SULZER

Nordic Water

CASE STUDY

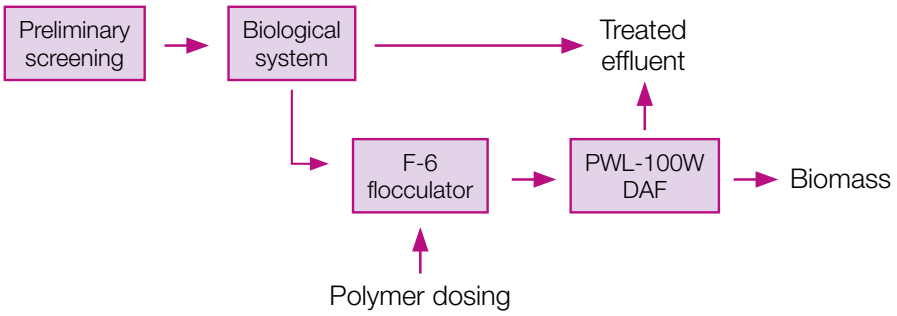
Yogurt production

The dairy processing plant in upstate New York produces a variety of yogurt products for distribution in grocery stores around the country.

In the wastewater treatment process a preliminary screen removes bulky solids before the water is treated biologically in a continuous waste activated sludge system. As the biomass grows and is wasted from the system, a DAF tank separates the solids from the water and concentrates them to 3-5% dryness in preparation for conditioning and dewatering.

The effluent from the DAF unit is devoid of solids and is combined with the effluent from the aeration basin for discharge into the sewer line.

Solution delivered



Equipment supplied

- PWL-100W DAF unit
- F-6 short flocculator
- Electrical control panel
- Pneumatic controls
- Access catwalk

	Design parameters	Discharge requirements
Flow	3'482.6 m^3/d	
MLSS	3'000 mg/l	150 mg/l

DAF sizing calculations

Hydraulic surface loading rate

$$= \frac{\text{Feed flow + recycle flow in } m^3/h}{\text{Effective surface area in } m^2}$$

$$= \frac{97.7 + 47.7\ m^3/h}{x\ m^2} = 4.9\ m^3/m^2/h$$

$$= 29.7\ m^2 \text{ required}$$

Solids loading rate

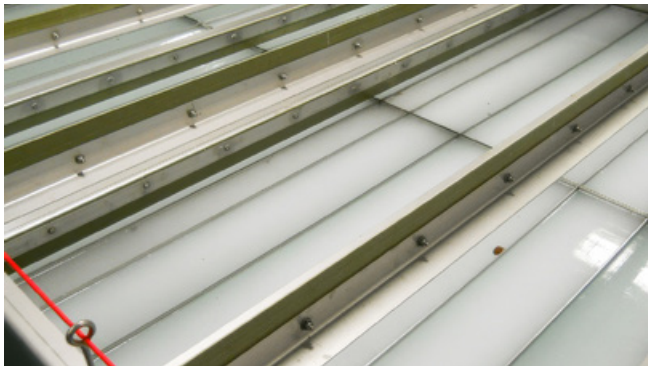
$$= \frac{\text{Weight of TSS in feed in kg/h}}{\text{Free surface area in } m^2}$$

$$= \frac{394\ kg/h}{x\ m^2} = 12.2\ kg/m^2/h$$

$$= 32.3\ m^2 \text{ required}$$

Source water

Activated sludge system



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