



Water4All Solutions for the Textiles Industry

Water4All: Solutions for reuse of industrial wastewater

Water4All offers modular water treatment systems for treatment of:

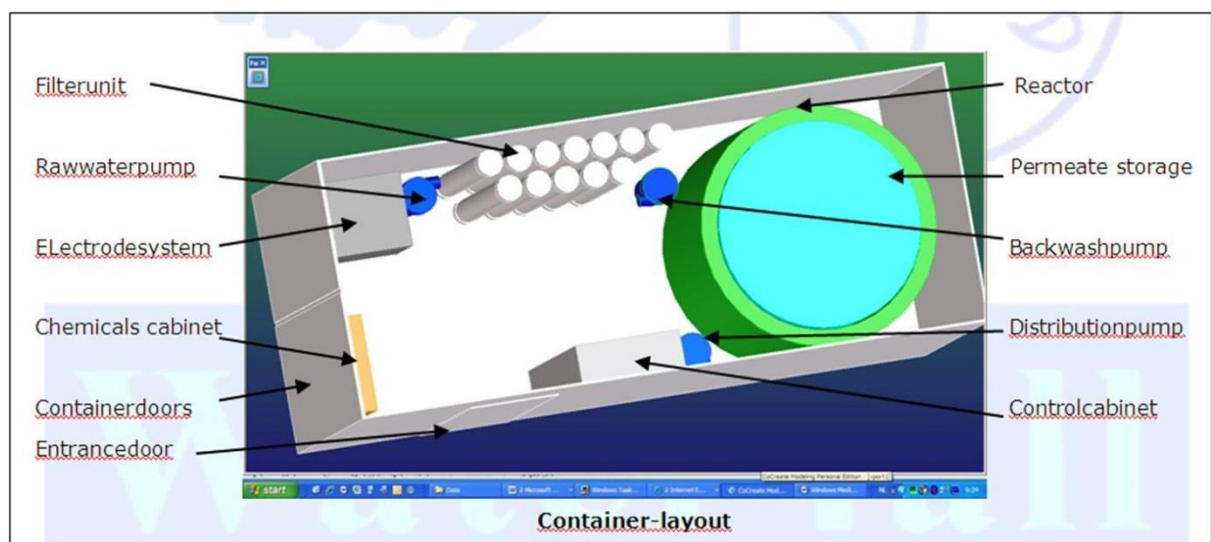
- Sewage water to reusable water
- Industrial wastewater to reusable water
- Industrial wastewater to drinking water
- Removal of Arsenic and /or Fluoride from ground water
- Textile wastewater to reusable water.

Water4All's solutions use a process of electroflocculation combined with ultra and nanofiltration to eliminate pollutants from wastewater.

Containerized treatment plants using no, or in extreme cases very low levels of chemicals are designed to customer requirements; the fully automatic plants require no operators and no maintenance.

The company complies with the following drinking water standards and directives:

- WHO *"Guidelines for Drinking Water Quality"*
- EU *"Wastewater Treatment Directives"*



A typical plant configuration



The Challenge

The various processes in the textile dyeing industries require the input of a wide range of chemicals and dyestuffs, which generally are organic compounds of complex structure. Water is used as the principal medium to apply the dyes and various chemicals. As a result, the industry uses very high volumes of water in its manufacturing processes; this water is extremely polluted after use.

Pollution in industrial wastewater is primarily generated by the various processes. The major pollutants in wastewater are high suspended solids, heat, colour, acidity and other soluble substances. The substances which need to be removed from wastewater are mainly COD, BOD, nitrogen, heavy metals and dyestuffs.

Due to the constant changing processes, the quality parameters of the wastewater are very variable, rendering traditional water treatment solutions inadequate.

Furthermore, the industry faces issues with:

- The availability, price and quality of input water
- The output water discharge standards and costs
- Its ecological footprint

The Solution

Water4All designs and supplies containerized plants which use a process of electroflocculation (see fig 1 below) combined with ultra and nanofiltration to eliminate pollutants from wastewater. Our systems are remotely monitored and continuously optimised during the treatment process by our proprietary software. This results in a very high percentage of re-usable water at extremely low operational costs.

Benefits of the system

Low energy consumption

<110 Watts/M3 (300M3/day capacity).

Use of solar energy to power systems is economically viable

No use of chemicals

Eliminates recurring cost of chemicals in most cases

Very high percentage of water available for reuse

Relatively small amounts of sludge produced during the back wash.

Very small footprint

Portable and modular systems mounted in 20 or 40 foot containers

Very fast treatment process

60 seconds treatment time including flocculation

High quality of treated water

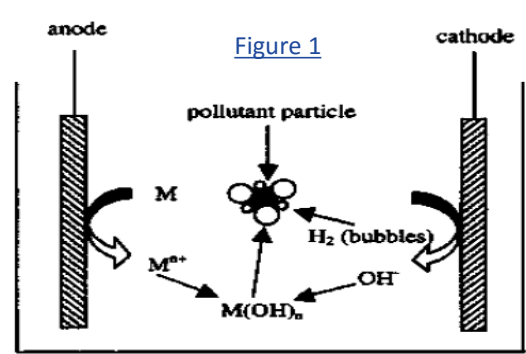
99.999 % reduction in microorganism and colloids

No operator required

System can be controlled remotely.

Very low operational costs:

Very rapid return on investment





C O S T B E N E F I T S

- Zero or negligible use of chemicals for treatment
- Very fast treatment process, reducing quantity of water volumes required in overall treatment process. (For example, no sedimentation tanks are required)
- Extremely low energy consumption
- Reduced quality issues due to better water quality
- Saving on water cost due to reuse of water
- Saving of detergent cost
- Saving of hardness-treatment cost of external water supply
- Saving on sludge handling costs due to drier sludge
- No operator required

The combined ongoing cost savings result in Water4All systems paying for themselves within a very short period of time.

Case Study

Installation at textiles company in Poland

Early in 2015, Water4All installed a water recycling system for one of Poland’s leading textile factories, which produces socks made out of different materials including polyester, cellulose, polyacrylic, polyamide, wool and cotton.

The water treatment system is designed for a capacity of 120m³ per day. The system is housed inside a 40 foot container. The recycled water quality is 5 times better than the public water.

Even though the wastewater composition and quantity vary greatly on a daily or seasonal basis, Water4All’s system automatically adjusts itself for these variations to maximise treatment efficiency and success. The system is remotely monitored and controlled.

Pollutants

The following chemicals are used in the company’s processes:

Metal complex dyestuff

Reactive dyestuff

Acid dyestuff

Softener

Optic brightener

Fixing agents

Biocides

Bleachers

Detergents

Peroxide removers

Neutralizing agents

Defoaming agents

Wetting agents

Solvents

Flame retardants

	Before Water4All Treatment	After Water4All Treatment
pH levels (at 25-30°C water temp)	5 - 10	7 – 8
Electroconductivity	> 6,000 µS/cm	≤ 20 µS / cm
TDS	1,500 – 2,500 ppm	< 13 ppm
Turbidity	150- 250 FNU	≤ 0.5 NTU

Daily capacity 120 m³ (Variation 50 – 120m³ per day)

Conductivity > 98%

Silicone emulsion removal > 99%

Nett Discharge UF < 1%

Recovery NF > 85 %*

Wastewater supply Supplied in batches in 15 hour periods, 6 days a week

COD removal > 98 %

BOD removal > 99 %

TOC removal > 99 %

Aluminium removal > 95%

Mg removal > 80 %

Colour removal > 99 %

Sodium removal > 60%

** Higher recovery possible by applying more NF membranes*

The resulting water quality is suitable for drinking and process reuse. Our client has now decided to install Water4All’s recycling system in their Asian factories as well.



Installation of containerized plant at Polish textiles company premises



Interior view of container

The Water4All Story

Water4All commenced commercial activities in 2012 and supplies innovative water treatment solutions to a wide range of stakeholders, from global municipal to industrial markets. These solutions include industrial wastewater management, clean water for consumers, and rescue water solutions.

The Netherlands' history with water resources goes back many centuries, and it is here that Water4All BV was founded by Dutch Engineer Evert Jan Lammers MSc, MBA.

Water4All systems' technology has been skilfully engineered by Eng. Lammers in close collaboration with Vitens NV and ISKI. Vitens is The Netherlands' largest public water company, providing treatment and distribution of drinking water to over 5 million Dutch citizens. ISKI is the public water utility institution responsible for the drinking water of the 14 million inhabitants of Istanbul, Turkey.

From this rooted Dutch background and with access to public water companies and international organisations, Water4all has developed extremely efficient water treatment technology based on proven treatment processes.

Water4All is proud to offer its water treatment solutions in India in collaboration with Ador Green Energy Pvt Ltd.



Please contact us for more information or to arrange a plant demonstration.

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