A SOLUTION FOR RURAL WATER SUPPLIES WITH DIFFICULT SOURCES

POTABLE WATER TREATMENT

# ADVANCED MEMBRANE FILTRATION TECHNOLOGY

We're making the world safer, healthier & more productive.



Membrane filtration is an important stage in potable water treatment. The aim of a membrane filtration system is to remove unwanted substances from water using microfiltration, ultrafiltration, nanofiltration, or reverse osmosis. PCI Membranes' tubular and spiral-wound membrane solutions are the best choice for this application due to the following advantages:

- Cost saving (compared with the traditional technologies, membrane filtration lowers chemical costs, waste disposal costs, operating and maintanance costs);
- Does NOT generate sludge and maintains a high quality of treated water in spite of both sudden and substantial changes in raw water quality;
- Can be cleaned mechanically with special designed foam balls, which reduces needs for a CIP cleaning step to once per quarter.

### Potable water treatment process in details:

Potable water treatment processes based on membrane filtration are divided into 4 steps: screening, membrane filtration, disinfection(chlorination) and post conditioning (remineralisation).

- First of all, the raw water goes through screening, where the bulk of suspended solid is removed.
- Next, membrane filtration is used to retain the contaminants (such as colloidal particles, pathogens, organics, colour, suspended solids, salts, etc., whilst allowing clean water to flow through. Our <u>C10 tubular series modules</u> are the ideal choice for this step, due to their ability to handle suspended solids without blocking of membrane tubes. Whenever low suspended solids contents are present, our <u>Spiral-wound membrane elements</u> are the most cost-effective solution, but required more advance pre-treatment processes than for the C10 Series.
- After the water has been filtered, there will be post-conditioning and disinfection. A disinfectant may then be added in order to ensure that pathogens won't grow in the distribution network. The disinfection process also oxidises the dissolved metals which precipitate within the post conditioning.





Our <u>C10 tubular series modules</u> and their nominal 12.7mm diameter tubular UF or NF membranes are utilised in the Fyne process due to their ability to handle suspended solids without plugging.

The raw water is divided into two streams on the basis of molecular weight by passing it over a semi-permeable membrane. When pressure is applied to the water, the semi-permeable membrane allows the passage of a proportion of the water and smaller molecules, referred to as Permeate, but retains the larger molecules in the solution, referred to as Retentate. We are using very tight UF membranes (2kDa and 4kDa) to decolourise, and remove other components such as organic carbon, pathogens, metals, suspended solids and others, from the raw water source. As the process' waste stream is simply concentrated raw water, there are no environmental concerns to prevent its discharge back to the local water course.



## Advantages to working with us

- Made in a state-of-the art facility, with highly-trained production personnel and materials of the highest quality
- Over 50 years of membrane filtration experience

- Technical support from initial conversations to implementation
- Our products are designed to maximise and guarantee the treated water quality, whilst minimising process downtime, operating cost and beyond.
- Our expertise and product quality ensure constant and reliable performance
- Our service team is trained to to handle any problem, anywhere in the world

#### MEMBRANE FILTRATION TECHNOLOGY



Best Available Technology in providing a barrier to pollutants.



Minimum footprint requirements, hence ideal for both greenfield and brownfield projects.



Easy to operate, requiring minimal operator support.

BROCHURE-WATER TREATMENT-20220128



#### ADDRESS

#### Headquarters

PCI Membranes Sp. z o.o. ul.Polna 1B, 62-025 Kostrzyn Wlkp, Poland

# -

#### CONTACT

Phone & Fax Phone: + 44 (0) 1489 563470

#### Online

Email: pcimembranes@filtrationgroup.com Website: www.pcimembranes.com

