In situ management of heterogeneous brownfield soils: a case study of an urban ecology park

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Abstracts:
Challenges and progress with managing contaminants in an urban remnant restoration are described in the context of creating an urban ecology park in Warrington, NW England. A restoration project is integrating the economic regeneration and remediation of a 5 ha former industrial site that also includes an old-style closed landfill and a derelict canal. The site is being converted into a green corridor and demonstration site for remediation techniques, with recreational access. No materials have been exported from the site, but recyclable wastes have been imported to stabilize pollutants and for grassland, scrub and canal-side habitat improvement. The challenge for the research component of the project was to understand the mobility and sustainable management of metals and arsenic in soils, both from hotspots on land and from disturbed canal sediment, and in the context of human, groundwater and ecological receptors. The dredged canal sediment presented a complex system within which to confidently manage contaminants in the medium- to long-term. The relative costs and benefit of *in situ* remediation and simply relying on natural attenuation are discussed. Regulatory authorities provided the biggest risk of 'show stoppage'. However, the *in situ* remediation effort has diverted more than 10,000 t of contaminated waste from landfill. This has justified funding of the research project, monitoring and study of the longer-term sustainability of the site restoration. This paper focuses on research associated with the site investigation and tackling the contamination issues, with a focus on soil quality and management.

Keywords: Contamination, Urban Soil, Brownfield
Topic: C. Urban soils and ecosystem services
Sub-topic: C7. Ecological assessment of urban soil quality
Presentation type: *unpresented*

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