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West Midlands Regional Group

Bioremediation of DNAPL

A Case Study of Enhanced Reductive Dechlorination Under an Active Dry Cleaning Facility. NW England

Winner of Best In Situ Remedial Treatment & Best Project Closure / Verification Process
Brownfield Briefing Awards 2013

George Flower

Environmental Technical Director, Hyder Consulting

This case study demonstrates how enhanced reductive dechlorination using high-strength, slow-release diffusible proprietary substrates was used successfully to remediate Dense Non-Aqueous Phase Liquid (DNAPL) and dissolved phase contamination in clays and sand lenses to a depth of 10mBGL under an active industrial dry cleaning facility contaminated with tetrachloroethene (PCE).

Prior to treatment, the contamination showed little sign of natural biological attenuation and a costly and disruptive excavation strategy was being considered. Hyder Consulting showed that remedial objectives could be achieved by a targeted *in situ* remedial approach and used a high quality dedicated micro-purge sampling system to establish reliable contaminant concentration information before and during the remediation programme, that allowed confidence in the results.

The treatment reduced the contaminant concentrations from very high levels to meet low dissolved phase targets from a single injection, gaining regulatory 'closure' and client satisfaction at a fraction of the cost of excavation and without disturbing site activities.

Tuesday 11th November at 18:30

(Tea and Coffee available from 18:00)

The Lapworth Museum of Geology
The University of Birmingham. B15 2TT

George has over 25 years experience of geosciences applied to engineering, redevelopment and regulatory enforcement. George is responsible for the technical direction and delivery of projects, client liaison, inter-discipline liaison and technical management in the UK.

His technical knowledge of contamination, hydrogeology and geotechnical engineering skills enables him to lead project workouts and client meetings, and integrate legislation with physical constraints and socio-economic factors, to the benefit of all stakeholders.

He has expert knowledge of site conceptualisation, groundwater monitoring, human health and groundwater risk assessments and applies the outputs from risk assessment tools including CLEA, Consim and the EA's RTM worksheet model to inform remedial options and deliver balanced risk reduction and mitigation.