

Supply and Operation of a Groundwater Treatment Plant on a Disposal Site in Barsbuettel/Germany



BAUERUmweltgruppe

Client:	Wirtschafts- und Aufbaugesellschaft Stormarn GmbH, Germany
Engineering Design:	BBI Ingenieurgesellschaft, Hamburg Heinrich Umweltschutztechnik, Hamburg
Supervision:	URS Germany, Lübeck
Scope of Works:	Supply and Operation of a Plant for the Treatment of contaminated Groundwater
Contract Period:	January 2004 until September 2012



Project

On a site in the municipality Barsbuettel building debris, domestic waste and industrial waste were deposited from 1958 to 1968. Underneath the landfill body the first aquifer is contaminated with pollutants mobilised by percolating rain water. Pollutant discharge from the landfill body and further drifting of the pollutants are to be prevented by hydraulic measures in the medium-term. Dewatering of the landfill body by means of a surface sealing and a groundwater treatment system downstream of the landfill body minimise the outflow from the site.

As plant operator the BMU is responsible for the complete operation, including the supply of material and the disposal of the resulting residual substances.



The water is pumped from six extraction wells. Each well is equipped with volumetric flow meter (magnetic inductive), manometer and throttling gates as well as a sampling valve.



The pure water is infiltrated into the natural water regime in four infiltration wells. The individual wells are individually chargeable by pumps. The water flow is controlled by volumetric flow meter, which influences the quantity of water by valves.



The last stage of the water purification consists of two liquid phase activated carbon filters connected in row. The purified water is afterwards infiltrated.

Remediation Site

The surface sealing was simultaneous used for surface shaping and following for the production of a trade property. Today, on the former disposal site the logistic centre of a wholesale dealer is established and in operation. Thus the safeguarding measure has successfully been combined with surface recycling.

Result

The inflow of rain water into the body of the disposal site is clearly reduced by the surface sealing. From the body of the disposal water still percolates into the first aquifer. The quantity will be reduced by the sealing in the course of the years. In order to guarantee, that the pollutants do not spread further with the ground water flow, the contaminated groundwater is collected by a well gallery downstream of the landfill body. The cleaned water is infiltrated into the water regime by infiltration wells.

The groundwater treatment plant has to be able to treat the varying water composition from the individual promotion wells, regarding quantity and concentration. A fully automatic operation with the possibility of remote maintenance is in operation.