

IMPACT OF CHANGED INFLOWS DURING RAINFALL TO THE WWTP WILHELMSHAVEN

Assignment

In order to significantly reduce combined sewer overflows (CSO) in the water body Jadebusen, a Real time control (RTC) of the sewer system was developed by the itwh GmbH. Furthermore, the construction of an additional pressure pipeline from the southern pumping station (PS) to the WWTP is discussed. Both measures are to be examined with respect to the optimal alignment of the total system, sewer system and WWTP. Principally measures to reduce CSO's produce an increased loading to the WWTP. To what extent the capacities of the WWTP, in relation to these modifications, suffice, or alternatively are to be expanded reasonably, is being assessed within this project.

The assignment contains three major parts:

- Analysis of the operating and the cleaning performance of all process stages: pre-treatment, biological aeration and secondary clarification
- Assessing the hydraulic performance of the WWTP
- Determining the additional load

- Determining the impact of the RTC on the WWTP and the emissions



Hydraulic bottleneck: the primary clarifier

Scope

- Compilation, collection and analysis of measurements
- Determining the capacity and the maximum inflow of the WWTP
- Developing recommendations for operational optimization
- Examination of the hydraulic capacities with a simulation model. Developing optimization measures.
- Extending the sewer simulation model by integrating loads
- Setting up and calibrating a biochemical WWTP model with SIMBA
- Connecting sewer system model (HYSTEM-EXTRAN-quality) and WWTP model (SIMBA) by itwh.CONTROL
- Case study with the integrated model

Short description

Client Wilhelmshavener Entsorgungsbetriebe (WEB)

Project period 2009

Fee 87.700 €

Characteristics

Measurement analysis of the WWTP
 Developing operation optimisation measures
 Reviewing hydraulic capacities of the WWTP with HYDKA
 Integrated simulation study of sewer network (HYSTEM-EXTRAN) and WWTP (SIMBA)

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