

# clean up

Contaminated Land News

July 2011

## INTRODUCTION

The Government has put the concept of localism central to its policy for planning and it is expected that it will reduce the amount of supporting technical guidance such as the Planning Policy Statements. The intention is that this will ease the process in respect of the development of land. However, the investigation and remediation of contaminated sites can be complex and having a suitable framework at its core is essential to regulators, developers, land owners and their technical advisors. Guidance is not issued to replace professional judgement but to assist in the decision making process.

Much new guidance is not ground breaking often building on existing procedures and protocols. Occasionally guidance will become a key reference document although more often than not it is those documents citing specific reference criteria or reports issued by authoritative bodies such as Defra or the Environment Agency that fall within this category.

Central to technical guidance for the investigation of contaminated land is the British Standard document. This document has been updated recently and although it will not lead to a radical change in the investigation of sites it will be at the core of best practice.

## STANDARD INVESTIGATION

Over the last few decades the industry's approach to site investigation has become more defined and with this a whole range of guidance covering policy, procedural frameworks and technical procedures has been published.

The roots of the British Standard for the investigation of contaminated land lie in the document DD175 the first draft by the British Standards Institution providing guidance on how to assess contaminated land and the procedures for investigation. This was formalised by BS10175 issued in 2001. However given the implementation of the Contaminated Land Regulations and supported by the publication of guidance documents such as CLR11 'Model Procedures for the Management of Land Contamination' and the Contaminated Land Exposure assessment (CLEA) model together with other publications such as Planning Policy Statement No 23, the former British Standard document was always going to lag behind best practice and procedures being applied in the sector. A new version of BS10175 'Investigation of potentially contaminated site – Code of Practice' has been published and fits alongside guidance such as CLR11.

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New BS10175 -  
Investigation of potential  
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Technical advisers on environmental issues

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The extent and range of guidance documents associated with the assessment of sites including investigation, sampling, testing, classification, health and safety, policy and regulation that have been published in recent years is demonstrated by the fact that BS10175 makes reference to over 100 other publications of which 69 are other British or international standards.

The approach to site assessment set out in the document recognises that there are various roles in undertaking site investigation and that those performing these roles need to be suitably experienced and qualified. However, whilst there are various standards set out for drilling contractors and a need to demonstrate competence through British Drilling Association and Construction Skills Certification Schemes there are no mandatory qualifications or registration for professional practitioners although the importance of BS10175 lies in setting out the standards that regulators and land owners can refer to and expect from their technical advisors.

Further details are available from the British Standards web-site [www.bsigroup.com](http://www.bsigroup.com).

## REMEDICATION IN THE UK



Defra has commissioned a number of reports looking at the current state of the contaminated land sector in the UK, the first report which has been produced by [CL:AIRE](#) has now been published. This report provides an overview of the remediation technologies, their application and associated costs.

The report presents an overview of twelve in situ and eight ex situ remediation techniques including a description of each technique, the typically expected timescales for their application, suitability to the type of contaminants and ground conditions and the advantages and limitations of each technique. It includes a review of the sustainability issues, costs and the current status of the use of particular remediation techniques in the UK.

Sustainability indicators are taken from the SuRF-UK framework document which covers environmental, social and economic impacts. Each selected remediation technology is assessed qualitatively against the derived 'definition criteria' which include impacts to air, water, soil, ecology, resource and waste, safety and project risk. For example, the pros and cons for each remediation technology are identified such as the potential to produce greenhouse gases, to cause changes in flood risk, energy use and even aesthetic impacts.

The document includes a cost assessment of each remediation technique taken from a range of sources published within the last 10 years and supported with information from a number of the UK's remediation practitioners. Remediation costs are a very site specific issue that is influenced not only by the ground conditions and types of contaminants, but strongly influenced by the remedial target criteria which in turn affect the duration period of treatment and ultimately the costs.

A range of costs associated with each remediation technology is provided for every cubic metre of treated material above and below a threshold of 5000m<sup>3</sup>. The variability in the maximum and minimum costs for each technology is significant which limits the usefulness of the data, however, a cost for the minimum and maximum median is also provided which is presented as a narrower range. The most expensive remediation option identified was for the disposal of contaminated soil to landfill with the median cost maximum value at £250/m<sup>3</sup>. With landfill tax relief no longer available and the landfill tax rate currently set at £48 per tonne and therefore approximately £100 per m<sup>3</sup> it is hardly surprising that the 'dig and dump' as a viable approach to the remediation of contaminated land has come to an end. Other costly technologies include ex situ thermal treatment and in situ stabilisation. Unsurprisingly monitored natural attenuation was the least expensive remedial technology with a maximum cost at £15/m<sup>3</sup>. The lowest costs for active remedial techniques were for ex situ biological and venting technologies.

The final chapter of the report reviews the current status and further opportunities for remediation technologies. The survey identified that the use of in situ technologies has grown over the last 5 years and the outlook is for further growth in this area. It is acknowledged that the recent economic downturn has particularly affected the construction sector which tends to favour ex-situ based technologies and that this may be a key factor for in-situ technologies representing a greater

percentage of the overall recent remediation projects. The research also reviewed emerging and potential remediation techniques. Many of these technologies are under development with a number of collaborative research and development projects between industry, universities and remediation practitioners.

The successful delivery of a remediation scheme lies in risk based strategies delivering sustainable cost effective solutions. MJCA has worked on a variety of technically challenging projects. The Company is well respected for the advice that it offers to clients. For example we are the technical advisors on a project associated with the largest known contaminant plume in the UK that has migrated in a principal aquifer over several kilometres. This requires appropriate site assessment and characterisation, feasibility studies and development of remedial options. As part of the project management it is necessary for us to interact with a range of stakeholders including site owners, regulatory authorities, academics, third parties and their technical advisors.

## FLAT CAP!



The Yorkshire and Humberside Pollution Advisory Council (YHPAC) has produced the document [Verification Guidance for Cover Systems](#) which has been adopted as guidance by many local authorities in the region and wider afield. The document has been produced to help developers ensure that they can demonstrate that materials brought onto a development site for the use in gardens or areas of soft landscaping are suitable for use and do not present the potential for harm to people, the environment and/or property.

The verification of cover systems should be an integral part of the remediation project and agreed between developers and regulators at an early stage in the project with specific goals set that are linked directly to the risk management strategy for the site and supported by the provision of defensible measurements, observations and records. Aspects of the works which need to be agreed within the remediation strategy include the required depth of cover and the need for a physical no-dig layer, capillary break layer and demarcation layer.

The source of material can originate from on-site (site won) which is a more sustainable practice or off-site source including from other Brownfield sites providing that they are suitable for the intended end use of the site and consistent with relevant regulations and codes of practice. The guidance highlights that if it is necessary to treat materials in order that they are suitable for use this is essentially a remediation activity which needs an agreed strategy with the regulator prior to the site works commencing and such activities are undertaken in accordance with relevant regulations or codes of practice.

The Local Authority will require documented characterisation of materials and defensible verification reporting. Testing prior to import to site or placement should be undertaken and there is a cautionary note in the guidance regarding the use of commercial suppliers providing certificates that are not more than 2 months old and the topsoil should be to British Standard criteria. A visual inspection by an environmental engineer is recommended together with chemical testing. Appendix 1 of the guidance provides recommendations for the frequency of testing of various materials. For example only one or two samples are necessary from virgin quarry materials but as many as one sample per 100m<sup>3</sup> is necessary if the material is derived from Brownfield sites. It is important that the thickness of the capping layer is verified and recorded and that the preferred type of method for testing the depth and the number of verification areas per property, plot, landscaped area or garden area is agreed with the Local Authority. There should be photographic evidence and example of photographs are appended to the guidance.

There are checklists for the testing of the materials to be used and for the contents of the verification report. The guidance states that the reporting should be carried out by a suitably qualified Environmental Engineer. The guidance is a good reminder to developers, their advisors and contractors together with regulators that this aspect which is often the last phase of the works in the overall development should not be neglected.

## WHAT A WASTE!

The process for the exemption of activities from Waste Management Licensing which has been in place for 17 years recently has changed. The prioritising of recovery rather than disposal has led to a need to change the regulation of waste management as development activities move to a more sustainable future. The Environment Agency (EA) has updated the Environmental Permitting guidance notes and issued new application procedures. The changes include updates on transferring a permit, details on surrendering a permit and details on applying for new permits. These changes have been put in place to meet the new regulations which came in to force in April 2010 and affect everyone who currently carries out exempt waste operations or who intends to in the future.



There are occasions when a permit will not be necessary although many of these exemptions still need to be registered with the EA so that they are aware that the activities are taking place. For example the activities that may be exempt from permitting include using crushed bricks, concrete and aggregate to create a noise bund and bringing soil on to a development site for landscaping although the materials used should not present a risk to human health or cause harm to the environment.

However, these activities do not address the bulk of materials that are generated and handled during large scale construction projects and it is highly likely that for most developments a standard permit will be necessary which come with a set of fixed rules for common activities which must be adhered to.

The recovery or use of waste on land for most contaminated land sites will be addressed through remediation technologies under the application of a mobile plant licence for the treatment of contaminated material, substances or products and controlled waters. These have been in existence for over 10 years and cover the most commonly applied remediation technologies. However, where there is no need for the treatment of soils it may be possible to deal with the materials under a standard permit. For example where waste materials are suitable for the treatment of land that has been previously subject to industrial or other man-made development for the purpose of reclamation, restoration or improvement by the spreading of waste or for construction. The activity has to meet the standard rules and criteria such as the site being used only for the purposes of sorting, separation, screening, crushing and blending of waste for recovery as a soil, soil substitute or aggregate, limited to no more than 100,000 tonnes and not be undertaken within a specified distance of watercourses, water supplies and registered habitats and it will also be necessary to control emissions such as odour and noise. The EA has provided a risk assessment document to develop the risk criteria for these activities to produce the standard rules. If it is not possible to comply with any of the standard rules and criteria then it is necessary to apply for a bespoke permit.


The introduction of these permits replaces the former exemptions for example paragraph 19a which was often applied on development sites where excavated materials were used for construction activity, although for most development activity there is a more pragmatic approach to dealing with materials generated on site through the implementation of a material management plan as set out in the Definition of Waste: Development Industry Code of Practice Version 2. This voluntary code is now being used widely and MJCA has already assisted clients in a number of projects preparing Materials Management Plans and the submission of declarations under the Qualified Person system and to date this involves more than 1,000,000m<sup>3</sup> of material. Further details about the Code of Practice can be found in our [February newsletter](#) on our web-site.

## CONTACT US

Please contact [Kevin Eaton](#) for more information on any of the issues raised in this newsletter, or on any other Contaminated Land issues.

## ABOUT MJCA

MJCA provides independent advice on environmental issues to the public and private sectors. Delivering our services to high technical standards and commercial awareness enable us to provide practical, cost effective advice and sustainable solutions. Further information regarding our services can be found on our website [www.mjca.co.uk](http://www.mjca.co.uk)

 The logo for MJCA, consisting of the letters 'MJCA' in a bold, sans-serif font. The 'J' and 'C' are dark grey, while the 'M' and 'A' are light grey. The 'C' is stylized with a white negative space.	Baddesley Colliery Offices, Main Road, Baxterley, Atherstone, Warwickshire, CV9 2LE Telephone: 01827 717891 <a href="http://www.mjca.co.uk">www.mjca.co.uk</a>
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