

AQUATRACK® A novel optical on-line monitoring & sampling system for early detection of microbiological contamination in drinking water

Aqua-Q is a Swedish SME and a member of EU WssTP, Stockholm Cleantech and WIN Water in Lund. The founders of Aqua-Q have extensive applied consulting experience >20 years from Swedish and Finnish municipal and industrial water treatment. They have gained experience of water quality monitoring of drinking water and water for reuse.

Drinking water is our most valuable commodity, at the same time our drinking water is most vulnerable to different forms of contamination. No matter if the source is ground water or surface water or if it's treated with sophisticated technology.

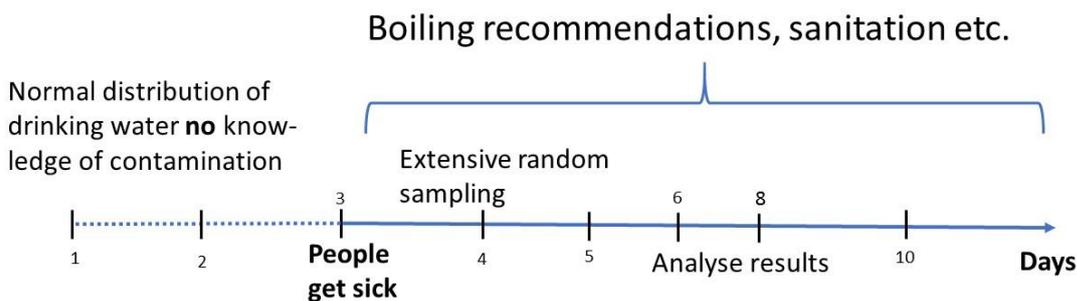


Today there is **no** user-friendly, intelligent nor accurate real time on-line surveillance system for the management of a treatment plant to know the sudden changes in water quality that comes and goes unpredicted/unnoticed. **Those changes having** high probability of microbiological growth due to contamination that can be harmful for the consumers or sensitive process that need clean and safe water. Typing of bacteria is not the target at this stage only early warning.

That's why AQUATRACK® is developed and EU ETV verified.

The practice today is periodic random or collective sampling. Sampling is the most important part for correct analyse. AQUATRACK® always collects correct water sample at the time of contamination which gives correct analyse results. This has been EU ETV verified.

Detection of water borne outbreaks the traditional way

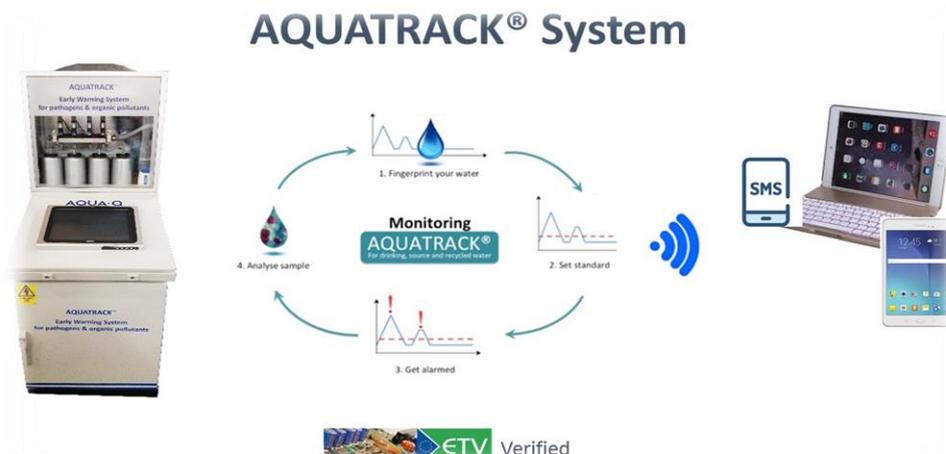


Outdated – expensive – low confidence

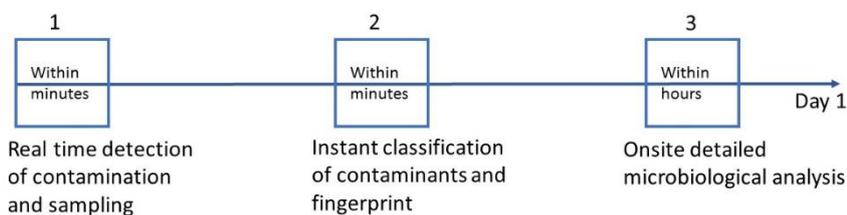
Founders of Aqua-Q have confirmed from their earlier experience that every drinking water irrespective of treatment conditions contains varying concentration of micro contaminants/micro particles that **must be** kept under constant supervision to avoid waterborne outbreaks.

2014 Aqua-Q developed in the EU R3Water demonstration project a novel intelligent dynamic sampler together with online surveillance and warning system AQUATRACK® (patent) for detection of micro contaminants/micro particles in drinking water (including biological contaminants, micro debris etc.). in that way, online identification/typing of bacteria and chemical compounds in water can be done cost effectively and water utility owner can overcome the limitations of random sampling.

AQUATRACK® **monitors 24/7** the stable quality of drinking water both at the reservoir and water network. The system automatically collects water sample when there is high risk of bacteria, protozoa growth and presence of chemical drug residues in water.



AQUATRACK® layered barrier for safety of water



Innovative – quick – accurate

AQUATRACK® provides **early warning**, preventive information of contamination, filter leakage (incl. membrane breakthrough), process failure, external infringement, sabotage, penetration of surface water due to climate change, and reports to the management and automatically captures the right water samples for analyse.

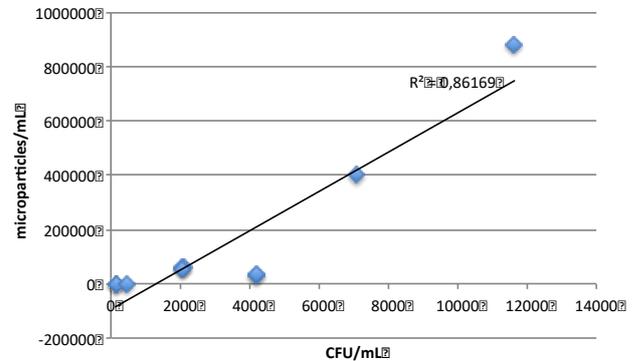
Correct water sample taken at the right time of contamination will always give correct microbiological analysing results.

The water samples collected by AQUATRACK® are immediately analysed at site by MBS MultiReader for presence of *E-coli*, Coliforms and heterotrophs. The combination AQUATRACK® and MBS MultiReader is a powerful tool for the water utilities. This information can be used to make correct decisions about the amount and kind of disinfection, hence avoiding *over-disinfection* and thus saving money.



USP of AQUATRACK®:

1. On-line surveillance and detection of micro contaminants (including biological and micro debris), **capturing intelligent active water sample for biological & chemical analyse**: i.e. collect a water sample right at the time of the observed anomaly. Correct active water sample gives always correct analysing results.
2. Samples collected will have High/strong **correlation** between micro particles/micro contaminants and microbiological growth.
3. Creation of individual **fingerprint** of different non-contaminated water.
4. Always generate **alarm** when there is **deviation** from stable water quality with time and date and the event is traceable.
5. Above points **1, 2,3 and 4** are EU ETV verified and certified for AQUATRACK®'s novelty and user friendliness.
6. Establish **periodic pollutant** profile (e.g. daily/monthly/yearly profile of micro-contaminant presence in water) and hence optimize treatment process.
7. **Enhance customer value**: AQUATRACK® detects membrane break-through immediately and alarms process failure and documents events. Secure customers against pathogen outbreaks well in time; thus, preventing large-scale public health hazards, epidemics, loss of produced food or beverage stock. Our system helps save customer reputation and enhances the customer confidence.
8. **Optimize disinfection usage** in source / product water.



Aqua-Q has strong R&D relationship with Swedish Environmental Research Institute (IVL), a leading global environmental research institute, and strong research support on microbiology and ceramic filter from the CSIR India.

The goal is to make AQUATRACK® the facto standard

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Prevention is better than cure!