

## FULLY AUTOMATED MEASUREMENTS OF MICROBIOLOGICAL WATER QUALITY – RESULT IN 15 MINUTES

### TARGET ORGANISM SPECIFIC MEASUREMENTS



#### ColiMinder Online Microbial Monitoring

The ColiMinder measures the metabolic activity of living microorganisms present in the sample. This metabolism takes place through enzymes and is the most basic indication of viable organism since it reflects the energy that the cell takes from the environment.

The metric is the enzymatic activity per volume of a specific enzyme. It reflects the energetic turnover of the target organisms per volume or in other words the concentration of living target organisms, which represents the degree of contamination.



#### Manual Lab Methods

Traditional culture-based laboratory methods use the fact that living organisms may proliferate and this way multiply to large numbers (cell colonies) and thus become visible.

The number of colonies formed is counted after the incubation time specified by the test manufacturer.

The number of colonies formed (CFU) is used to as a measure for the degree of contamination.

ColiMinder - Operational Monitoring	Compliance Testing
Fully automated measurements in short intervals.	Manual grab sampling at prescribed intervals.
Result after 15 minutes, presented in a result timeline that is accessible online and in real-time.	Manual sample preparation with standardized culture-based method to meet compliance requirements.
Shape and patterns of the timeline carry important information.	After 24 hours, a result is available that normally certifies an undetectable E. coli load.
Real-time results enable rapid response and correction to meet compliance limits at the lowest cost and with the highest level of safety.	Exceeded compliance limits are known with a delay of 24+ hours.



Comparative measurements can be used to create a correlation table, which can then be used for conversion.

**TO INCREASE DRINKING WATER SAFETY, WHO, EU DRINKING WATER DIRECTIVE AND OTHER WATER REGULATORS STRONGLY RECOMMEND OPERATIONAL MONITORING OF MICROBIAL WATER QUALITY.**

## WHO GUIDELINE

### STRENGTHENING DRINKING-WATER SURVEILLANCE USING RISK-BASED APPROACHES\*

© Strengthening drinking-water surveillance using risk-based approaches. Copenhagen: WHO Regional Office for Europe; 2019.

#### Operational monitoring is a key function

Operational monitoring is carried out by the water supplier to ensure that all barriers or control measures throughout the water-supply chain, including water treatment, are operating efficiently at all times.

#### Key message 4: Microbiological drinking-water quality is a key focus of risk-based surveillance

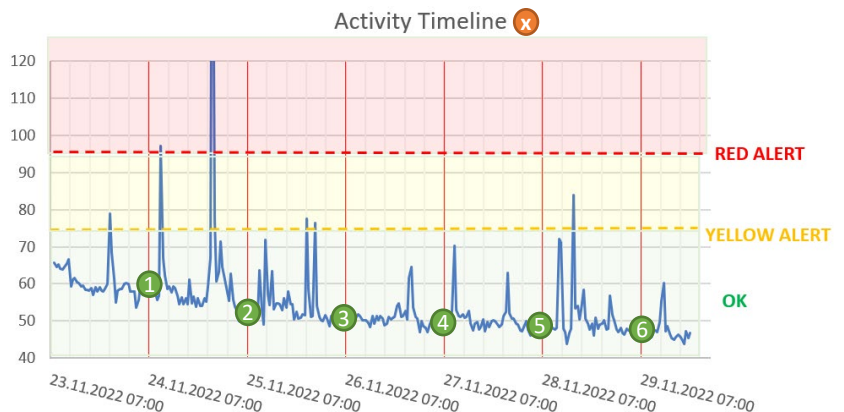
Identifying microbiological hazards and risks before they affect public health is an essential part of risk-based surveillance. Microbiological contamination is the most common and widespread health risk associated with drinking water and should be treated as a priority.

#### (...) overreliance on microbiological compliance monitoring has limitations that need to be kept in mind:

- (...) spot checks may miss critical contamination events, such as wet-weather events that affect source-water quality and possibly drinking-water quality, particularly in small supplies where sampling typically is infrequent" (..)
- it takes time to measure indicators, so the water has probably been drunk by the time a problem is confirmed"

\*source: <https://apps.who.int/iris/bitstream/handle/10665/329396/9789289054430-eng.pdf>

**ONLINE  
OPERATIONAL  
MONITORING**



**MANUAL  
COMPLIANCE  
TESTING**



E.coli Results		Actual date:	29.11.2022
Date	Sampling time	Result	
Wednesday November 23rd 2022	07:05 a.m.	non-detect	
Thursday November 24th 2022	07:00 a.m.	non-detect	
Friday November 25th 2022	07:10 a.m.	non-detect	
Saturday November 26th 2022	06:55 a.m.	non-detect	
Sunday November 27th 2022	07:00 a.m.	non-detect	
Monday November 28th 2022	07:00 a.m.		
Tuesday November 29th 2022	07:10 a.m.		
Wednesday November 30th 2022			
Thursday December 1st 2022			



It is a future goal to establish enzymatic measurements as a standard.



The activity timeline shown is an actual timeline measured at a semi-treated drinking water line. Please see WHO document Box 3 page 24.