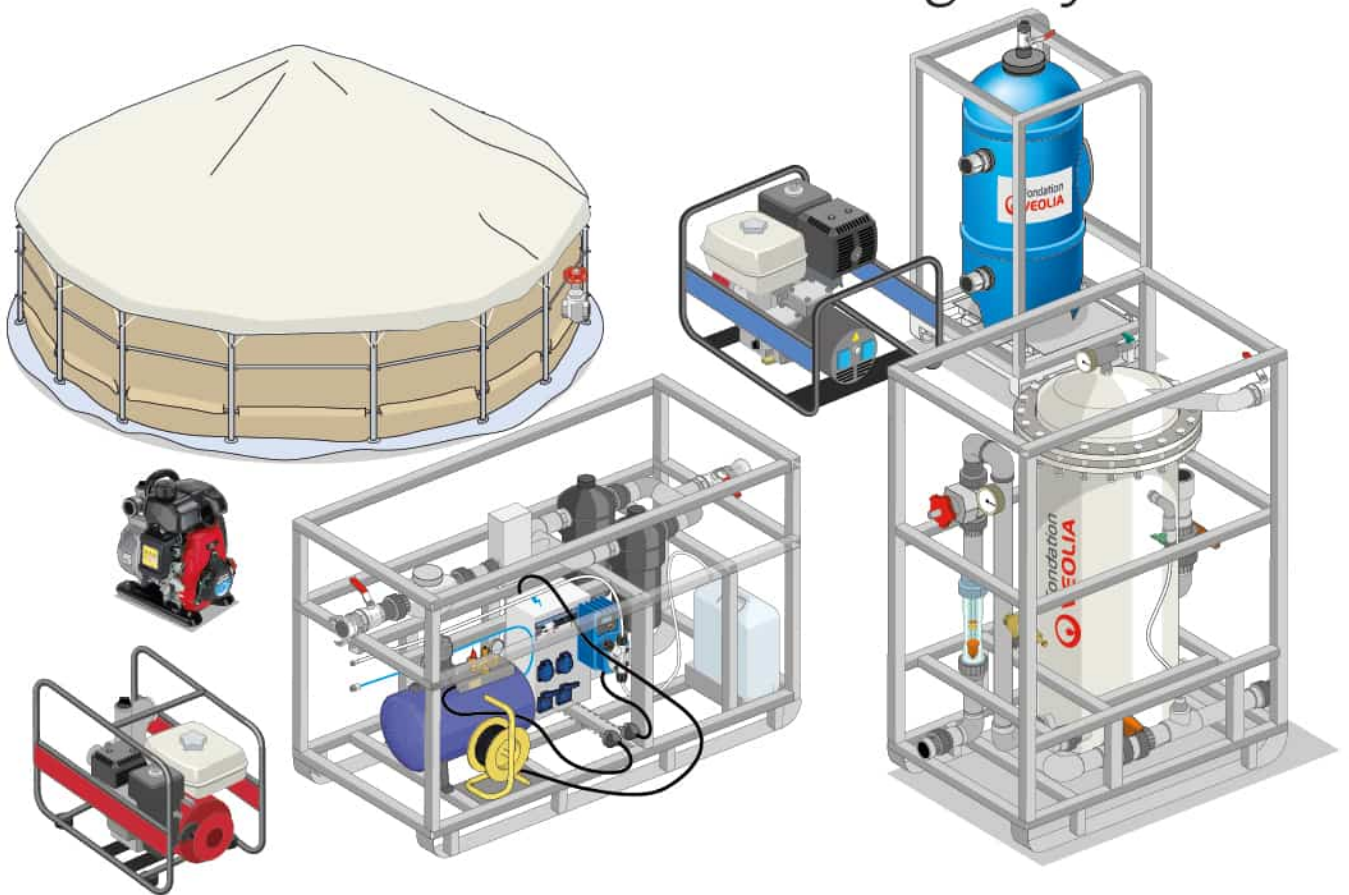


# Aquaforce 15000

Mobile water treatment unit  
for humanitarian emergency



User manual

# AQUAFORCE 15 000

Mobile Treatment water unit used in densely populated area or refugee camps, the Aquaforce 15000 supplies 2L of potable water per day, suitable for 15 000 people.

## LOGISTIC

Thanks to its optimized weight, its ergonomics, its robustness, its packaging and to its ease of operation, Aquaforce 15 000 can easily be transported.

- 4.5 T of material
- 25 m<sup>3</sup> in volume
- 1 day 1/2 of installation



## 5 DISTRIBUTION

## FILTRATION

UF membranes remove all of the suspended solids as well as the majority of the pathogens present in the water.

- 20 liters per day and per capita
- Capacity of 15,000 persons

## 5 DISTRIBUTION

## 4 STORAGE

## 5 DISTRIBUTION

## 3 DISINFECTION

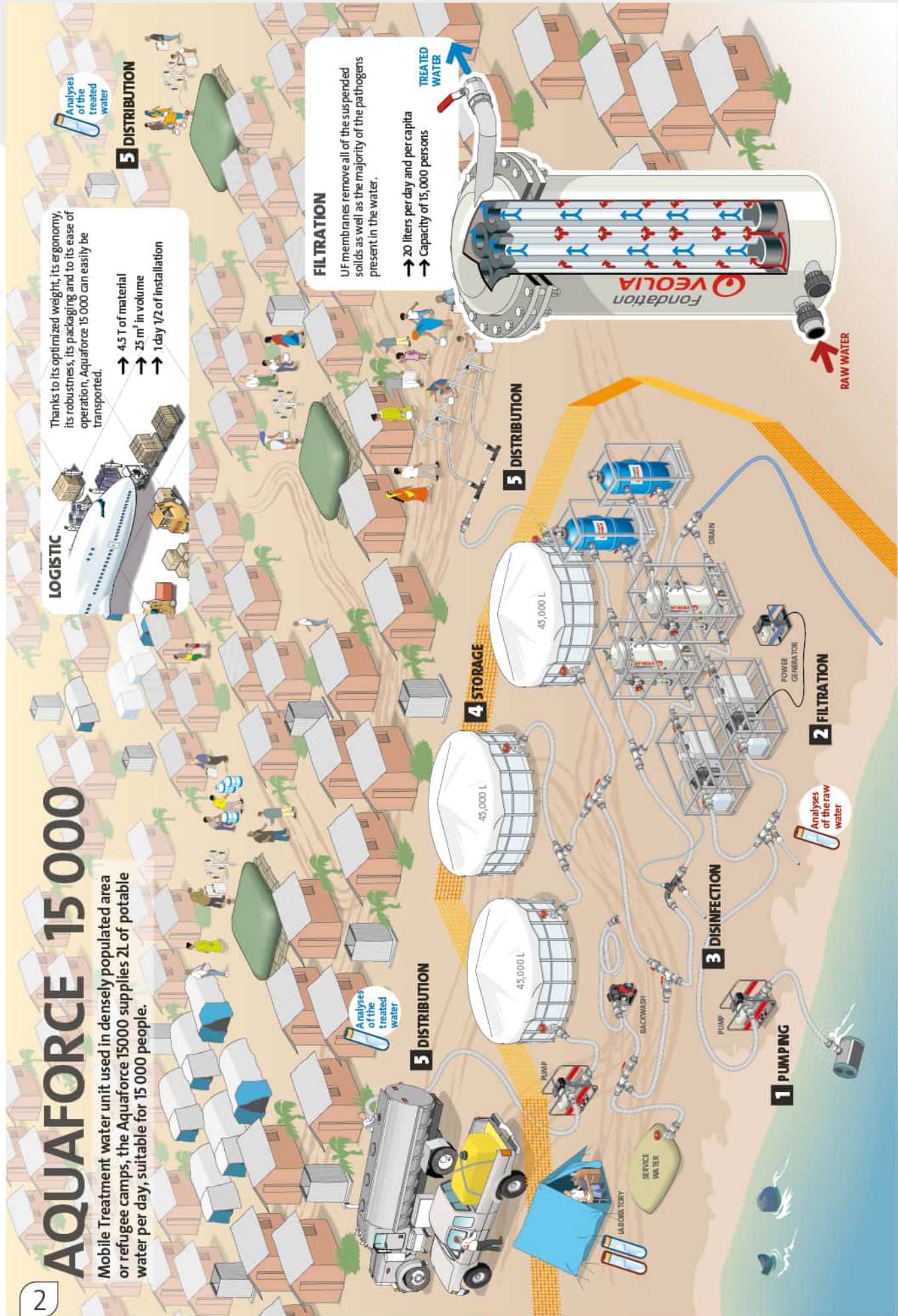
## 2 FILTRATION

## 1 PUMPING

Analyses of the raw water

RAW WATER

Fondation VEOLIA





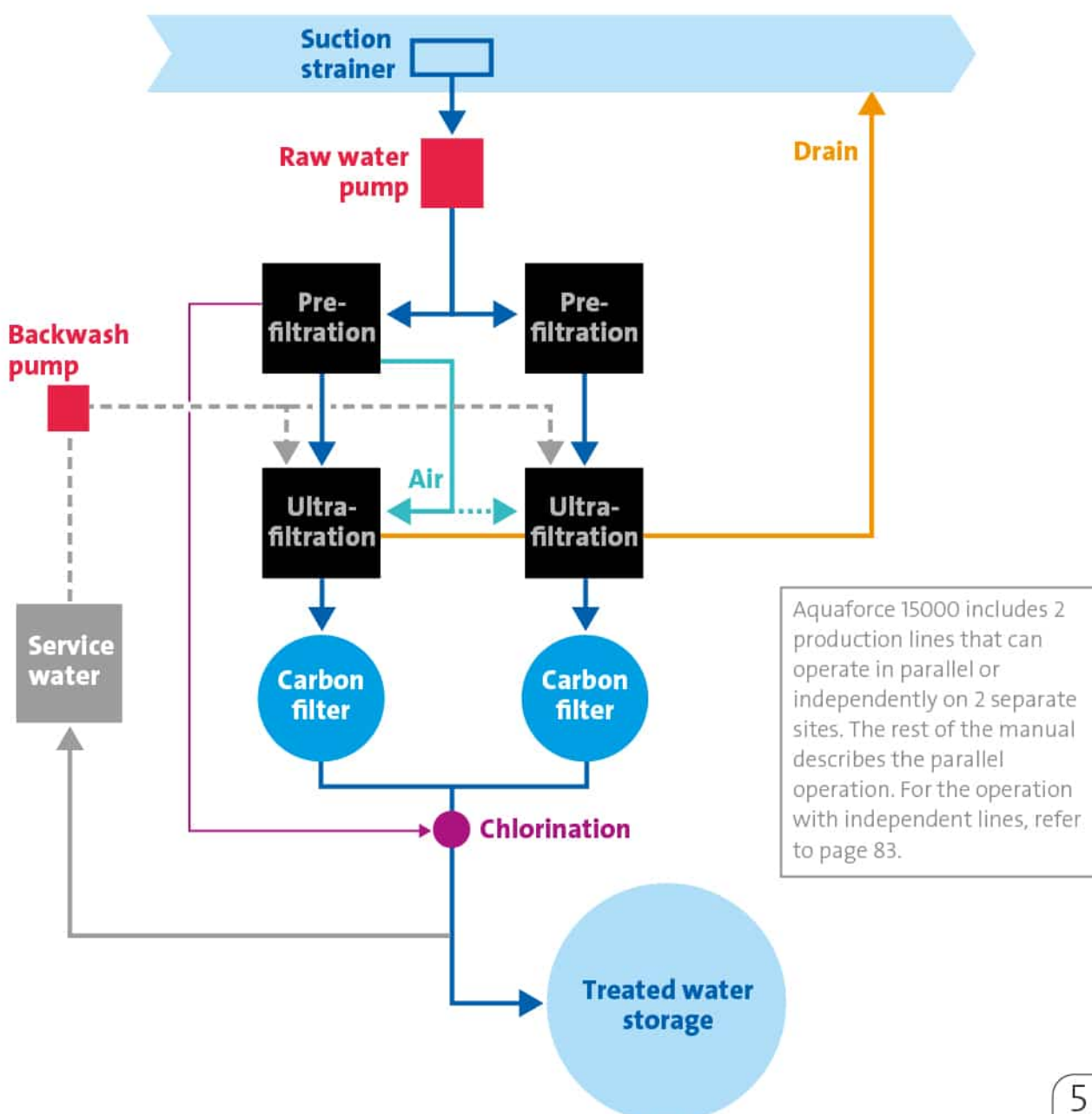
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**Aquaforce 15000 is a stand-alone drinkable water production kit, made for humanitarian emergencies or post-crisis management.** It's using an ultrafiltration process. Membrane filtration allows to remove all Total Suspended Solid (TSS), as well as the majority of pathogens that can be found in the water. Following the filtration, the injection of a chlorinated solution allows **to secure the quality of the delivered water.** Therefore, the delivered water is compliant with SPHERE standards and the norms of the World Health Organisation.

Aquaforce 15000 is able to treat a wide range of raw water, but cannot treat salted or brackish water. The production flow rate depends on the water turbidity, with a maximum of 15 m<sup>3</sup>/h **allowing to supply drinking water up to 15000 persons per day** (20 L/day/person). Aquaforce 15000 is made of three modules (pre-filtration, ultrafiltration, carbon filter) and includes a storage and manifold distribution system. The kit also **allows to perform treated water trucking** to supply flexible tanks and distribution manifolds near dispersed populations.





# Selection of the production site

Once assembled, the unit is very difficult to disassemble, move or even repair the various items. Thus, **great care must be taken in selecting the raw water, in choosing the installation site, and in the prerequisite works prior to installation.**

## CHECK LIST

### NEEDS ASSESSMENT



- ▶ **What's the population to be supplied with?**
- ▶ **Is the foreseen equipment sufficient?**

- ▶ Required quantity = minimum of 15 l/day/inhabitant (SPHERE norms)
- ▶ Distance from the population to the distribution point <500m

### RESOURCE



- ▶ **Is the resource adapted to my needs?**

- ▶ Flow rate > 15 m<sup>3</sup>/h
- ▶ pH between 6.5 and 8.5
- ▶ Conductivity < 1200 uS/cm

### ACCESSIBILITY/ACCEPTABILITY



- ▶ **Is the site accessible and accepted by all the stakeholders?**

- ▶ Local authorities / Property owner
- ▶ Users
- ▶ Tanker trucks
- ▶ Fuel and reagent supply

### HYGIENE/SALUBRITY



- ▶ **Is the site healthy?**

- ▶ Rain water drainage
- ▶ Filter backwash water drainage
- ▶ General aspect

### SAFETY

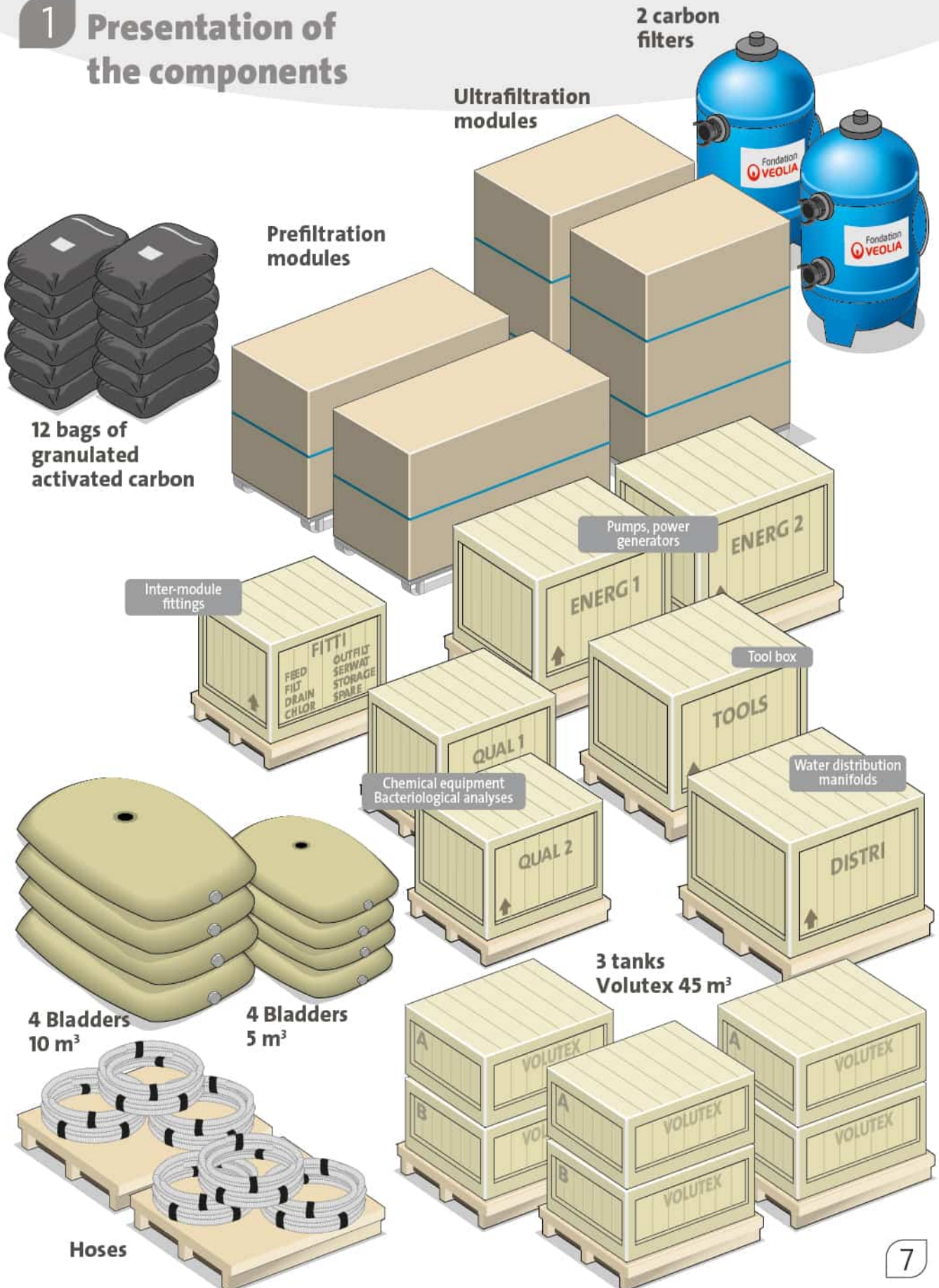


- ▶ **Is safety ensured for personnel and equipment?**

- ▶ Myself and my colleagues
- ▶ Equipment and stock (Day/Night)
- ▶ Population and users
- ▶ Natural risks (in particular flooding risks)

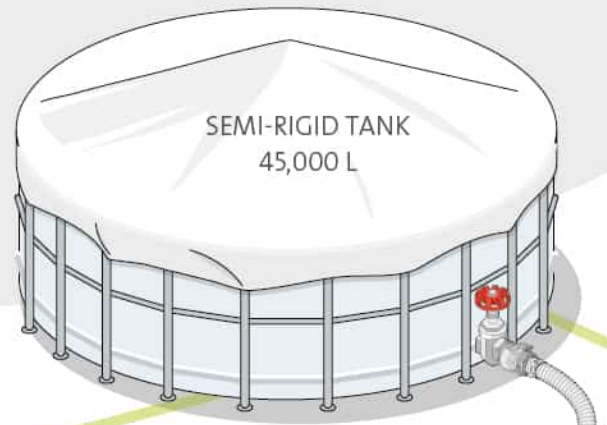
# Installation and operation

## 1 Presentation of the components



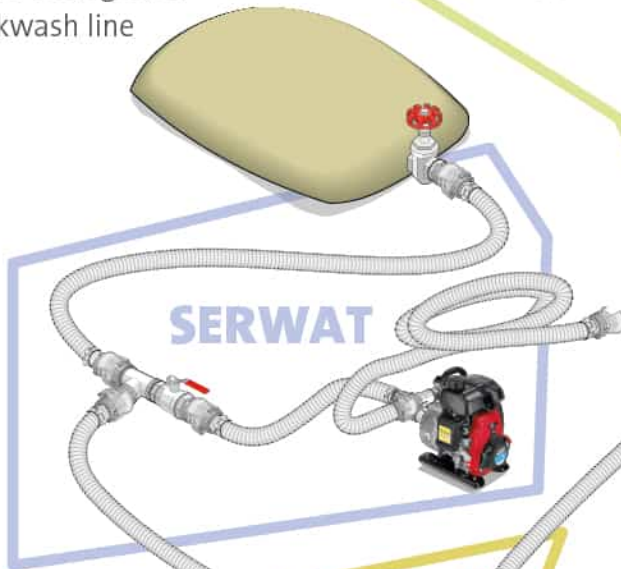


 A closer look at the "FITTI" box



**6 SERWAT:** Service water storage and backwash line

**7 STORAGE:** Filtered water storage



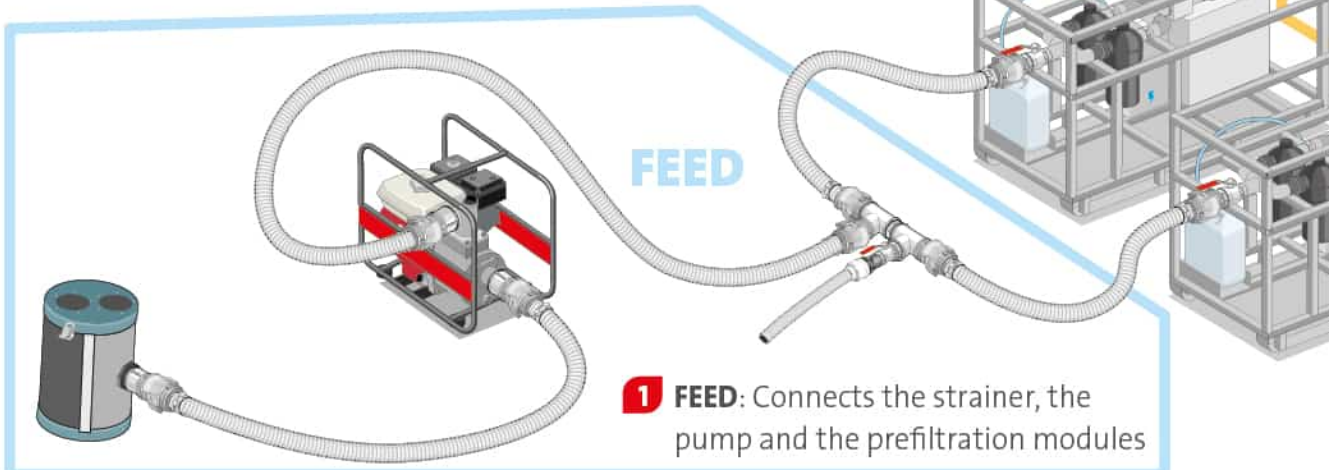
**4 CHLOR:** Filtered water sampling and chlorine injection line

STORAGE

**5 OUTFILT:** Orientation of the production: service water or storage

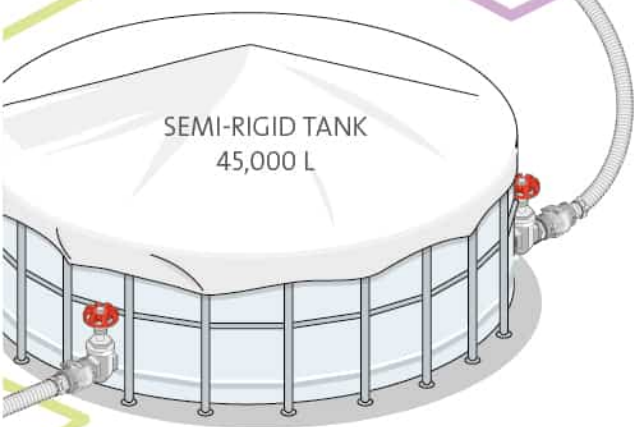
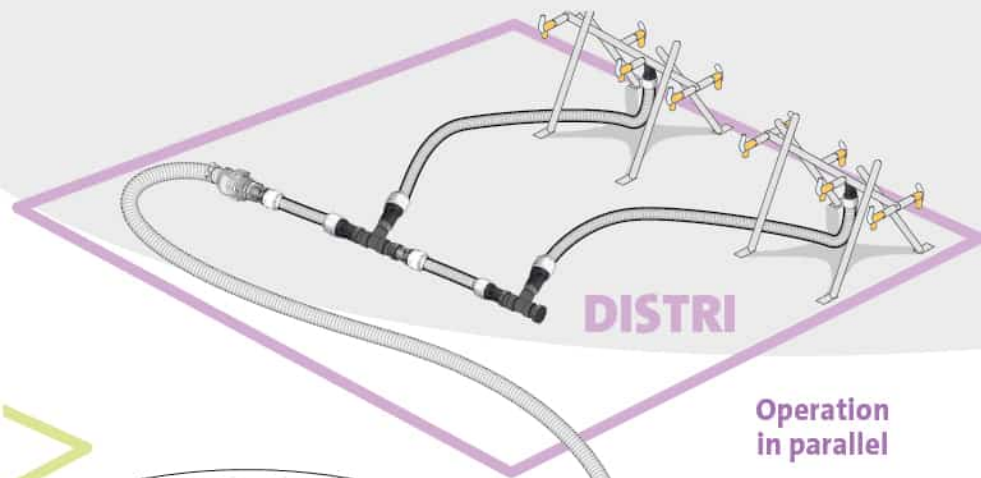
OUTFILT

CHLOR



**1 FEED:** Connects the strainer, the pump and the prefiltration modules





**Operation in parallel**

(15 m<sup>3</sup> /h)



**Operation of 2 distinct lines**

(7 m<sup>3</sup> /h)



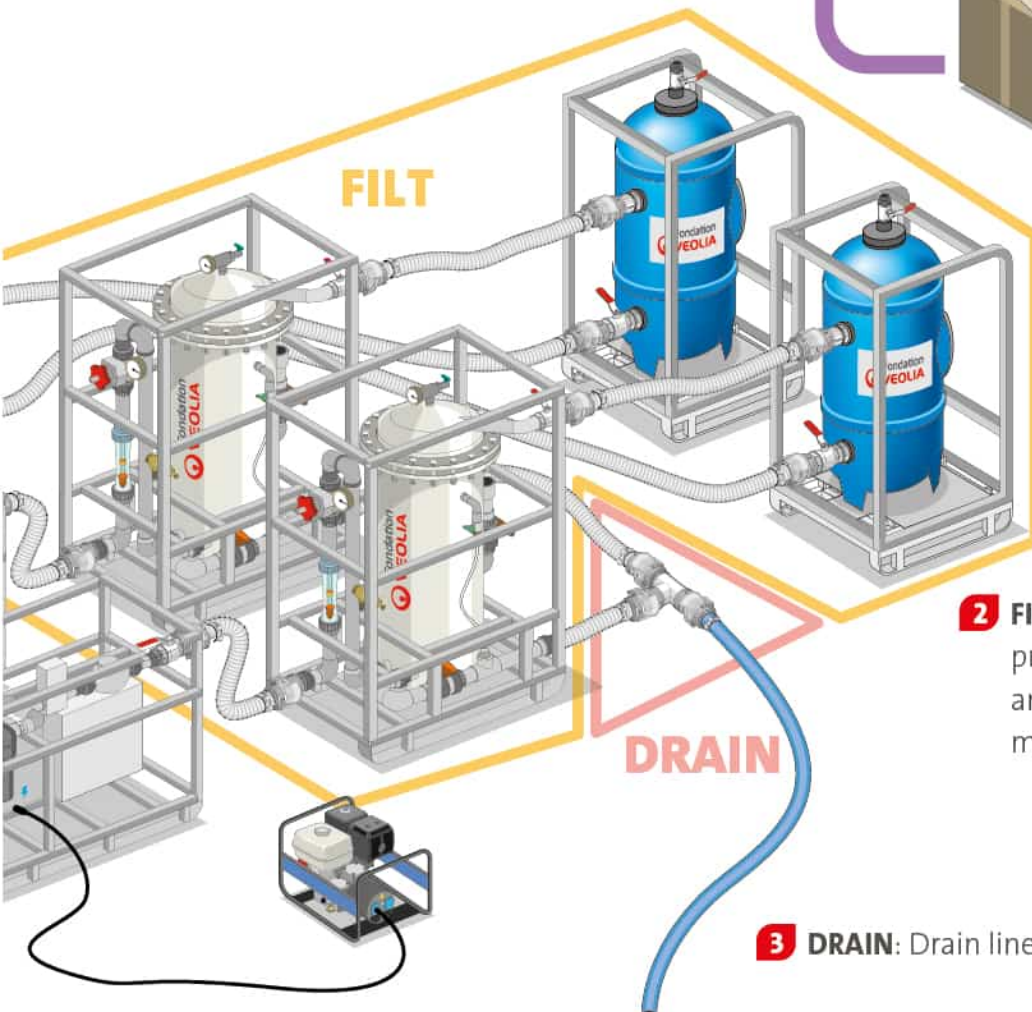
(main line:  
2 storage tank)

(7 m<sup>3</sup> /h)



(Secondary line:  
1 storage tank)

**SPARE**



**8 SPARE:** Elements to be used in certain cases to separate production lines. Also used for spare parts

**2 FILT:** Connects the prefiltration, ultrafiltration and carbon filtration modules

**3 DRAIN:** Drain line