



Investigation of pollution and treatability of urban runoff from an industrial area

Urban Stormwater runoff can be highly contaminated and can have a significant negative impact on the quality of receiving water bodies. The objective of the European Water Framework Directive is a good ecological as well as chemical status of surface waters and groundwater. To achieve this, the treatment of urban stormwater runoff prior to the discharge any receiving water body becomes inevitable in many cases.

At the federal level in Germany there will be a new technical guideline concerning the treatment of stormwater and combined sewage is in preparation. This new guideline will introduce a new parameter to determine whether stormwater treatment before the discharge into the environment is needed. The new parameter (AFS63) refers to the fine fraction of suspended solids (smaller than 63 μm). Most of the pollutants as well as heavy metals that occur in stormwater runoff are particle bound. The limitation to the fine fraction of suspended solids takes into account that in this fraction the contamination with pollutants is disproportionately high.

Within this study a stormwater treatment facility, located at an industrial area in the city of Freiburg, is monitored to investigate the following issues:

- appearance of AFS63 as well as the associated heavy metals and organic micropollutants within urban runoff
- connection between selected pollutants and the indicator parameter AFS63

Therefore rain events are sampled volumeproportional and the particles are further analysed for their pollution within different particle size fractions ($< 63\mu\text{m}$, $< 125\mu\text{m}$, $< 250\mu\text{m}$, $< 2000\mu\text{m}$).



Figure: Clear water discharge after sedimentation process

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