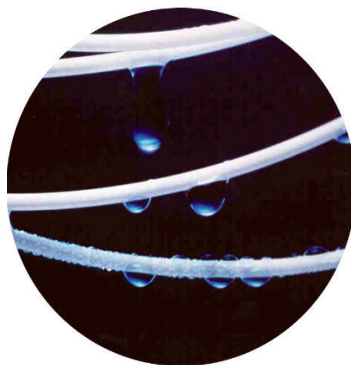




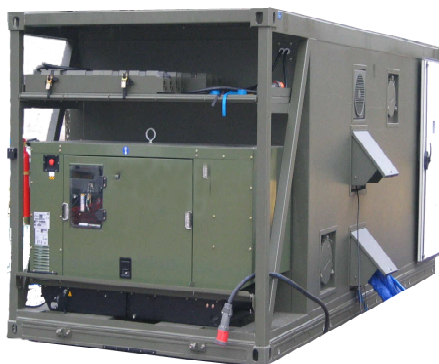
Aqua Technique  
Aqua Technique



## THE EQUIPMENT RANGE USING ULTRAFILTRATION PROCESS



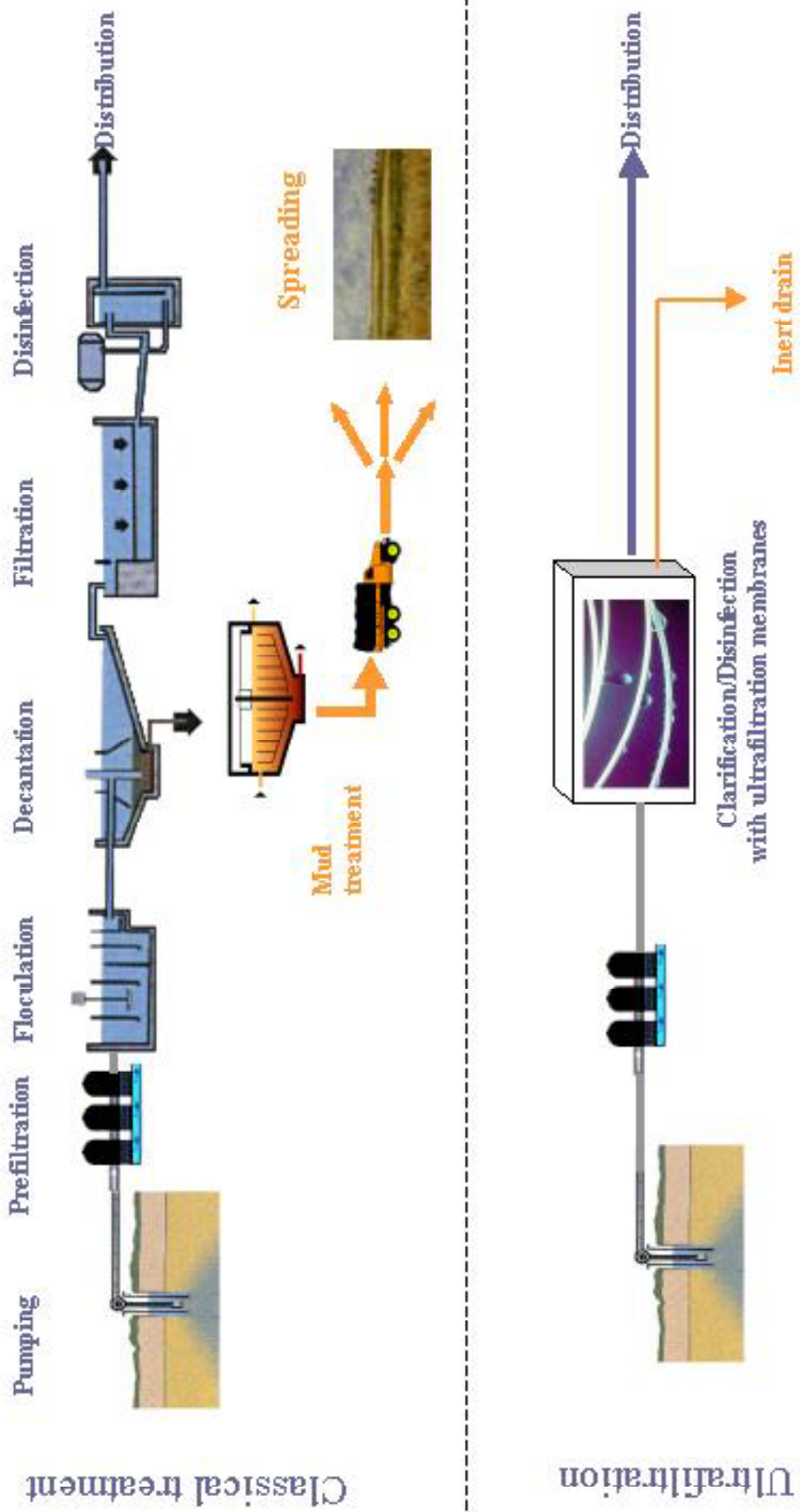
## TO PRODUCE HIGH GRADE DRINKING WATER



*Nous prenons soin de l'eau*

Parc de l'Île - 15/27, Rue du Port - 92022 NANTERRE - FRANCE  
Tél : 01 46 14 71 73 / Fax : 01 46 14 71 69 / Email : [info@aqua-technique.fr](mailto:info@aqua-technique.fr)  
<http://www.aqua-technique.fr>

## Comparison between classical treatment and ultrafiltration



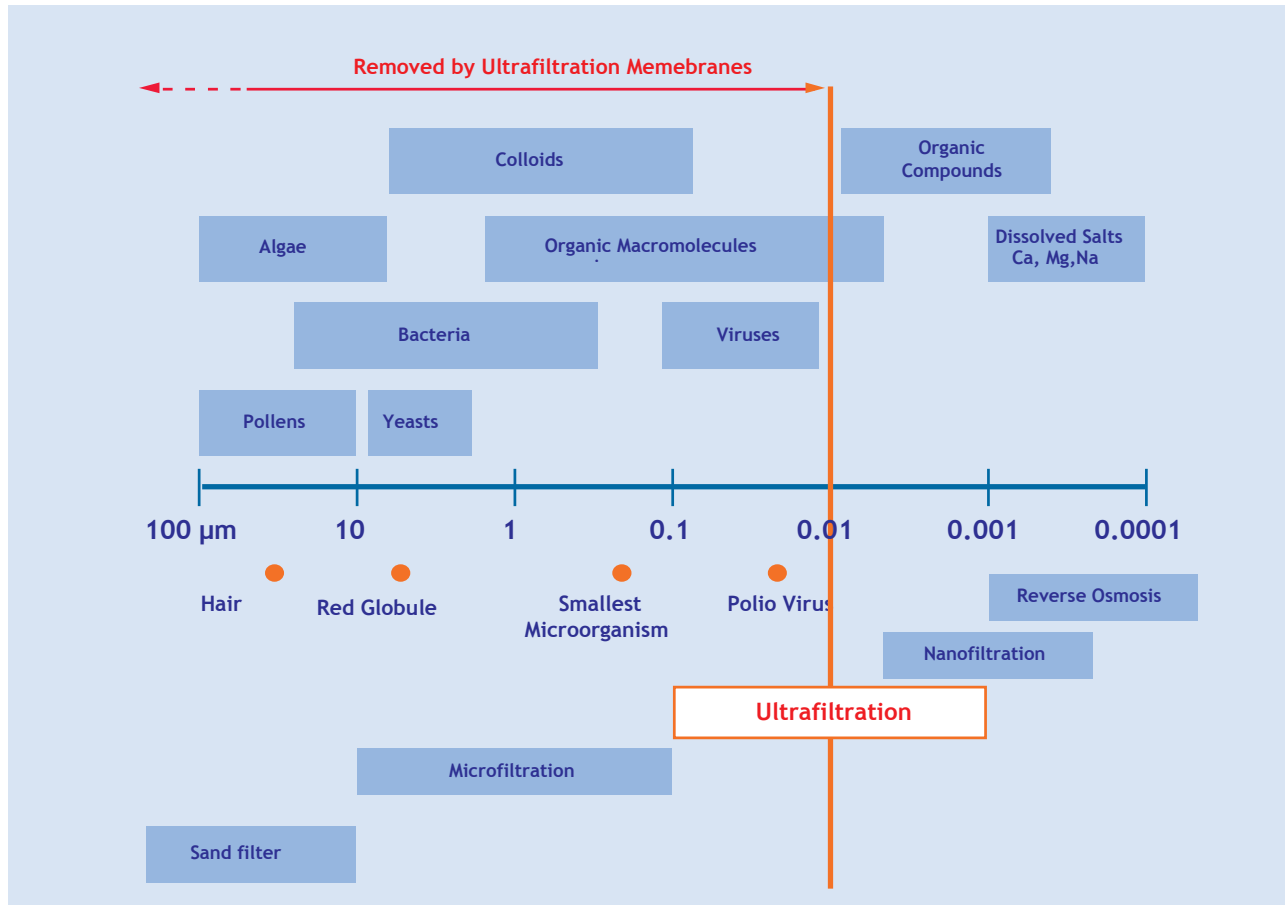
# Clarification and disinfection process

## What is ultrafiltration?

Generally, water treatment involves filtration followed by disinfection. In both processes, chemical products are used, hence the term « physical-chemical treatment ».

Ultrafiltration is solely a physical process in which the two operations are carried out concurrently. The technique consists in passing water through porous membranes in the form of long hollows fibres. The membrane wall acts as a filter for all particles larger than 0.01 micron: pollen, algae, parasites, bacteria, viruses, germs and large organic molecules. The result is perfectly pure water.

This is a universal process that can be used independently or as part of a multi-stage treatment line. Clarification and disinfection are performed in a single step.



## What do we mean by « ultra »?

The prefix « ultra » refers to the size of the membrane pores. There are three other membranes filtration processes, each producing a different result depending, among other things, on the size of the membrane pores. In microfiltration, the pores are larger and let through more impurities and micro-organisms.

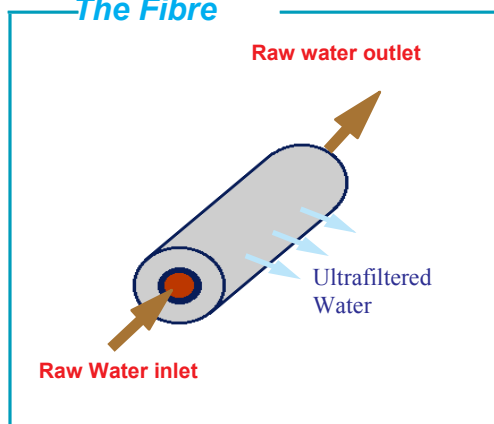
In nanofiltration, the pores are smaller and even retain some mineral salts in the water.

Reverse osmosis, another membrane separation technique, is used to demineralise water, and notably for seawater desalination.

**Aqua Technique** has opted for Ultrafiltration, where the size of the membrane pores serves the purposes of clarification-disinfection. The technique produces water that is completely pure but retains essential mineral salts. Its efficiency means that it can be easily combined with other water treatment processes. «Ultra» also means «beyond» or «superior» - an apt term as Ultrafiltration membranes produce water of « ultra » high quality.

The Ultrafiltration membranes used in the Aqua Technique's technique are of the so-called inner-skin type. The water to be treated circulates inside fibres or hollow tubes.

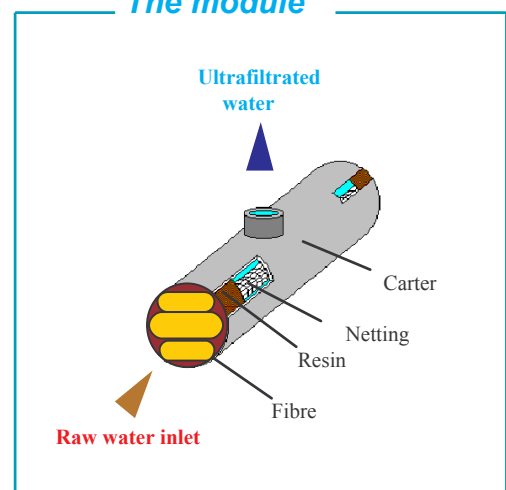
### The Fibre



**The fibre** is an hollow tube with a diameter of 1 mm. The fibre surface contains pores whose size is 10 000 times smaller than the pores of human skin. The water to be treated pass through the surface of the fibre from within.

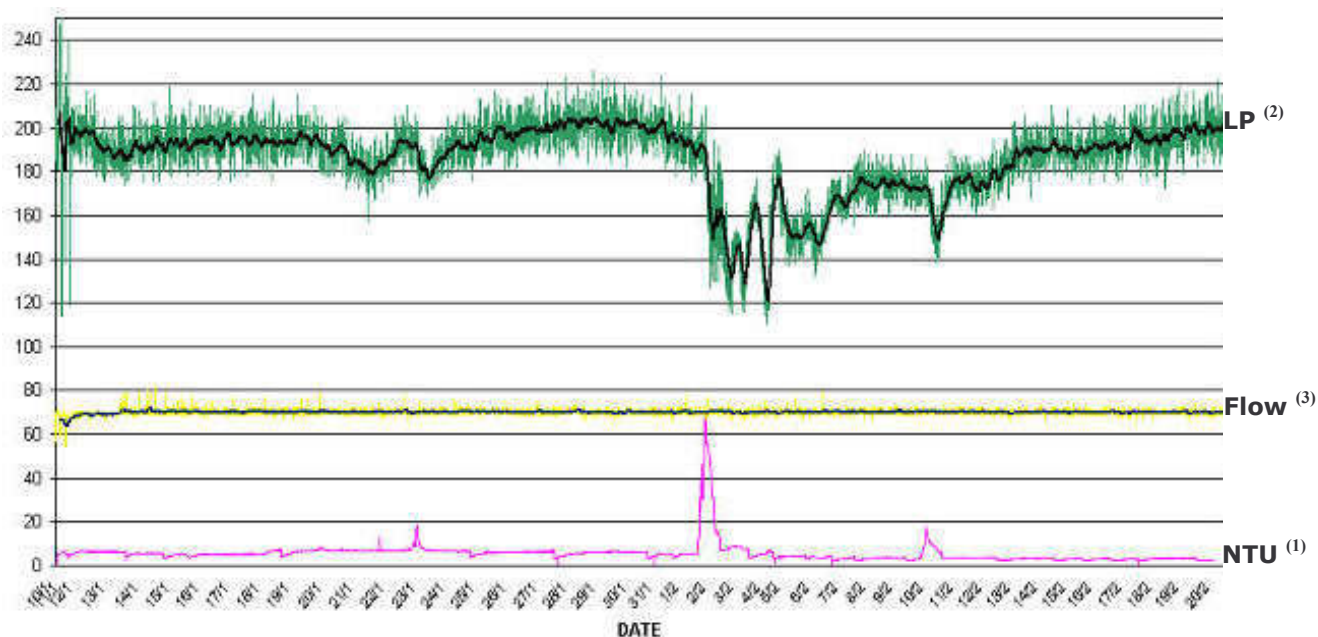
**The module** contains 18 400 hollows fibres assembled in bundles, through which the water is filtered from the inside to the outside. These 18 400 fibres represent 64 m<sup>2</sup> of filtration surface. They are coated by a resin which ensures perfect and sustained tightness of the module. In this way, the module prevents any contact between the raw and ultrafiltered water

### The module



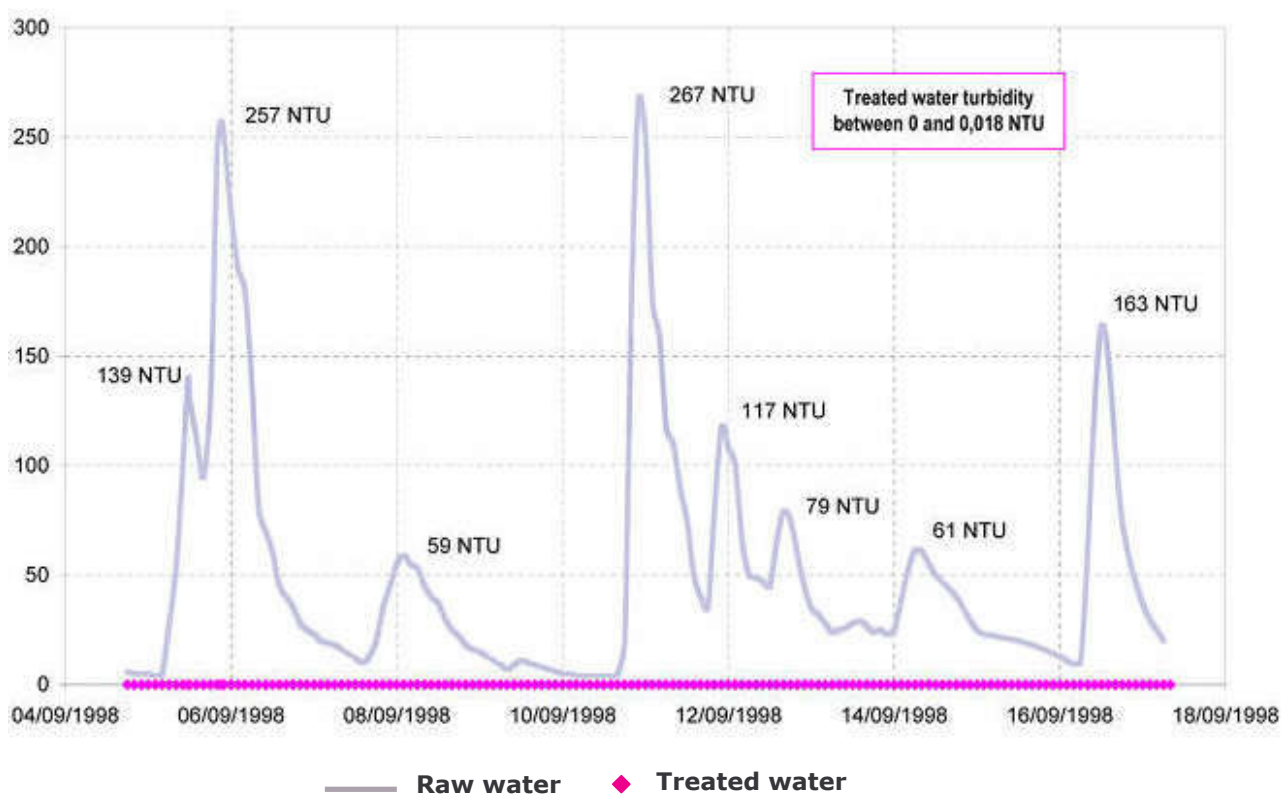
# Turbidity warranty : 0,1 NTU

## Example 1 : Beuzeville (France)



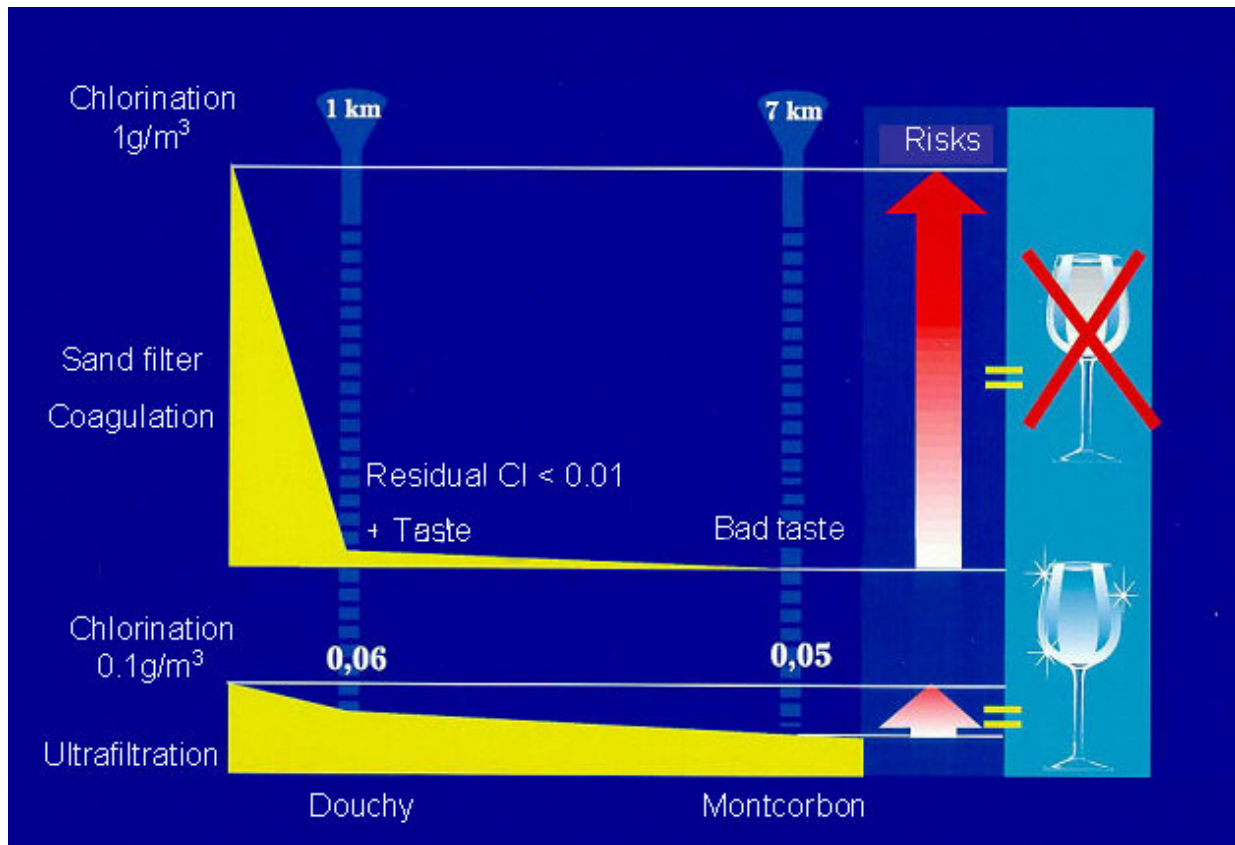
- (1) — NTU : Variation of the raw water turbidity
- (2) — LP at 20°C : Membrane's permeability variation in function of the turbidity
- (3) — Flow m<sup>3</sup>/h : Automatic regulation of the system. This is the most important curve for the user.

## Exemple 2 : Mailley et Chazelot (France)





# Network protection



The diagram shows how ultrafiltration contributes to maintaining water quality in the drinking water distribution system.

As seen in the upper part of the diagram, following in-line coagulation, 1 ppm of chlorine is required to obtain an acceptable residual chlorine level 1 km further on.

At the second reservoir; 7 km further on, all traces of residual chlorine have disappeared and the water is no longer potable. The chlorine has undergone a transformation and the water is now characterised by bad taste and odours (THMs).

In the lower part of the diagram, we see the result obtained by replacing in-line coagulation by ultrafiltration:

- 10 times less chlorine at the network inlet (0.1 ppm),
- residual chlorine maintained throughout the network,
- water of drinking water quality (with a residual chlorine level of 0.05 ppm),
- no formation of THMs (no bad taste).

# Rural Aquakiosk range



Mini

Number of modules	1	2
Production flow (m3/day) for a temperature of 20°C	10	20
Production flow (m3/day) for a temperature of 10°C	7,5	15
Dimensions LxIxh (mm)	1000 x 500 x 2000	
Weight	250 kg	270 kg
Installed power	1 200 W	
Consumed power	600 W	
Voltage	230 V	
Maximum pressure	1 bar	



Medium

Number of modules	2	4	6	8
Production flow (m3/day) for a temperature of 20°C	20	40	60	80
Production flow (m3/day) for a temperature of 10°C	15	30,5	46	61
Dimension LxIxh (mm)	1040 x 800 x 1950		1400 x 800 x 1910	
Weight drained unit	370kg	400 kg	430kg	460kg
Weight in operation	400 Kg	460 kg	520 kg	580kg
Voltage	230-415 V triphasé			
Installed power (PW)	2,3 kW		2,5 kW	
PW consumed for backwash	1 kW			
PW consumed for production	0,3 kW	0,5 kW	0,7 kW	0,9 kW
Maximum pressure	1,5 bar (production) 3 bar (rétrolavage)			
Outlet pressure	0,5 bar			



Maxi

Number of modules	1	2	3	4
Production flow (m3/day) for a temperature of 20°C	100	200	300	400
Production flow (m3/day) for a temperature of 10°C	76	152,5	229	305
Dimension LxIxh (mm)	1800 x 1405 x 2145			
Weight drained unit	700 kg	800 kg	900 kg	1000 kg
Weight in operation	800 Kg	1000 kg	1200 kg	1400 kg
Voltage	415 V triphasé			
Installed power (PW)	7,5 kW		9 kW	
PW consumed for backwash	4 kW			
PW consumed for production	1 kW	1,5 kW	2 kW	2,5 kW
Maximum pressure	1,5 bar en production 3 bar en rétrolavage			
Outlet pressure	0,5 bar			

# ***The KIOSK I***

*from 100 up to 400 m<sup>3</sup> of drinking water per day*



The Kiosk I is an ultra-filtration unit completely pre equipped in a standard 20' container...

The Kiosk I is fully autonomous thanks to its power generator compartment ...



It is arranged internally for an easy use by the local population and are equipped for several external taps.

The Kiosk is **compact**, container-size, easy to be transported by truck. It is ready for immediate connection to the existing local networks or boreholes.





# **KIOSK II**

*From 500 up to 1 500 m<sup>3</sup> / day*



Number of modules	5	6	7	8	10	12	14	16
Dimensions (roofless) (mm)	(LxIxh) 6040x2440x2590							
Weight in operation (t)	3,5	3,8	4,1	4,5	5,5	6	6,5	7
Voltage	7,5 kW				15 kW			
Outlet pressure	0,5 bar							
Maximum production (m³/d)*	500	585	660	750	1000	1170	1350	1500
Dia raw water (ND/ext)	100/110				125/140			
Dia treated water (ND/ext)	100/110				125/140			
Dia backwash water (ND/ext)	80/90				100/110			
Dia drain water (ND/ext)	80/90				100/110			

\* For a temperature of 20°C



## **KIOSK II**

*From 500 up to 1 500 m<sup>3</sup> / day*

From temporary

Provisory KIOSK II 16 Modules  
1500 m<sup>3</sup>/day



to definitive

Integration of the temporary Kiosk II in a building  
with a production capacity doubled



Beuzeville, France (27)

3 000 m<sup>3</sup>/day



## ***KIOSK II***

*From 500 up to 1 500 m<sup>3</sup> / day*

**Two Kiosk II  
Arezzo (Italy)**



# ***Military Air portable container***

## ***For the French Army***



Totally autonomous

# ***The MOBIKIOSK***

A 500 kg mobile unit installed on a trailer

Production 1 to 6 m<sup>3</sup>/h

Applications :

- Emergency supply,
- Seasonal peaks consumption,
- Accidental pollution,
- Holiday villages,
- Camping sites...



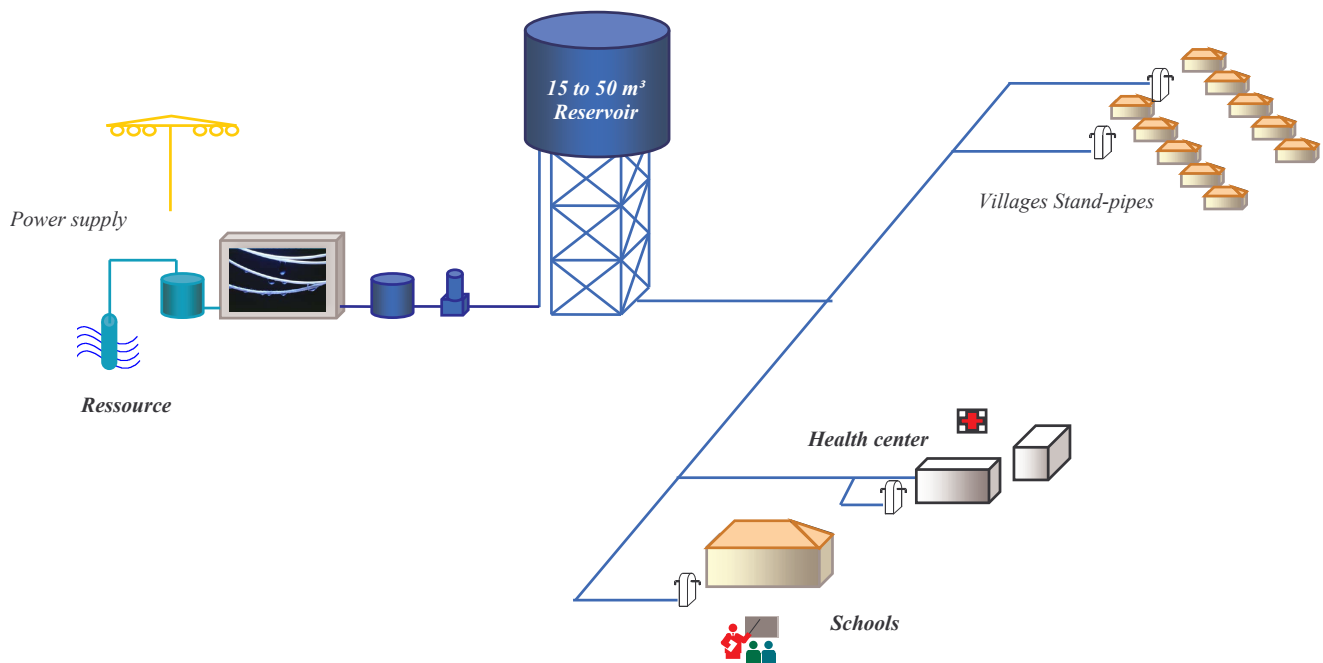


# ***The Rural unit***

The aim of the Rural project is to set up small water treatment plants to provide drinking water to rural communities. In most cases the water is delivered by stand pipe.

The treatment units are simple to install and fully automated making them reliable and easy to operate.

A single treatment unit can provide drinking water for villages of up to 2 500 inhabitants.

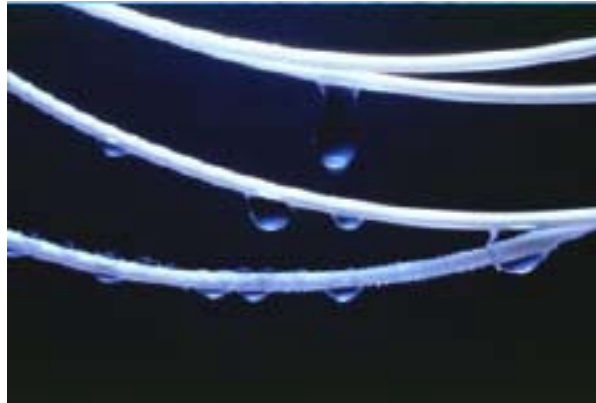


# REFERENCES

Start up year <i>Date de mise en service</i>	Place <i>Lieu</i>	Country <i>Pays</i>	Equipment <i>Equipement</i>	Flowrate m <sup>3</sup> /d <i>Débit m<sup>3</sup>/j</i>
2005	Heudreville en Lieuvin	France	1 Ecoskid 18 modules	1500
2005	Les Gets	France	1 Location Kiosk II 12 modules	800
2005	Mijoux	France	1 Location Aquakiosk en container	10
2005	Casablanca	Maroc	1 Aquakiosk Mini 2 modules	20
2004	Bordeaux	France	4 Unités de traitement d'eau aérotransportables	60
2004	Bordeaux	France	4 Unités de traitement d'eau aérotransportables	60
2004	Ellendale	Australie	1 Aquakiosk Maxi 1 module	65
2004	Montebenichi	Italie	1 Aquakiosk Medium 4 modules	40
2004	Lizzano	Italie	1 Aquakiosk Mini 2 modules	20
2004	Bordeaux	France	4 Unités de traitement d'eau aérotransportables	60
2003	Soa	Cameroun	1 Kiosk II 14 modules	1200
2003	Beuzeville	France	1 Kiosk II 16 modules	1500
2003	Saint Laurent de Brevedent	France	1 Kiosk II 16 modules	1400
2003	Saint Laurent de Brevedent	France	1 Aquakiosk Maxi 2 modules	100
2003	Cortona	Italie	1 Kiosk II 16 modules	1400
2002	Beuzeville	France	1 Kiosk II 16 modules	1500
2002	Lescheraines	France	1 Aquakiosk Maxi 2 modules	200
2001	N'Tui	Cameroun	1 Aquakiosk type rural	120
2001	Meyomessala	Cameroun	1 Aquakiosk type "rural"	29
2001	Meyomessala	Cameroun	2 Aquakiosk dans Kiosk II	45
2001	Arezzo	Italie	1 Kiosk II 5 modules	380
2001	Arezzo	Italie	1 Kiosk II 12 modules	800
2001	Arezzo	Italie	1 Mobikiosk	20
2000	New-Delhi	Inde	2 Aquakiosk type "urbain"	10
1999	Kangchup	Inde	1 Rehabilitation - Extension Unités compactes	14 500 9 000
1998	Langzon	Vietnam	16 forages	
1997	Imphal	Inde	3 kiosk I	400
1997	Imphal	Inde	1 Kiosk I	200

# Aqua Technique

***Means ultrafiltration...***



***... and aeration of lakes***

