

Groundwater Protection and Treatment of a Chrome Hazard on the Premises of the former Wanderer Werke in Chemnitz



BAUERUmweltgruppe

Client: TLG IMMOBILIEN GmbH, Germany

Engineering Design and Supervision: artec Umweltpraxis GmbH, Lößnitz

Scope of Works: Operation of a Mobile Treatment Plant for the Removal of Chromate and Halogenated VOC from the Groundwater

Contract Period: since November 2002



Project

On the historical industrial estate in Chemnitz, the former centre of the Saxony mechanical engineering industry, a treatment plant for chrome and halogenated VOC contaminated groundwater is operated. The goal is it to ensure the groundwater quality downstream off the industrial site with simultaneous removal of the pollutants chrome and halogenated VOC.

Remediation Site

The groundwater remediation is one part of the extensive measures of re-establishment on the estate, in the course of the rehabilitation as a trade area in the inner city.

Result

The chromate removal takes place in several process stages. Chromate reduction is followed by a precipitation and flocculation step as well as sedimentation in a decanter. Afterwards the water runs through gravel as well as an absorber filter, in order to remove the possibly remaining suspended matter and pollutants. The halogenated VOC's are finally removed in liquid phase activated carbon filters. The chrome hydroxide sludge collected in the sediment basin is removed off in regular intervals into a stacking basin and from there led across a chamber filter press were it is thickened.



The plant consists of a chromate reduction, a precipitation and flocculation, a sedimentation and a filtration stage. Treatment of halogenated VOC's is achieved in liquid phase activated carbon filters.



The treatment plant for chrome and halogenated VOC-contaminated groundwater is located in the midst of the revitalised industrial site. The components for the individual process stages are accommodated in the containers.

The plant is operated depending on the amount of groundwater with a capacity between 1.3 and 2.0 m³/h. The hexavalent chrome contents, which had to be removed varied between 20 and 100 mg/l within a year. Within the first two years approximately 1.4 to of hexavalent chrome were removed. The halogenated VOC inflow concentrations are between 0.5 to 2.0 mg/l. Till the end of the year 2004 approximately 45 kg were removed from the groundwater. Substantial data of the plant and the treated water volumes are monitored electronically and noted.