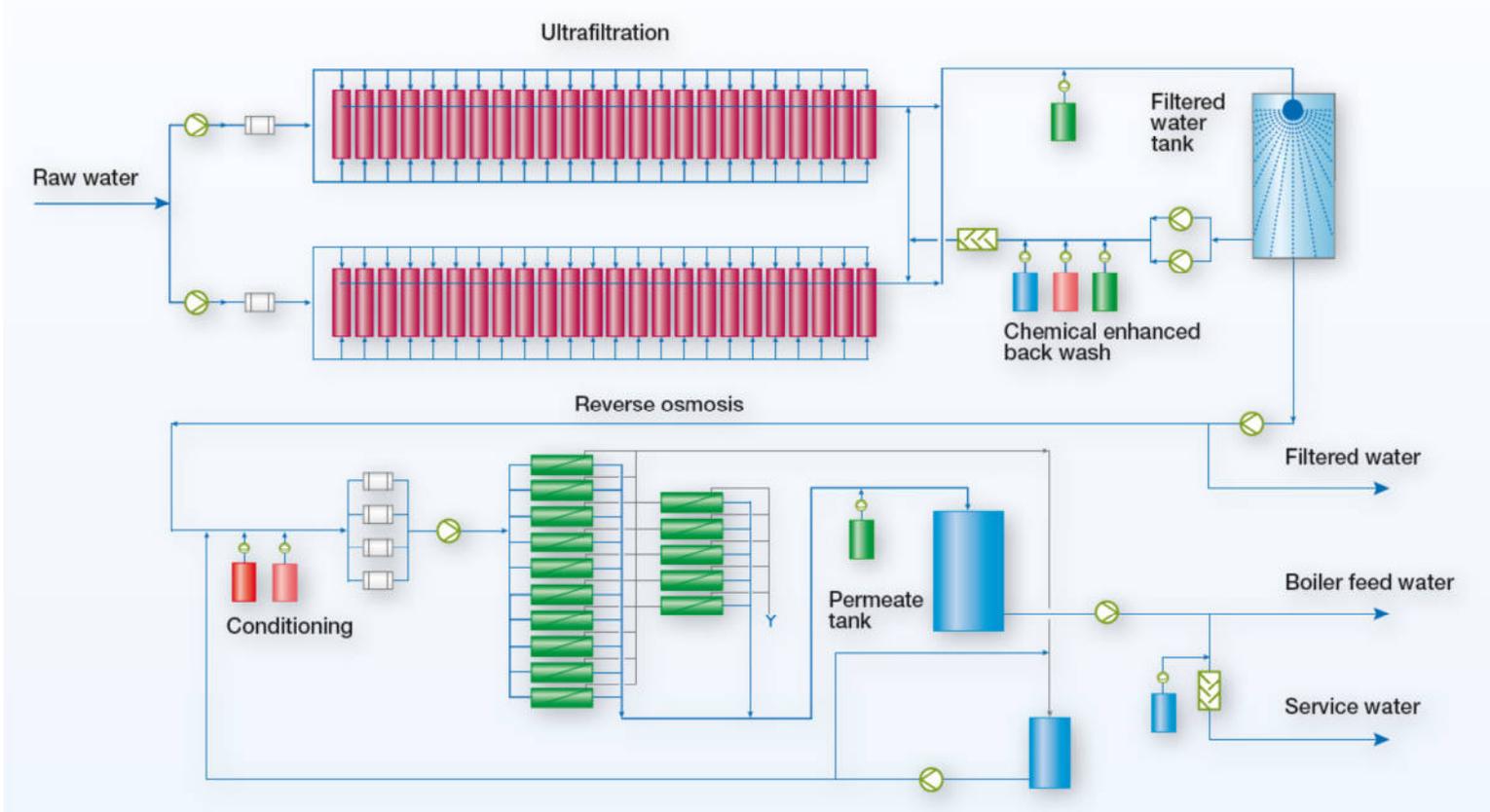
Up to now water recycling plants have been rarely used in the brewing and beverage industry, although the quality of the recycled water meets stringent drinking water standards. EUWA offers special treatment technologies to meet the individual requirements of breweries and other beverage companies. The spectrum ranges from process add-ons for existing waste water

treatment plants to the design and construction of complete recycling plants. The composition of a wastewater depends amongst other things on the organic load and the cleaning chemicals used and can vary greatly at different production sites. It is therefore recommended that local conditions are thoroughly evaluated before proceeding with the engineering and installation of a water recycling plant.

The brewery of this case study operates already an aerobic and anaerobic waste water treatment plant. EUWA was charged to develop a recycling concept for the water out of that waste water treatment plant and to realise it. The quality of the recycled water should comply with drinking water standards in order to make it available for a wide range of applications. This was realised by EUWA as follows.

The water from the existing waste water treatment plant is conditioned and then fed to an ultrafiltration unit. For this application, membranes are installed in a modular

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design on so-called racks. The UF removes particles from the water and acts at the same time as a microbiological barrier. It is followed by disinfection of the water in order to protect it against reinfection during storage in the filtered water tank downstream.

This filtrate is subsequently treated with reverse osmosis to reduce the high and sometimes fluctuating salinity reliably below drinking water limits. Special membranes are applied in this case which despite of the dissolved organic and significant salinity in the feed water allow for relative high recovery. The thus treated water is distributed afterwards via buffer tank and associated pump station to corresponding users in the brewery.

EUWA's modular concept offers flexible tailor-made solutions taking into account the given situation. It reduces the fresh water consumption, leading to savings both in fresh water and waste water charges and helps to reduce the environmental footprint of the company. Since the treated water complies with drinking water quality it can be used in many areas. Applications in this case include boiler feed water, water for the cooling tower and for cleaning.

Total capacity:	124 m ³ /h
Recovery UF:	90 %
Recovery RO:	70 %
Recovery total:	60 %

THE WORLD OF WATER TREATMENT



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