

## Selection of references

- Aker Kvaerner, Norway
- Akzo Nobel Diosynth, The Netherlands
- Akzo Nobel Resins, The Netherlands
- Akzo Chemicals BV, The Netherlands
- ASIAN Institute of Technology, The Netherlands
- Belgian Royal Navy, Belgium
- Broomchemie, The Netherlands
- BP, The Netherlands
- Cargill BV, The Netherlands
- Cargill St. Nazaire, France
- Citrosuco, Brazil
- Clariant/Dick Peters, The Netherlands
- Consafe / Agip KCO, Kazachstan
- Derde Merwedehaven, The Netherlands
- Deutag / Agip KCO, Kazachstan
- DSM Deretil Almeria, Spain
- DSM Research, The Netherlands
- DSBG, Israel
- Dow Chemical Company, The Netherlands
- Dow Chemical Company, Germany
- Dutch Royal Navy, The Netherlands
- Ecover, Belgium
- Ecofuels, The Netherlands
- EMTUNGA / Agip KCO, Kazachstan
- Friesland Coberco Dairy Foods, The Netherlands
- FrieslandCampina Maasdam, The Netherlands
- Haskoning, The Netherlands
- H.J. Heinz BV, The Netherlands
- Hoogheemraadschap De Stichtse Rijnlanden, The Netherlands
- Fuji Photo Film BV, The Netherlands
- Katoen Natie Silo Cleaning NV, Belgium
- Landqart Papermill, Switzerland
- LeoNine, South-Africa
- NAM BV, The Netherlands
- McDermott / BP, Kazachstan
- Oerlemans Foods, The Netherlands
- Phenol Chemie, Belgium
- Philips Lighting, The Netherlands
- Rosetti Marino Spa / Agip KCO, Kazachstan
- Sakhalin Energy Investment Company Ltd. (Gazprom, Shell, Mitsui and Mitsubishi), Sachalin
- SCA Hygiene Products, The Netherlands
- Sevotex Chemie AG, Switzerland
- Shell Global Solutions, The Netherlands
- Smiths Food Group, The Netherlands
- Southern Crosstower Development (BKB Filter Safe), Australia
- Sunkar Parker Drilling / Agip KCO, Kazachstan
- Trespa International BV, The Netherlands
- Van Marcke Food Group BV, The Netherlands
- Vosper Thornycroft, United Kingdom
- VHP/Arjo Wiggins, The Netherlands
- VWS, The Netherlands
- Wagenborg / Agip KCO, Kazachstan
- Wageningen University, The Netherlands
- Wetsus, The Netherlands



### Triqua bv

Vadaring 7 | NL-6702 EA Wageningen

P.O. Box 132 | NL-6700 AC Wageningen

T +31 317 466644 | F +31 317 466655

info@triqua.nl | www.triqua.nl



# Triqua

gives wastewater a second life

Reliable, environmentally friendly and cost-effective wastewater solutions



# About Triqua

## Sustainable cost reducing wastewater treatment solutions

We supply total wastewater treatment solutions based on various types of treatment techniques, allowing maximum flexibility for your wastewater requirements. We specialize in biological treatment (MBBR, MBR, anaerobic) and membrane filtration (varying from micro filtration up to forward- and reverse osmosis). Depending on the purpose the water can be purified or valuable substances can be concentrated or both.

Triqua focuses on systems for small scale- and middle scale wastewater streams. We supply our compact designed systems to the industrial, municipal, offshore and maritime markets. Our systems comply with the specific requirements and certification standards of the different markets segments.

We have more than 14 years of experience with a wide range of water treatment solutions and a track record of more than 160 references.

### Part of DELTA N.V.

Triqua is part of DELTA N.V., a multi utility company, active in the field of power supply, water and environmental services. The company employs a work force of approximately 3000.

### Characteristics

Triqua solutions are:

- Affordable and cost reducing
- Reliable installations
- Maintenance friendly
- Flexible technology
- Environmentally friendly
- High level of services (inclusive Remote Technology Assistance & spare parts delivery)

### Our systems, retrofit or new, are used for:

- Strict effluent requirements
- Water reuse
- Recovery of raw materials
- Energy recovery
- Concentration of raw materials
- Oil-water separation systems
- Complex wastewater flows
- Bulk removal

# Assured of optimal support

## We offer total solutions according to our one-stop-shop principle

We supply our custom installations worldwide to clients for the industry, offshore and shipping industry. Once delivered our systems are ready to use. You are guaranteed of optimal support, exactly what you may expect of an involved specialist like Triqua.

### Our supply scope ranges from limited scope to full turnkey deliveries or Design, Build, Finance and Operate (DBFO) contracts.

Besides the well known limited scope and turnkey supplies, we offer a unique formula in which Triqua completely takes care of your daily wastewater treatment operations.

### Our services include the following:

- Problem analyses, desk research and process optimization
- Testing on laboratory scale and in practice
- Test runs on location
- Process design
- Global and detailed technical design
- Purchasing
- Assembly and construction
- Testing, putting into operation and start-up
- Service contracts
- Help desk and after-sales

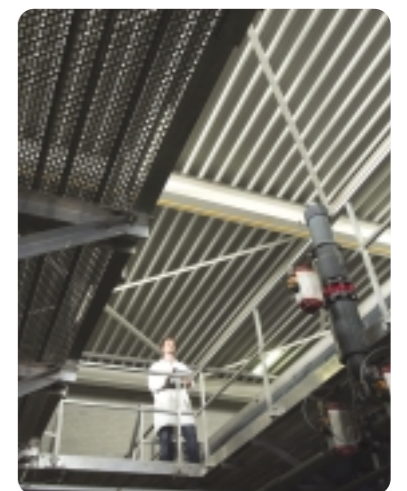
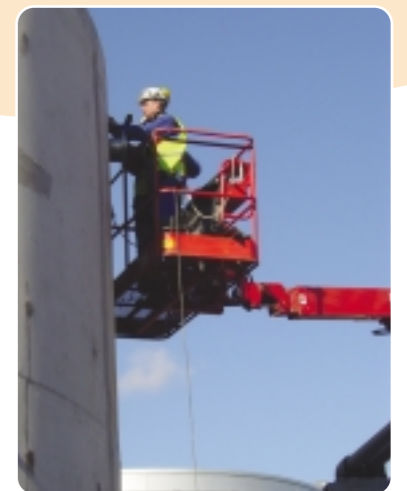
In addition to the delivery of turnkey projects we also offer the possibility of contracting individual services.

### 24-hours a day Triqua support from any location in the world

We offer service and support for your plant, varying from:

1. Supply spare parts, chemicals etc.
2. Technical and/or technological support (for example inspections)
3. Remote Technology Assistance (RTA)

Triqua offers support to plant operators in a professional and structured manner using its Remote Technology Assistance (RTA). This internet-based system enables Triqua and end users to exchange all relevant plant information (management reports, process analyses and trending + recommendations) across a central database, twenty-four hours a day from any location in the world.



# Technologies

## Membrane filtration

### Membrane filtration

Membrane filtration is an excellent method for achieving a desired degree of separation of water and suspended components, oil or salts. The goal may either be water purification or concentration of the water content, or both.

Triqua offers a broad range of options, such as:

- Oil-water separation
- Extraction or recovery of raw materials
- Energy recovery
- Forward Osmosis, the new green technology



Production of biosurfactants, Ecover



Oil-water separation, Sakhalin Energy Investment Company Ltd.

## Anaerobic wastewater treatment

### AnTriq®: Anaerobic wastewater treatment

The AnTriq® uses the anaerobic granular sludge technology. With a special reactor design, developed with a partner company, a high rate system has been developed which is specially suited for small industrial wastewater streams with a medium to high load of organics. With low strength wastewater Triqua can apply the specially developed Forward Osmosis technology, to make the The AnTriq® an economic solution.

### Benefits

- No sludge production
- Economical operation
- Energy from biogas

# Total water solutions

## Trouble free wastewater solutions for every type of water

### Markets

Triqua focuses on providing total water solutions based on the following markets, technologies and applications. Depending on the specific situation, we can offer standard and customized systems.

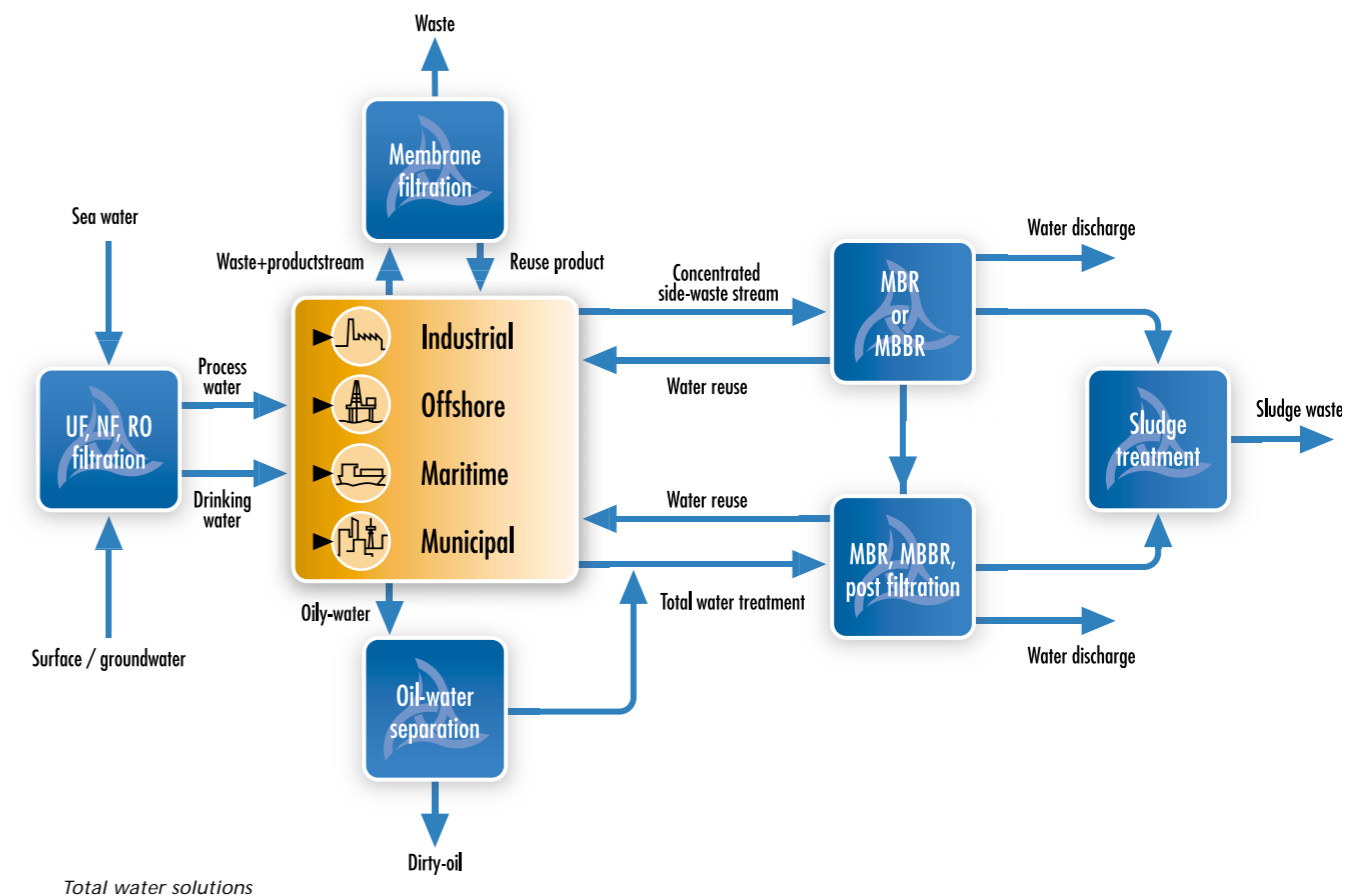
- Industrial** Tailor-made concepts
- Offshore** Wastewater treatment under extreme conditions
- Maritime** Trouble-free wastewater treatment systems for ships
- Municipal** Sustainable water management for office buildings hotels/holiday parks, golf courses and military forces

### Technologies

- Biological treatment, both aerobic and anaerobic
- Membrane Bioreactor (MBR), Submerged and Cross-flow systems
- Moving Bed Biofilm Reactor (MBBR)
- Membrane filtration (Micro Filtration, Ultra Filtration, Reverse Osmosis, Forward Osmosis)

### Applications

- Wastewater treatment
- Water reuse options
- Recovery/concentration of raw materials and energy recovery
- Oil-water separation



Total water solutions

# Technologies

## Membrane Bioreactor

### Membrane Bioreactor

Triqua provides high quality Membrane Bioreactor (MBR) solutions that comply with even the most stringent environmental regulations. This technology is a prerequisite in water reuse.

### Applications

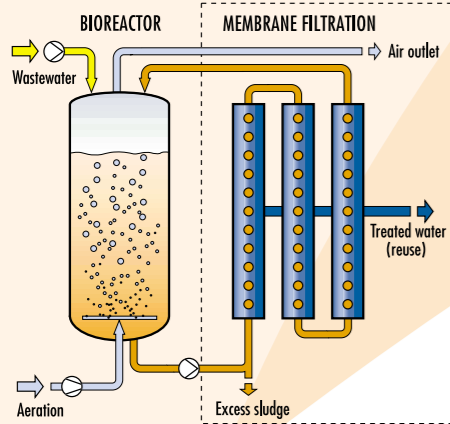
- Concentrated or poorly degradable wastewater
- In limited space
- Stringent discharge regulations
- Reuse

### Benefits

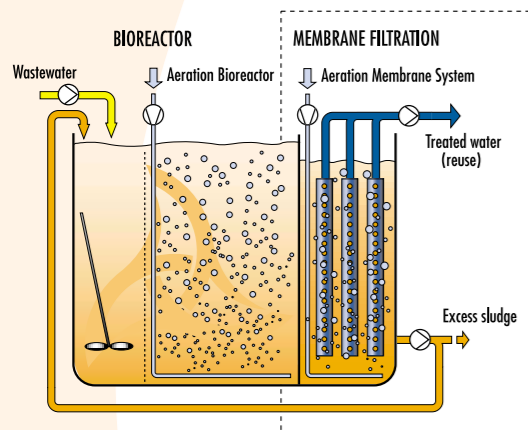
- High quality of effluent
- Low production of sludge
- Highly stable process
- Very compact design

### We offer the following MBR models:

- **The MemTriq®**, a cross-flow system for the treatment of complex wastewater and small flows.



- **The SubTriq®**, a submerged system, for the treatment of well degradable wastewater and large flows.



Water reuse, Southern Crosstower Development  
Australia Post HQ



MBR, Trespa International BV



MBR, Oerlemans Foods



Drilling rig, Caspian Sea, Agip KCO

# Technologies

## Moving Bed Biofilm Reactor

### Moving Bed Biofilm Reactor

With the Moving Bed Biofilm Reactor (MBBR) Triqua offers an economically solution for wastewater treatment or if applicable discharge regulations are not as strict.

### Applications

- All types of industrial and domestic wastewater
- Both organic as nitrogen removal
- New plants or system upgrades
- Limited footprint

### Benefits

- Cost efficient
- Minimize process complexity and operator attention
- Fast recovery from process upsets
- Flexible technology
- Durable & stable
- Environmentally friendly

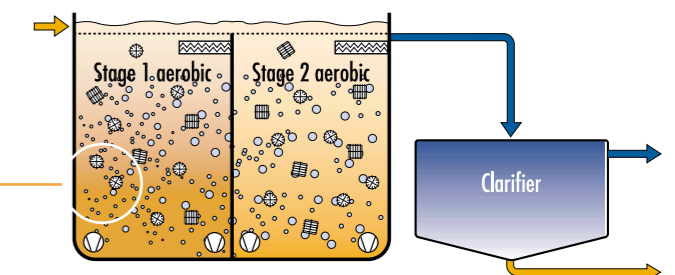
In addition to the building of a new system it is also possible to use this technology to upgrade an existing active sludge system.



Post treatment MBBR FrieslandCampina Maasdam



Buffertank and bioreactor



Schedule MBBR system with double stage biology