

# Case Study - BOS100® Remediation in a former Industrial Facility in Stockholm

## Project Facts

Contaminated area: 1500 m<sup>2</sup>  
Budget: 10 million DKK  
Product amount:  
BOS100®: 30 ton  
Injection points: approx. 600  
Vertical treatment zone: 4.5 - 10 mbgl

### Ejlskov A/S

- Founded in 1998.
- Number of Employees +20
- Master Installer
- Is one of the leading innovative environmental engineering companies in Scandinavia

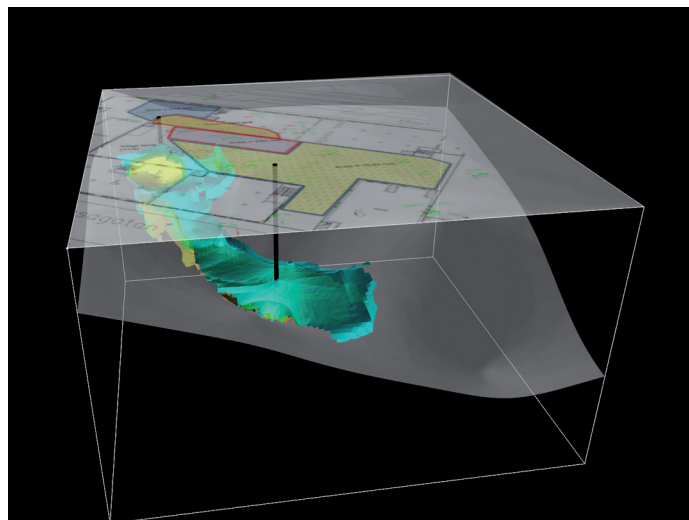
## Intro

From July to December 2011, the BOS 100® technology was implemented to treat groundwater and soil impacted by PCE, TCE and other chlorinated hydrocarbons in a former industrial facility in the northern part of Stockholm. The site has been industrially active since the late 18th century with production of e.g. cables and telephone parts.

The contamination was caused by the extensive use of chlorinated solvents applied for cleaning the manufactured parts.

## The Objective

The objective of the remediation project was to remove all risk for the future use of the property, including indoor climate in the existing buildings, which are transformed into offices, apartments and a library.



Detailed 3D-model of the contamination

## Detailed Site Characterization

The preliminary site characterization was done by using dynamic approach MIP-screening of the chlorinated solvents combined with 3D-modelling. The result was in a very detailed delineation of the CVOC-plume and the bedrock surface which acted as the lower boundary of the CVOC-plume.

The 3D model showed a CVOC-plume covering a total area of approximately 1,500 square meters. In the source area concentrations up to 150 ppm of TCE was detected. The characterization of the bedrock surface was important for designing the injection program as it turned out the bedrock contour indicated a narrow but deep depression directly under the building.

The injection program was designed using the 3D information of the CVOC-plume extent and the surface of the bedrock. The final design was a grid of more than 600 injection points for installation of 30 ton of BOS 100®

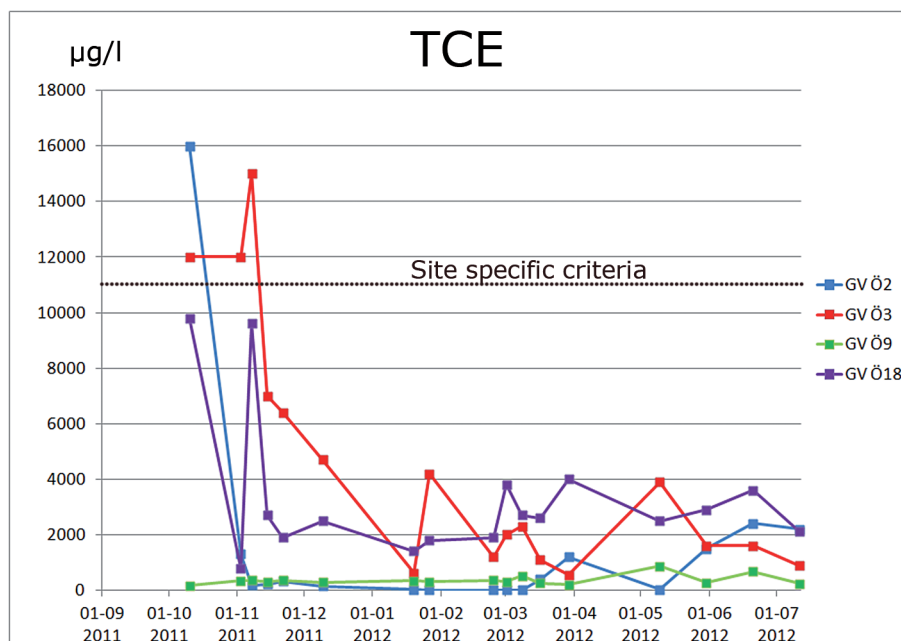
## BOS 100® - the "Trap & Treat®" method

BOS 100® is a proprietary technology which utilizes an injectate consisting of activated carbon impregnated with zero valent iron which is applied to a chlorinated VOC (CVOC) plume or source area. The carbon-based injectate treats dissolved chlorinated solvents in-situ. The injectate consists of an activated carbon catalyst (a very strong adsorbent) impregnated with nano scale reactive iron.

Contaminants are trapped by the carbon and thus co-located in concentrated form with the reactive iron. The CVOC's are effectively treated by reductive dechlorination as a result of direct contact with the iron. The advantage of the carbon based process is that the adsorptive carbon carrier captures or traps the initial contaminant and retains the degradation daughter products until complete reductive dechlorination by the reactive iron occurs, thus protecting groundwater quality throughout the clean-up cycle.

## Results

Monitoring of on site wells after the injections has indicated a general and fast decrease in CVOC. Especially the driving parameters, PCE, TCE and VC. Only one well still contains concentrations above the site specific criteria.



Ejlskov A/S offers a wide range of environmental services concerning:

- Advanced Site characterization
- In-situ remediation
- Building and Construction environmental services
- Geoprobe Drilling
- Environmental Due Diligence
- Environmental Assets Management (EAM)

## Further Information

For further information about in-situ remediation or our other services please contact:

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