

# Integration of a Filtration Stage into an Existing Cooling Water Circulation of an Industrial Firm in Frankfurt (Germany)



BAUEREnvironmentGroup

By order of the site operator of the industrial park of Hoechst in Frankfurt (Germany), BAUER Environment Group delivered and installed a filtration stage for the filtration of a component current in an industrial. The filtration stage treats water taken from the cooling water circulation returning the cleaned water to the cooling water system afterwards. The stage consists of two filters made of steel and treating 90 m<sup>3</sup> of water per hour each. The filtration stage has been integrated into the existing cooling water circulation.

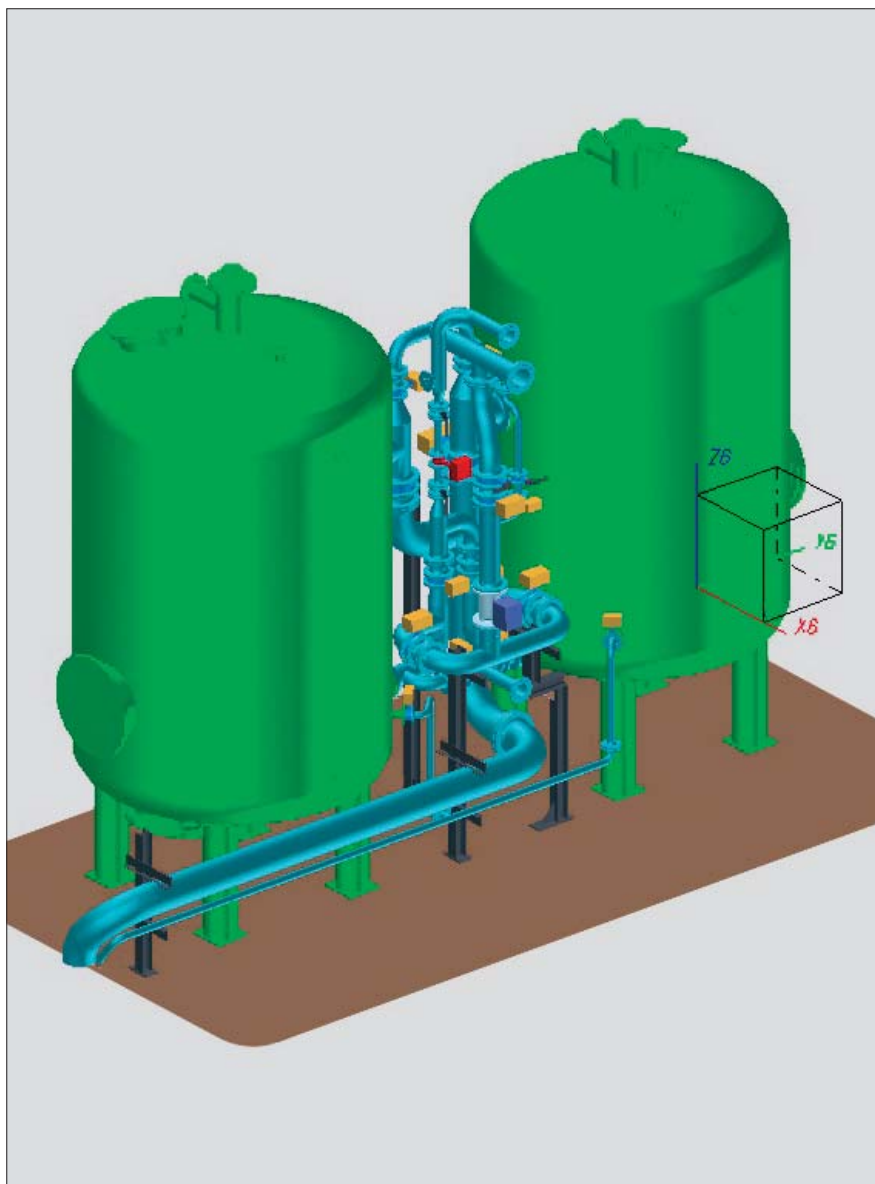
## Remediation site

During cooling, part of the cooling water evaporates causing the accumulation of suspended particles in the cooling water. In order to reduce corrosion in the pipes, the suspended particles have to be removed before the water is returned to the cooling circulation.

## Results

For the purification of the cooling water, two filters were installed having a diameter of 2.4 m and a height of 4 m and containing a volume of 15 m<sup>3</sup> each. The filters are made of steel. Inside, they are covered with a protective layer against corrosion. The filter layer consists of sand of a grain size of 0.7 - 1.2 mm. Gravel is used as distributor layer beneath.

Into the filter bottom filter cartridges are inserted which provide for the steady discharge of the treated water as well as the even distribution of washing air and backwashing water. The pressure filter uses pressures of up to 6 bar.



The filtration stage was integrated into the existing cooling and washing water system. The fully automated washing is controlled by a programmable control system.

A programmable control is used to fully automate the backwashing process. Backwashing starts as soon as the pressure difference at the filter falls below a certain value. The backwashing

interval depends on the intensity and the type of backwashing. A combination of air and water backwashing has proved itself the best method.

<b>Client:</b>	InfraServ GmbH & Co. Hoechst KG Frankfurt-Hoechst
<b>Scope of Works:</b>	Installation of a filter for cooling water treatment
<b>Contract Period:</b>	September 2003 - July 2004

