

In Situ Groundwater Treatment of Pentachlorophenol (PCP), Sweden

Chemical Oxidation and Enhanced Reductive Dechlorination



With RGS 90 (photography by Martin Olson, RGS 90)

Summary

Pentachlorophenol (PCP) was used to prevent mould in sawed timber at a saw mill in Hjortsberga, central Sweden. Over time, the use of PCP resulted in the groundwater within the saturated unconsolidated aquifer under the site becoming contaminated. It was determined that remedial measures should be taken.

Treatment

The contamination was concentrated in two hotspots of around 10,000 µg/L PCP and a much larger plume of around 1,000 µg/L or less. Two injection rounds of RegenOx were applied in the hotspot areas in order to provide rapid mass reduction of the contamination. This will be followed by a single application of 3D Microemulsion in order to enhance the anaerobic biological degradation of the contamination in order to reach low target concentrations.

What's Special?

Remediation of this highly toxic contaminant was completed without requiring any soil or groundwater to be brought to the surface, ensuring the treatment was completed safely. The in situ nature of the remediation also kept site disturbance to a minimum.

Remediation Details

Site Type:

Industrial Site

Remediation Driver:

Regulatory Compliance

Remediation Approach:

ISCO and ERD

Remediation Technologies:

RegenOx® and
3-D Microemulsion®

Geology

	Bedrock
	Gravel
X	Sand
X	Silt
	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petro HCs
	Petro LNAPL
X	Chlorinated VOCs
	Metals

COC Concentration Levels:

10,000 µg/L

Treatment Depth: 1m - 4m
BGL

Treatment Area: 1,255 m²

Injection points:

35 RegenOx
(No. of 3DMe points TBC)