8th Webinar

Biomonitors and

Daphnia Toximeter application in Waste Water Treatment Plants

Webinar program

Part 1	biomonitors	10 min
Part 2	DTox in WWTP	10 min
Part 3	interview	10 min

Feedback
Follow up

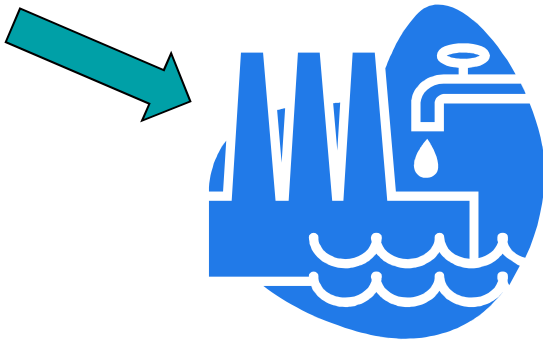
Toximeters - Applications

Biomonitors are used where drinking water is

supplied,

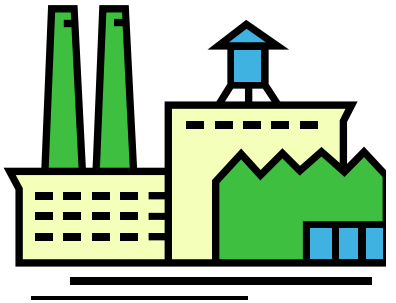
Rivers and lakes

conditioned or



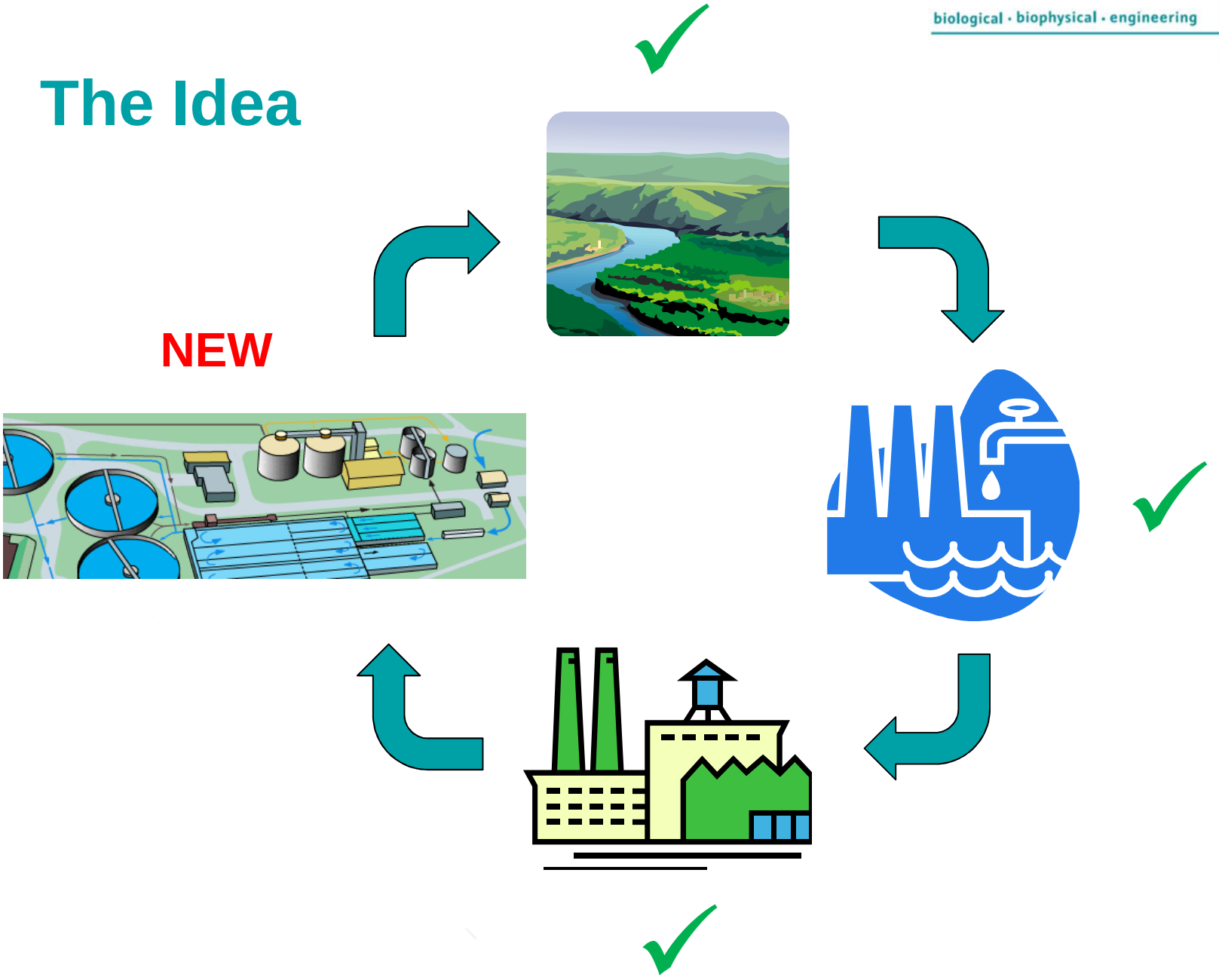
Water works

processed.



Food industry

The Idea



The idea

1. Quality control of effluent
   - To ensure and to prove continuously the emission.
   - Especially important for water works which discharge their waste water into rivers which are used to supply drinking water.

2. Control of aeration basin inlet
   - To protect the bacteria in the aeration.
   - For economic benefits.

Waste Water Treatment Plant in Bülk

(Schleswig-Holstein, North Germany)

- Size:
  - 375 000 population equivalent (PE), household (~ 80 %) and industrial waste water (~ 20 %)

- Amount of waste water:
  - 52 000 m³ per day

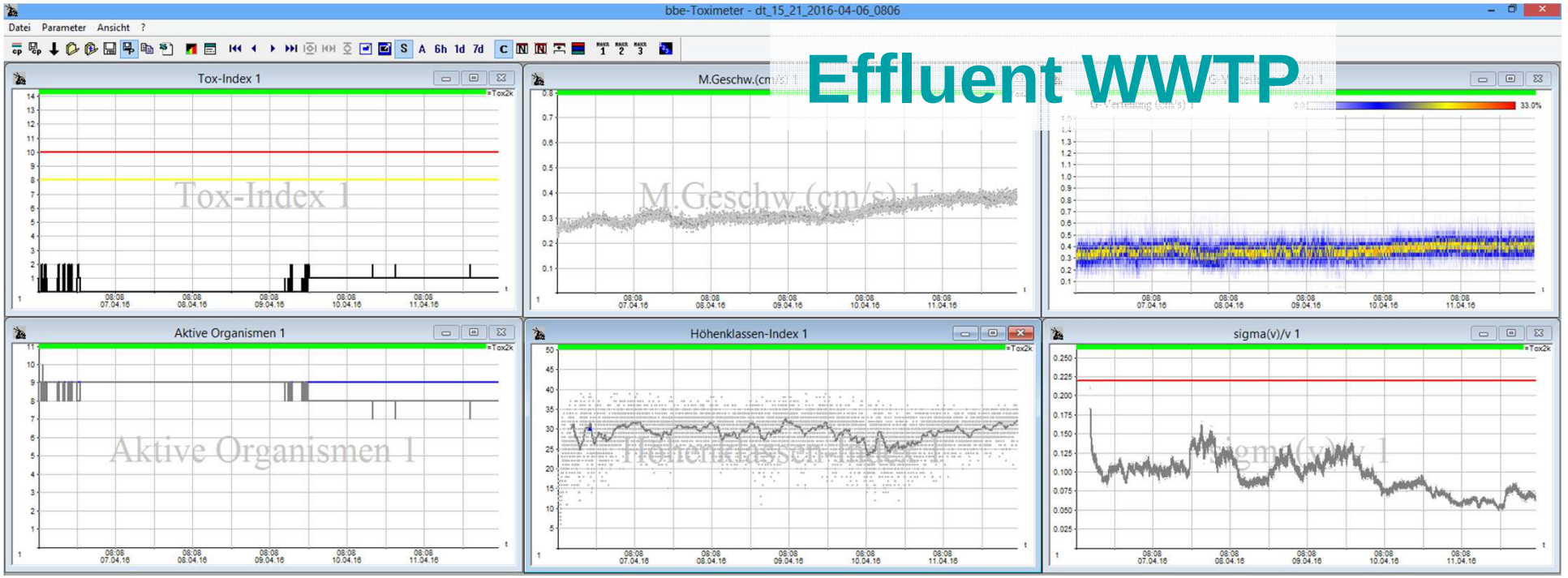
- Cleaning capacity for biodegradable pollutants:
  - 98 %

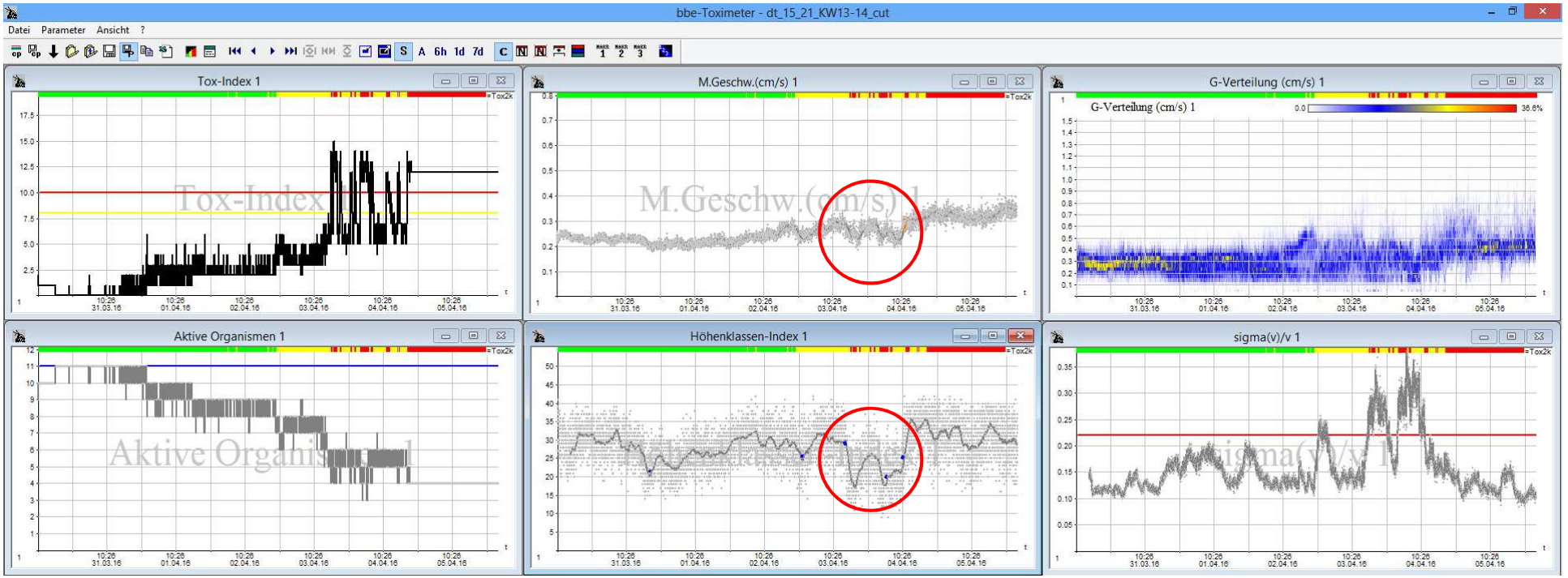
Abbildung : „Klaerwerk Buelk nahe Kiel“ von Louis-F. Stahl. Lizenziert unter CC BY-SA 3.0 de über Wikimedia Commons – https://commons.wikimedia.org/wiki/File:Klaerwerk_Buelk_nahe_Kiel.jpg#/media/File:Klaerwerk_Buelk_nahe_Kiel.jpg

WWTP in Bülk - birds view

Effluent WWTP

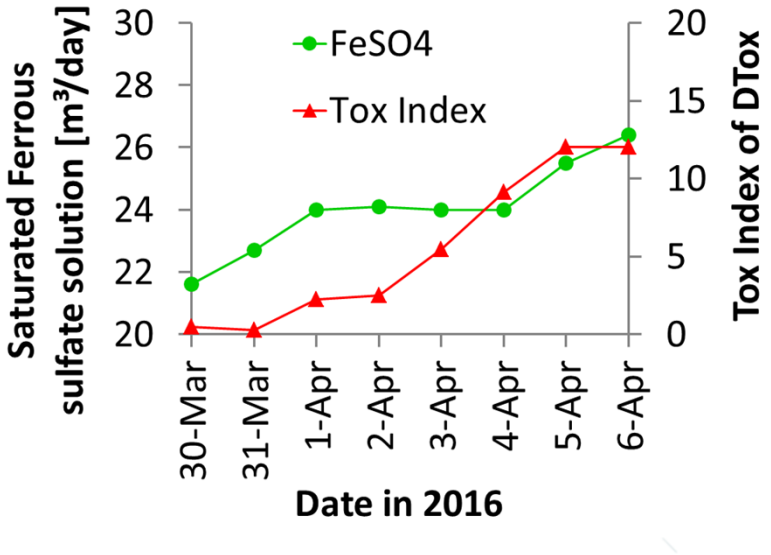
The purified water after the last filtration step was used to test the application of the Daphnia Toximeter.

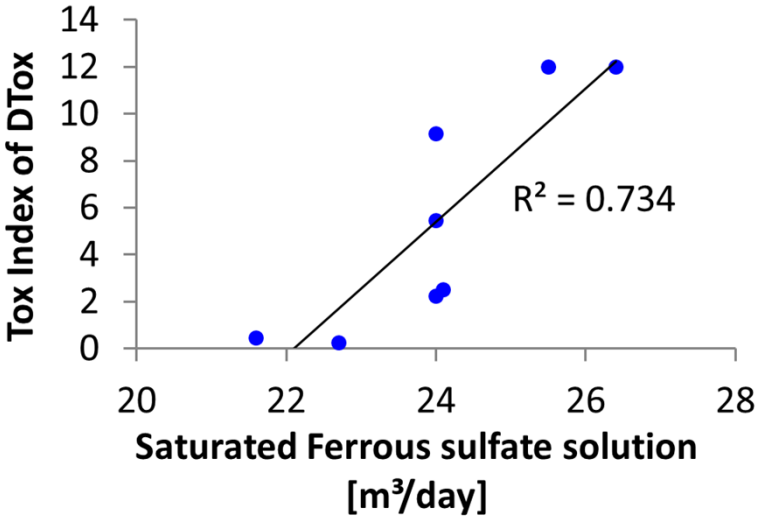

bbe-Toximeter - dt_15_21_2016-04-06_0806
Datei Parameter Ansicht ?
Tox-Index 1
M.Geschw.(cm/s) 1
G-Verteilung (cm/s) 1
Aktive Organismen 1
Höhenklassen-Index 1
sigma(v)/v 1
Effluent WWTP


bbe-Toximeter - dt_15_21_KW13-14_cut
Datei Parameter Ansicht ?
Tox-Index 1
M.Geschw.(cm/s) 1
G-Verteilung (cm/s) 1
Aktive Organismen 1
Höhenklassen-Index 1
sigma(v)/v 1

Effluent WWTP

The toxicity index of the Daphnia Toximeter increased by rising use of ferrous sulfate as flocking agent for phosphate in waste water.

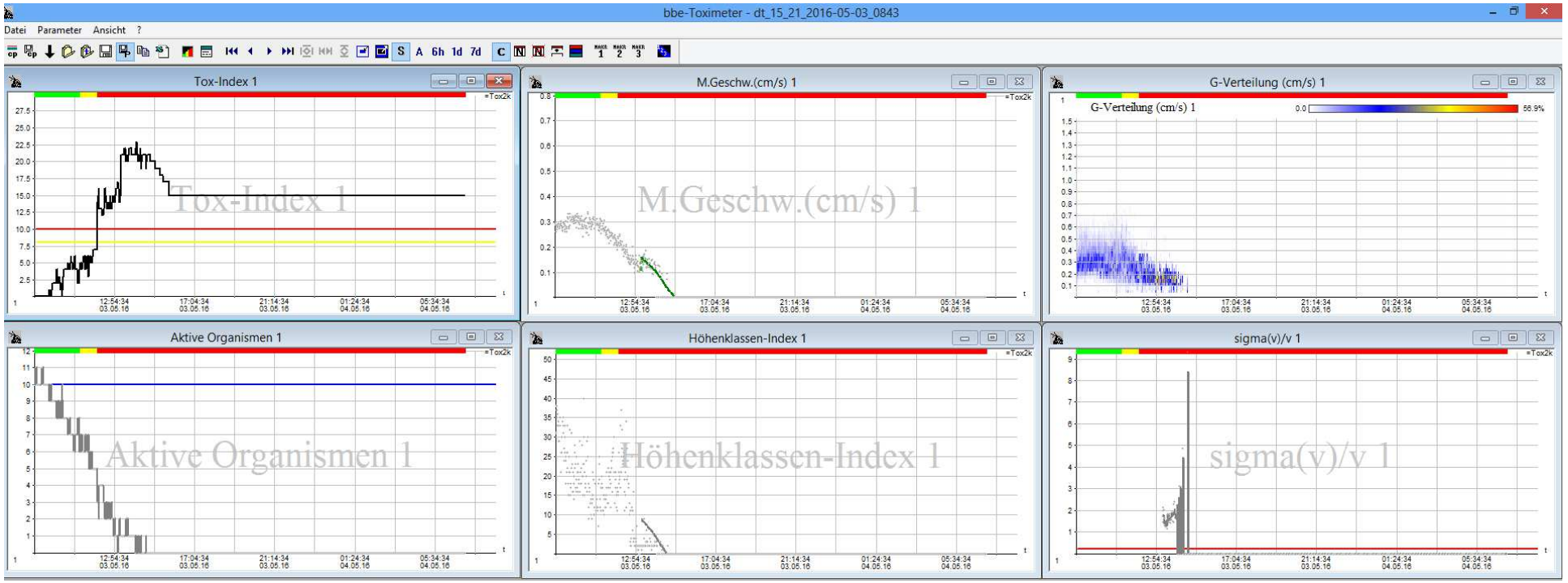




Inlet aeration basin

The water which is discharged in the aeration basin was used to test the application of the Daphnia Toximeter, too.

Inlet aeration basin



Conclusion

- The bbe Daphnia Toximeter provides excellent sensitivity for a wide range of toxic substances harmful to human being.
- The simple arrangement enables an continuous and reliable monitoring of water quality.
- The Daphnia Toximeter has proven its suitability for quality control in the effluent of waste water treatment plants (mixed water from household and industry).

Many Thanks for your attention