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Contaminated Land News—Introduction

The new Statutory Guidance of Part 2A of the Environment Protection Act 1990 published in early April 2012 includes guidance on recognising and dealing with the uncertainty associated with contaminated land through the key principles of risk assessment by implementing a category based system which is intended to lead to a more consistent approach to the technical process for determining contaminated land.

Defra have now commissioned a research project that will develop a methodology for the risk assessment to determine Category 4 Screening Levels (C4SL). These will be the new criteria for assessing contaminated soil. When considering the risks associated with contaminated land it is necessary to understand what the normal background concentration of contaminants in soil may be. Defra has published

the output of a research project carried out by the British Geological Survey (BGS) which has produced data on a range of normal background concentrations for a range of contaminants.

In the new Statutory Guidance it is recognised that to assist in making decisions as to whether a site is contaminated land or not, the Local Authority may need further guidance and support. To address this Defra has established a National Panel of Experts to advise on cases where there is uncertainty.

It will take a period of time for these changes to bed in and it is likely to be a least a year before the C4SL methodology is published and individual case studies of contaminated land decisions are released although these studies should provide greater clarity for those dealing with contaminated land.

Contaminated land Part 2A - National Panel of Experts

Defra is facilitating the establishment of a National Panel of Experts to offer advice to Local Authority Contaminated Land Officers and to assist in the decision-making process on implementing the new [Statutory Guidance](#) of Part 2A of the Environmental Protection Act 1990. The Panel will consist of selected individuals from the contaminated land sector.

The new Statutory Guidance sets out a legal framework for taking decisions on whether land qualifies as contaminated land in the form of a category based test whereby Category 1 sites are clearly contaminated and represent a high risk and Category 4 sites are clearly identifiable as low risk and not contaminated land. It is envisaged that Local Authorities will be able to ask the Panel to provide advice and guidance about Category 2 and 3 sites where the proc-

ess is less straightforward.

In such circumstances a greater level of assessment is necessary and detailed consideration is needed before deciding whether the site meets the legal definition of contaminated land as set out in the revised Statutory Guidance (Category 2 site) or not (Category 3 site). The Panel will evaluate all the relevant information from individual cases submitted to them and advise the regulator with due regard to the overarching objectives of the Part 2A regime.

It is Defra's intention that the outputs of the work of the Panel will be used to develop case studies that will then be disseminated to the wider sector as evidence of best practice and will promote consistency and proportionality in decision-making by the regulatory authorities.

Waste not, want not!



“The Cluster site concept involves one Hub site to act as a centre of activity for treating contaminated soils and/or the processing of other wastes and materials....”

The Definition of Waste: Development Industry Code of Practice (CoP) is a voluntary code which has been operating successfully for the last few years. It provides a pragmatic solution to the use of excavated materials including contaminated soils and made ground on development sites in a sustainable manner. Reference to the CoP is made in the recently published guidance entitled [“Guidance on the legal definition of waste and its application”](#) dated August 2012 published by Defra in conjunction with the Welsh Government, the Department of the Environment in Northern Ireland, the Environment Agency and the Northern Ireland Environment Agency. These government departments and agencies considered that there is a need to provide further clarification to business regarding the definition of waste, which is defined in the 2008 Waste Framework Directive (Directive 2008/98/EC) as *“...any substance or object which the holder discards or intends or is required to discard...”*. The recognition in the guidance of the use of the CoP, specifically with reference to the ‘Principles for the use of Materials as Non-Waste’ strengthens further the use of the CoP by industry. The Defra guidance cites a generic example where *“...a construction activity may generate large amounts of excavated unpolluted natural soil. If the holder has no use for the soil then it may present a disposal problem that has to be addressed by the soil’s classification as waste. However, if that soil is suitable for use without any treatment and is certain to be used for that purpose, it may be classified as a non-waste product, i.e. on the basis that it satisfies the by-products legal test....”* and this is one of the areas where the CoP can be applied.

In continuing to develop the use of the CoP, CL:AIRE published the [‘Cluster Guide’](#) in June 2012 clarifying the approach for the CoP for Cluster sites after trialling a number of pilot Cluster projects. The approach to Cluster projects is to apply a method for remediating and/or developing a group of sites that are relatively close to each other and that would be either uneconomic to develop on their own or that represent an opportunity to act in a more sus-

tainable manner. Cluster projects have three guiding principles in that they are:

- Temporary – operate only as long as the sites defined within the Cluster are being remediated / developed
- Local – demonstrably appropriate in terms of geographical distance, relative savings, practical issues etc. for each of the participating sites and
- A more sustainable way of developing land

The Cluster site concept involves one Hub site to act as a centre of activity for treating contaminated soils through ex-situ process based technologies and/or the processing of other wastes and materials. Connected through the activity of development and remediation are a number of sites local to the Hub site. These sites are referred to as ‘donor sites’ which are sites that supply materials to the Hub site and ‘receiver sites’ which are sites that accept materials from the Hub site. Sites can be both donor and receiver as the materials can be reused at any one of the sites within the defined Cluster for development purposes e.g. engineered backfill and / or other specified purposes, including the Hub site itself.

Whilst Cluster projects have the potential to benefit a range of development activities there is a number of planning and waste related issues which need to be considered. Where contaminated sites are developed there are often associated conditions of a planning permission for the remediation of the site and where treatment activities are carried out an Environmental Permit is necessary for the mobile plant technologies which are deployed. In some circumstances there may be a need for planning permission to reuse the treated materials. If there is movement of waste between sites it will be necessary to ensure Duty of Care procedures are applied where the material remains a waste and there may be the need to register the producer’s premises if hazardous waste is removed.

For Cluster site there are of course all the other lines of evidence which are necessary under the

Waste not, want not!

CoP, for example the preparation of a Material Management Plan and for contaminated soil that represents a risk to human health or the environment, the need for a Remediation Strategy and associated risk assessment which has been agreed with the relevant regulatory authorities.

The approach to Cluster sites for the development of land makes sense environmentally, socially and economically. In one of the case studies monitored by CL:AIRE the reduction in CO₂

emissions, haulage distances travelled and the fuel used were in the order of an 80% reduction when compared to disposal and import options for waste and materials.

The financial savings of a Cluster site approach when considering landfill disposal as the alternative are highly significant.

Definition of waste - CoP in action

MJCA have recently completed the design, specification and supervision of the placement of a low hydraulic conductivity clay cap at a former landfill at Hithermoor Quarry in Surrey. Site works began in July 2011, with the construction of the 120,000m² clay cap, together with the placement of overlying protection restoration soils, and was completed in mid 2012. Throughout the works MJCA were on site to verify that the works were undertaken in accordance with the Specification and Construction Quality Assurance Plan agreed with the Environment Agency prior to the works commencing.

The material used in the construction of the clay cap and the restoration of the site comprised London Clay from excavations carried out as part of the construction of Terminal 2B at nearby Heathrow Airport. In total over 300,000m³ of material from Heathrow has been used in the capping of Hithermoor and was delivered to site at a rate of up to 400 wagons per day. Use of the excavated material from the Heathrow site as a construction material at Hithermoor was confirmed by MJCA under the Definition of Waste CoP.

On completion of the restoration of the site it is anticipated that approximately 400,000m³ of material that may otherwise have been defined as waste will have been used to cap and restore the former landfill at Hithermoor.

MJCA has been involved with a number of projects where the Definition of Waste CoP has been applied. In the last 2 years MJCA dealt with over 500,000m³ of material under the Definition of Waste CoP, preparing Material Management Plans supported by quantitative risk assessment and remedial method statements where necessary, including submissions of the declaration by a Qualified Person. Our experience of the waste and contaminated land sector means that we are well placed to advise on these matters.

“...In the last 2 years MJCA dealt with over 500,000m³ of material under the Definition of Waste CoP...”



C4SL



The project to develop the Category 4 Screening Levels (C4SL) for Assessment of Land Affected by Contamination was awarded recently to Contaminated Land: Applications in Real Environments (CL:AIRE) who have assembled a Steering Group consisting a number of members of the Society of Brownfield Risk Assessment (SoBRA) committee, representatives from the Food and Environment Research Agency (FERA) an executive agency of Defra and a contaminated land officer from a Local Authority.

A revision to the [Statutory Guidance](#) of Part 2A of the Environmental Protection Act 1990 was published earlier this year and it introduced a new category based system for dealing with risk assessment including the assessment of the 'significant possibility of significant harm' (SPOSH) whereby Category 1 sites are clearly contaminated land and represent a high risk and Category 4 sites are clearly identifiable as low risk and not contaminated land.

DEFRA has commissioned CL:AIRE to produce, demonstrate and communicate a methodology for developing C4SL. The C4SL will represent a new set of risk based generic screening levels which it is understood will consist of 'cautious estimates' of contaminant concentrations in soil that are considered to present an acceptable level of risk, within the context of Part 2A.

The C4SL will be developed by combining information on toxicology, exposure assessment and considering normal levels of exposure to these contaminants. A science and research study was published recently by the Defra which pro-

vides information on the normal background concentrations (NBC) of seven contaminants in soils (arsenic, cadmium, copper, mercury, lead, nickel and benzo(a)pyrene). Initially the C4SL project will include a review of six substances and a C4SL will be developed for two of these substances. Whilst these substances have not as yet been selected perhaps they may reflect the contaminants assessed in the NBC project.

The boundary between Category 2 and 3 is referenced in the [Impact Assessment](#) which accompanies the Statutory Guidance as being the "...likely *de facto* minimum standard chosen by developers..." and for sites which fall between these two categories it will be necessary to carry out a site specific assessment of the risks.

It is possible that when the C4SL are published these will become the default soil assessment criteria for the decisions made regarding land development issues should the developer wish to take a precautionary approach. Therefore it is crucial that the methodology for C4SL is robust and pragmatic and CL:AIRE have stated that "...Considerable efforts will be made to gather opinions and achieve consensus on a final methodology from the contaminated land practitioner community..."

CL:AIRE has organised a series of three workshops the first of which will be carried out in November 2012 to engage with stakeholders in the sector and to gather opinion on the methodology and options, the choice of the six substances for the review and the two substances for which C4SL will be developed.

"...Considerable efforts will be made to gather opinions and achieve consensus on a final methodology from the contaminated land practitioner community..."



Asbestos in soil

The Association of Geotechnical & Geoenvironmental Specialist (AGS) has published an interim guidance report entitled "Site Investigation Asbestos Risk Assessment for the protection of Site Investigation and Geotechnical Laboratory Personnel" dated September 2012. It is stated that the guidance is provided "...to assess the potential for human health exposure risks to occur to those who may be involved directly or indirectly with the investigation process." AGS has prepared this guidance in the absence of specific government advice with regard to asbestos in soils and it provides a useful tool for those organisations involved with intrusive site investigation when preparing their health and safety procedures.

The guidance covers the planning of the site investigation, basic principles regarding safe exposure limits and PPE, a framework for a qualitative risk assessment including the types of ground conditions in which asbestos may be found, procedures for field work where suspected asbestos is encountered and issues associated with soil laboratory testing.

It is stated in the guidance document that "It has been clarified that the CAR2012 regulations apply also to the land included in the premises and not just to any buildings or structures present". Under these regulations the duty holder has a legal responsibility to carry out an asbestos assessment and where asbestos is identified to prepare an Asbestos Management Plan although it is considered this would only be necessary where there is an unacceptable risk of asbestos exposure to employees or the general public. It may be that where an intrusive site investigation is carried out the information may provide the only opportunity to obtain this information and for the duty holder to address their responsibility under these regulations.

It is not uncommon to find asbestos containing materials in made ground on brownfield sites particularly in buried demolition waste and most organisations carrying out site investigation will have appropriate health and safety procedures in place when asbestos containing materials are suspected or observed on site. However not all forms of asbestos can be observed in the field for

example they may be present as free fibres in the soil matrix which can be observed only under laboratory conditions.

Free fibres of asbestos can be identified by appropriate laboratory testing. Analytical laboratories apply typically internal procedures based on HSG248 Asbestos: The Analysts guide for sampling, analysis and clearance procedures. The Health and Safety Laboratory (HSL) who provide support to the Health and Safety Executive (HSE) are overseeing the Asbestos In Materials Scheme (AIMS) the aim of which is to assess the performance of laboratories carrying out the identification of asbestos in bulk materials and with the intention of revising HSG248.

A recent study by Alcontrol Laboratories found that less than 30% of soil samples submitted to their laboratories were scheduled for asbestos screening or identification testing. In circumstances where ALcontrol suspected that samples could potentially contain asbestos but had not been scheduled for asbestos screening the samples were analysed and in 20% of cases found to contain asbestos. Based on these statistics it is apparent that good judgement is needed in the field when selecting samples which may contain asbestos and further guidance and suitable training may be necessary for those in the sector involved with these issues.

In November 2011 the EIC and CL:AIRE joined forces to set up the Asbestos in Soil, Made Ground and Construction Materials – Joint Industry Working Group (Asbestos in Soil JIWG). Also in 2011 CIRIA commissioned a project to prepare guidance on managing and understanding the risks of asbestos in soil and on brownfield sites. Recognising the need for cooperation within industry the Asbestos in Soil JIWG will be working alongside the CIRIA research project. CL:AIRE also intend to publish an industry Code of Practice – Practitioners Guide, drawing upon the services of practitioners from across the sector who have specific practical experience and expertise in a variety of key areas relating to the management of asbestos working collaboratively to develop this guidance.



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Technical advisers on
environmental 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 enables 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

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.

What is normal background contamination?

The publication '[Establishing data on background levels of contamination](#)' prepared by the BGS on behalf of Defra provides another piece of the technical jigsaw to support the new Statutory Guidance. The intention of this research is that by understanding normal background data of the geochemistry of soil which varies across the country, this will help to more clearly define soils that are not contaminated and provide a greater understanding the potential risk to human health and further clarity to the contaminated land regime.

The BGS has assessed data relating to six metals (arsenic, cadmium, copper, mercury, lead, nickel) together with benzo (a) pyrene drawing upon datasets compiled from a range of other studies including The Geochemical Baseline Survey of the Environment ([G-BASE](#)). The study looked at the spatial

variability and population distributions by identifying the three most important contributing factors affecting the concentration of the contaminants in soil as: the underlying parent material upon which the soil has formed; non-ferrous metalliferous mineralisation and associated mining activity; and urbanisation. A methodology was developed by the BGS to assess the statistical distributions of the concentrations of contaminants for different domains, for example considering anthropogenic sources in an Urban Domain, geogenic sources in a Mineralisation Domain, and a Principal Domain where elevated concentrations are not expected. The methodology is set out in a separate document published as part of the study. A Normal Background Concentration (NBC) for each contaminant in each domain type has been produced by applying statistical methods taking the upper 95%

confidence limit of the 95th percentile.

The process for assessing each contaminant is first to consider which of the domains the site is likely to be in and if the concentration of the contaminant is at or below the NBC for the specified domain then "*...the result should not be considered to cause the land to qualify as contaminated land, unless there is a particular reason to consider otherwise...*". If there is no reason 'to consider otherwise' then the decision can be made that there is no evidence that the land is contaminated under Part 2A. If the results are above the NBC or there are other reasons to consider, further assessment will be necessary, for example additional site investigation and chemical testing of soil and if necessary a quantitative risk assessment.

