



MEMBRANE BIOREACTOR FOLLOWED BY REVERSE OSMOSIS TREATS AND REUSES VEGETABLE WASHING WASTEWATER

Aquabio Limited has designed, built and commissioned a turnkey wastewater treatment plant which enables the reuse of up to 55% of the wastewater at Kanes Foods, a UK vegetable processor. The treatment plant is based on pre-treatment and aerated flow balancing followed by an advanced membrane bioreactor (AMBR), reverse osmosis (RO) and UV disinfection. A total of 1,200m³/day can be produced by the factory with up to 815m³/day being pumped forward to the AMBR. Following the RO and UV disinfection stages up to 650m³/day can be returned back to the factory as salad washing and process water.



The plant treats and influent COD_{Total} to the balancing tank of up to 1,440 kg/day depending on factory production. In order to effectively separate the biomass 4 No. banks of specialised ultrafiltration modules are used, fed by a recirculation system from the two bioreactor tanks. The operation is fully automated with PLC control and data logging of key process parameters (e.g. flows, dissolved oxygen, pH, temperature etc.) A JETOX™ aeration and mixing system is incorporated to achieve the necessarily high rates of oxygen mass transfer into the concentrated biomass.

The intensive aerobic environment created in the bioreactors (each with a design MLSS level of 15,000mg/l) combined with the high relative sludge age means that a high quality final effluent can be achieved in a much smaller 'footprint'. The ultrafiltration biomass separation system also provides a permeate suitable for feeding directly into the RO/UV post treatment stage.



For further information about Aquabio Membrane Bioreactor systems and other products and processes, please contact us at Aquabio Limited, Worcester, UK, either by e-mail or fax.

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