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Soil and groundwater remediation sustainability appraisal: The SuRF-UK framework and its use in a European regulatory context

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SuRF-UK, the United Kingdom's Sustainable Remediation Forum (www.claire.co.uk/surfuk), is a multi-stakeholder initiative to develop a framework for evaluating sustainable remediation, which involves incorporating sustainable development principles in remediation decision-making. Created in 2007 it has involvement and support from industry, service providers, government agencies and academia.

SuRF-UK takes its definition of sustainable development from 'the Brundtland report' which describes sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". This is commonly applied as those actions that, taking account of environmental, social and economic considerations, optimise the overall benefit to society.

It has long been assumed that contaminated land risk management was by its nature intrinsically sustainable because, for example, it controlled risks from pollutants and facilitated the re-use of brownfield land so reducing greenfield development pressures. However over the past decade it has increasingly been recognised that this simple assumption may not always be true. The "sustainable remediation" debate centres on how to find a reasonable balance between undertaking risk management and the unintended effects of the environment, society and the economy that remediation can cause. SuRF UK has developed a framework to allow balanced decision making in the selection of a sustainable remediation strategy to address land contamination. This paper describes the SuRF-UK framework.

SuRF-UK has defined "sustainable remediation" as 'the practice of demonstrating, in terms of environmental, economic and social indicators, that the benefit of undertaking remediation is greater than its impact and that the optimum remediation solution is selected through the use of a balanced decision-making process'.
A number of key decisions impact on contaminated land management for a particular site, and the sustainability of decisions can be assessed and optimised at each point:
• High level decision making for policy and regional spatial planning by national government / regional agencies;
• Local level land-use planning and policy – by local authorities;
• Project based decision making that sets remedial objectives (e.g. related to risk management / development needs) for land owners and developers; and,
• Remedy selection and implementation including monitoring and verification implications.

Within each tier, SuRF-UK recommends a tiered approach to assessing the sustainability of different options, from a simple conversation between interested parties to reliance on fully quantitative cost-benefit, or life-cycle analysis. A broad and holistic set of initial indicators is suggested that can be readily limited to those that are influential to a particular management decision. The indicators cover the range of environmental, social and economic factors that are critical to an assessment of the sustainability of remediation policies, strategies, technique selection, and technical performance optimisation.

This paper will describe the framework and show how it applies to existing regulatory processes in the UK, which requires remediation to be 'reasonable' and that the costs and benefits are considered.