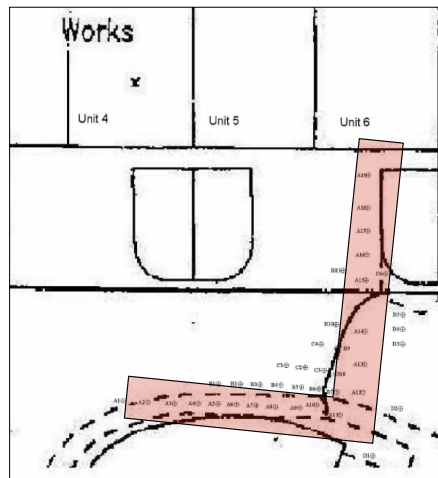


Hexavalent Chromium Barrier Treatment – West Yorkshire, UK

MRC® Barrier Protects River from Hexavalent Chromium Plume



Remediation Details

Site Type:

Commercial (Council Owned)

Project Driver:

Protect Off-site Waters

Remediation Approach:

Product Treatment Barrier

Technologies:

MRC®

Summary

On an industrial estate in Ravensthorpe, West Yorkshire, a leak from a storage tank in a chrome-plating works, had resulted in contamination of the underlying groundwater. The contamination was found to be migrating off-site, under neighbouring properties, towards a nearby river. RegenesiS was employed to design and install a barrier to protect the river for a guaranteed 12 months in order to allow the building to be cleared of other tenants prior to demolition and source removal.

Design & Application

Metals Remediation Compound (MRC) was used to immobilise the contamination by reducing soluble hexavalent chromium into solid, non-hazardous trivalent chromium, which settled out of the groundwater. The MRC was injected in an 'L' shaped barrier through the apron and road outside of the industrial unit. The corner of the 'L' consisted of three rows of direct push injection locations, in order to provide a wide treatment zone where maximum contaminant influx would occur. The MRC was applied using direct push injection in gravels, from the top of the groundwater at 5 m BGL to 12 m BGL (rock-head).

What's Special?

- Within weeks of application, the barrier prevented the movement of hexavalent chromium contamination towards the river. Concentrations of 10,000 µg/L Cr(VI) were reduced by >98% to <200 µg/L 5m downgradient of the barrier and non-detect at the river.
- RegenesiS provided a warranty on the barrier for a period of 12 months after the application, however the MRC barrier would remain effective between 2 to 3 years.
- The controlled-release mechanism of MRC meant that offsite receptors were protected for an extended period from a single, low-cost injection.

Geology

	Bedrock
X	Gravel
	Sand
	Silt
	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petro HCs
	Petro LNAPL
	Chlorinated VOCs
X	Metals

COC Concentration Levels:

maximum of 10,000 µg/L

Treatment Level:

5 m BGL - 12 m BGL

Injection Points:

40

Cost:

£105K including warranty