

In Situ Bioremediation of a PCE Plume, Antwerp, Belgium

One Week's Site Work Provides Five Years of Treatment



Summary

- Regenesis were approached by Redevco and Royal HaskoningDHV to provide an in-situ remedial solution for a site impacted by chlorinated solvents originating from a former dry cleaner facility;
- There was a regulatory requirement for remediation, but Redevco, the site owner, volunteered to actively remediate the pollution instead of the less active approach officially required;
- This 1,600m² chlorinated solvent plume had concentrations up to 20,000 µg/L PCE within the sandy aquifer;
- Regenesis provided a solution consisting of six 3-D Microemulsion (3-D Me) barriers installed across the site using our in-house application service (RRS).

Treatment

Regenesis Remediation Services (RRS) successfully applied over 35,000 L of 3-D Me across 6 barriers without negatively impacting the ongoing commercial operations. 5 of these 6 barriers were located within the car park of the retail complex, with the final barrier located under the canopy of the supermarket. The injection works were completed in 7 days with no recorded health and safety incidents. This single injection of 3-D Me will provide ongoing treatment for up to 5 years, steadily releasing hydrogen into the dissolved phase, fostering an anaerobic environment promoting enhanced, complete, biodegradation of the chlorinated solvents in situ.

What's Special?

- Utilising Regenesis in situ technologies can provide 5 years of treatment following a single week of field activity, with no ongoing site presence required;
- Application of 3-D Me via direct push injection does not have to disrupt on site activities; and
- By using RRS, you can be assured that the application of our reagents are done as per our specification, providing surety of results.

Remediation Details

Site Type:

Supermarket/Retail Park

Project Driver:

Regulatory Requirement and Redevco's Pro-active Approach

Remediation Approach:

Enhanced Reductive Dechlorination

Technologies:

3-D Microemulsion®

Geology

	Bedrock
	Gravel
X	Sand
	Silt
	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petro HCs
	Petro LNAPL
X	Chlorinated VOCs
	Metals

COC Concentration Levels:

20,000 µg/l

Injection Depth:

3.5m - 8.5m

Treatment Area:

1,600m²

Number of Barriers:

6

Injection Points:

27