

# MEASURING AND MONITORING ORGANICS IN DRINKING WATER

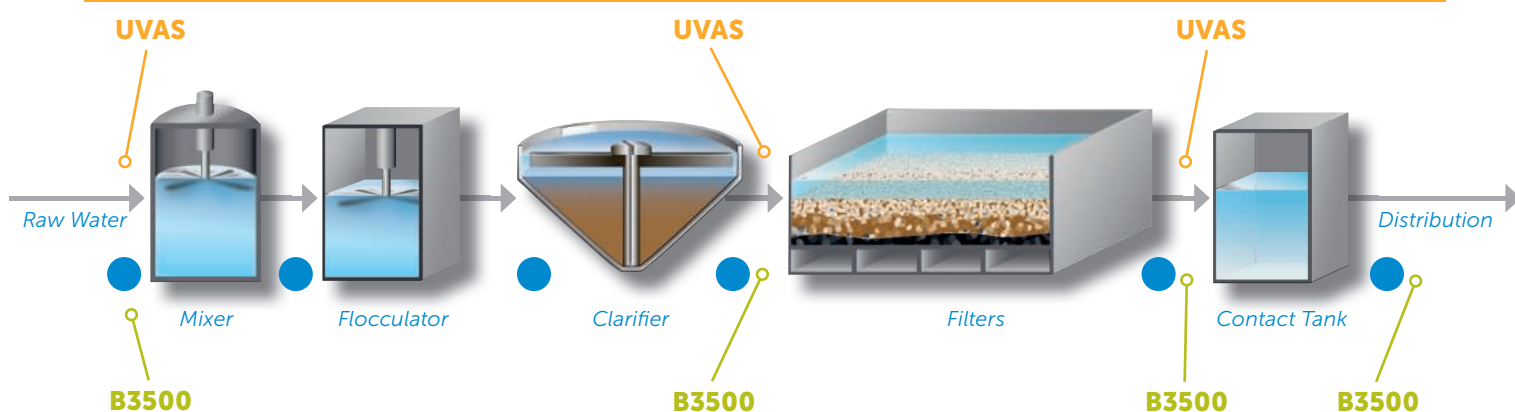
Drinking water comes from many different sources such as rivers, lakes, aquifers and man-made reservoirs. Treatment processes for source water varies widely depending on the source itself, as well as the impurities of the source water. One of the most prevalent impurities in source water is organic material. Organics in source water come from naturally occurring organic matter (NOM) as well as introduced organics coming from pollution. Organic material in drinking water affects the color, taste, and odor of water. In addition, during the disinfection process, residual chlorine can react with the organics to form disinfection byproducts (DBPs) that are potentially carcinogenic, such as Trihalomethanes (THMs) and Haloacetic acids.

To avoid the formation of DBPs, it is important to monitor and measure NOM. The **monitoring** of NOM in raw water is also a first indication for unexpected events and helps to calculate the capacity of a treatment process. A well-established method for monitoring organic load is to measure UV absorption at 254nm, as many organics absorb UV light at that wavelength. The amount of absorbed UV light is used to monitor NOM levels.

The common parameter for the **direct measurement** of NOM is Total Organic Carbon (TOC), which can be measured online and in the lab. While UV absorption detects only dissolved and double bonded carbon, TOC provides a quantified analysis of the total organic load in your water.

**Hach provides solutions for event monitoring and qualified TOC analyses both online and in the lab:**

## Monitoring Organics



## Measuring TOC

● Grab sample for verification of online measurement



Be Right™

### Monitoring Organics in Drinking Water

It is important to monitor organics, as this shows you the first indication of pollution or unexpected events in your source water. Further, it allows you to monitor the effectiveness of your treatment process.

#### Hach has a complete solution for event monitoring with UVAS and lab verification with DR6000.



##### UVAS plus sc Sensor

- Reagent-free determination of the organic load by SAC 254nm
- Self-cleaning enables reliability in harsh environmental conditions
- Direct UV measurement, no moving parts, reagents, set up



##### DR6000 Benchtop Spectrophotometer

- Pre-programmed UV application (SAC and  $\text{NO}_3$ )
- All remaining main parameters with ready-to-use test kits for drinking water applications pre-programmed
- Simplified self-programming for standard methods

### Measuring TOC in Drinking Water

To ensure the minimising and removal processes of organics in drinking water are more efficient, effective, and safer, the organics should be measured in raw and finished water. Further, measuring the organics at multiple points in your drinking water plant will allow you to optimise your source water strategies, oxidation processes, coagulation processes, and provide you with the essential data to maintain high drinking water standards in your communities.

#### Hach has a complete lab and process solution for your organics measurement needs.



##### Hach BioTector B3500 TOC Analyser

- High particle tolerance for surface water
- Low reagent consumption leading to low cost of ownership
- 99.86% uptime – high reliability



##### QbD1200 Laboratory Total Organic Carbon Analyser

- Simplified user interface with an intuitive display
- Easy maintenance thanks to optimised internal design
- Low cost of ownership with one pre-set reagent