ENGINEERING PROJECT

# Nutrient concentration in pig slurry

Biologically treated liquid fraction

| RO design feed | UF modules | RO elements |
|---|---|---|
| 10 m³/h | 6 | 15 |

01

## The challenge

After nitrification and denitrification, the liquid fraction of the slurry contains 10 g/L of suspended solids. Removing them prepares the stream for reverse osmosis and concentration of dissolved nutrients.

02

## The solution

Crossflow UF sends filtrate to the RO stage and returns the retentate to the slurry tank. A 5 µm cartridge filter protects 15 RO elements arranged in five pressure vessels.

| 01 | 02 | 03 |
|---|---|---|
| Biological treatment | UltraFlux™ crossflow UF | Reverse osmosis |

03 / PROCESS DESIGN

## 65% RO design recovery

The UF stage is sized to concentrate suspended solids from 10 g/L in the feed to 40 g/L in the return stream. The RO stage splits the filtrate into two streams with separate outlets.

- Separate UF and RO containers
- Integrated cleaning for both stages

### RO water balance



| | |
|---|---|
| Permeate | 6.5 m³/h |
| Concentrate | 3.5 m³/h |

Design feed · 10 m³/h