A GUIDE TO GUIDANCE

A Guide to Guidance on Land Remediation

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This article aims to provide a guide to the latest guidance on contaminated-land remediation. Such guidance is issued by a number of organisations, government departments and agencies and can take varying forms. When using the guidance, a view needs to be taken as to its relevance, how current it is, and what weight should be placed on it. Anyone using the guidance referred to should bear in mind that it may be revised, replaced, or removed at any time. The usual caveats therefore apply: that this article should not be relied upon as providing a complete guide to all relevant guidance and it is only up to date as at the time of writing in mid-March 2008.

The main organisations responsible for issuing guidance related to land remediation are DEFRA and the Environment Agency. Others though have also published relevant guidance, including CL:AIRE (Contaminated Land: Applications in Real Environments), the Health Protection Agency, English Partnerships, and HMRC on landfill tax credits. This article cannot cover every piece of relevant guidance out there. Rather than try, therefore, it aims to highlight the most relevant and highest profile.

The regulation of contaminated-land remediation is closely allied to waste regulation. The volume of guidance in both these areas demonstrates how complex they are, and most particularly at the overlap between waste regulation and the development and remediation of contaminated land. Just sometimes though, there is a gap in the guidance that everyone is crying out to be filled. One such area is Soil Guideline Values, where the Environment Agency and Health Protection Agency appear intractably locked into differing views on what is acceptable risk, and no one in central government appears willing to mediate. I sincerely hope that by the time this article is published, or at least by the time you are all putting your copies of the *Yearbook* into the recycling in anticipation of the 2009 edition, the wait will be over. In the meantime though, I have not sought to pre-empt the resolution of that particular debate. I make no apologies therefore for not considering SGVs in this article.

PART IIA CONTAMINATED LAND REGIME

The most well-known guidance on contaminated-land issues is Defra's *Circular 01/2006, Environmental Protection Act 1990: Part 2A Contaminated Land* published in September 2006. This replaced *Circular 02/2000* when the regime was extended to include land contaminated by radioactive substances. Although the regime has been something of a damp squib in terms of the number of remediation notices that have been served and the amount of land it has caused to be cleaned up, it remains the first consideration for many who are involved with land remediation or transactions involving (potentially) contaminated land.

It is worth reminding ourselves of the definition of contaminated land under the regime before looking at the guidance. Section 78A(2) of the Environmental Protection Act 1990 (EPA90) defines it as:

"…any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land" that:-

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or **(b)** pollution of controlled waters is being, or is likely to be, caused.

We are still awaiting the formal amendment of **(b)** to "significant pollution of controlled waters is being *caused or there is a significant possibility of such pollution being caused*", although in practice the Environment Agency appears to be working to the new definition already.

The section continues, and this is where the guidance comes in:

"…in determining whether any land appears to be such land, a local authority shall, subject to subsection (5) below, act in accordance with guidance issued by the Secretary of State… with respect to the manner in which that determination is to be made."

Only Annex 3 to the Circular is Statutory Guidance. It provides guidance on the following:

- the definition of Contaminated Land (Chapter A);
- the identification of Contaminated Land (Chapter B);
- the remediation of Contaminated Land (Chapter C);
- exclusion from and apportionment of liability for remediation (Chapter D); and
- the recovery of the costs of remediation (Chapter E).

The remainder of the Circular is non-statutory, although a material consideration in any determination under the regime.

The Circular explains that land is only contaminated within the meaning of Part IIA when three factors co-exist:

- a source of pollutant must be present in the ground or groundwater;
- a pathway must exist which may transport the pollutant;
- the pathway must lead to a recognised receptor.

Not all land containing contaminants therefore is "contaminated land" under the Part IIA regime. In particular, the guidance is of assistance in determining what kind of harm can cause land to be subject to the Part IIA regime as well as what will constitute a potential "receptor". In addition, the guidance provides explanation as to how significant that harm must be for the land to be defined as "contaminated" under the regime. It sets quite a **cont..**

A GUIDE TO GUIDANCE

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high threshold before land will fall under the regime. The types of relevant receptor and the degree of harm or potential harm required for land to be defined under the regime is set out in Table A of Chapter A of the Annex 3 guidance.

The devil, as ever, is in the detail and nothing can replace actually reading the Circular first hand. The Circular can be downloaded at: http://www.defra.gov.uk/environment/land/contaminated/pubs.htm

BEYOND PART IIA

It would be a mistake to believe that, having studied the Part IIA regime legislation and familiarised yourself with the guidance, that is all there is with regard to contaminated-land liabilities. As has been mentioned above, land which is not "contaminated land" within the meaning of the Part IIA EPA90 regime, may still contain "contamination" which may, for example, affect the value of the land or the uses for which it can be developed without introducing a relevant receptor and bringing it into the Part IIA arena.

ENVIRONMENTAL PERMITTING

From 6 April 2008, all Waste Management Licences and Pollution Prevention and Control (PPC) permits will automatically convert to become "Environmental Permits", under the Environmental Permitting (England and Wales) Regulations 2007 (EPR). This includes Mobile Treatment Licences (MTLs). Holders of MTLs do not have to do anything for them to convert into Environmental Permits on 6 April.

A whole host of guidance has been issued to support the EPR for anyone wishing to apply for Environment Permits from 6 April. All the guidance is available at http://www.defra.gov.uk/environment/epp/guidance.htm

The Core Guidance is clear that where the regulator and operator are the same, a single Environmental Permit can be granted for more than one mobile plant. Mobile plant do not have to be operating on the same site in order to be included in a single permit. This is expressly stated to allow a continuation of the Mobile Treatment Licence approach, on which see the Environment Agency's website at www.environmentagency.gov.uk/business/444304/444641/595811/1335408/

Guidance on Part A mobile plant can be found in the Environmental Permitting Guidance document on *The IPPC Directive: Part A(1) Installations and Part A(1) Mobile Plant*.

Guidance on Part B mobile plant can be found in the *General Guidance Manual on Policy and Procedures for A2 and B Installations*.

At the time of writing, the result of the consultation on standard permits was still outstanding, having closed in December 2007. Readers are encouraged to check the DEFRA and Environment Agency websites regularly throughout the year as further guidance and consultations are anticipated in relation to the Environmental Permitting Programme.

SITE INVESTIGATION, RISK ASSESSMENT, RISK MANAGEMENT AND REMEDIATION

Now for the practical stuff. It seems fairly obvious to state that site investigation is necessary before the risks from any potential land contamination can be fully assessed. It is surprising the number of would-be landowners that want chapter and verse on what the risks are without conducting full and proper site investigations.

There are various technical guidance notes published by the Environment Agency providing assistance to those involved in carrying out investigations relating to potentially contaminated land.

Of particular interest to developers and landowners dealing with the remediation of land will be the *Model Procedures for the Management of Land Contamination (CLR 11)*, which provides a framework for applying a risk-management process when dealing with land affected by contamination, as well as technical detail and information to assist with the risk-management process. This guidance incorporates existing good practice, which includes using risk-assessment techniques in order to make decisions and take action to deal with contamination. The technical approach in the *Model Procedures* is designed to apply to regulatory and non-regulatory contexts, including:

1. the development or redevelopment of land under the planning regime;
2. regulatory intervention under Part IIA of the EPA;
3. voluntary investigation and remediation;

4. managing potential liabilities of those responsible for sites.

CLR11 identifies verification as a key part of the risk-management process and the Environment Agency has recently produced a draft report on the *Verification of Remediation of Land Contamination*. The draft report provides guidance on designing and implementing a verification scheme and outlines the importance of planning verification along with remediation. The consultation period has now expired and the full report should be available soon. In the meantime, the draft is available at **http://www.environmentagency.gov.uk/commondata/acrobat/verification_draft_1684128.pdf**

Other relevant guidance for site investigation include:

- Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies;
- Technical Aspects of Site Investigation in relation to Land Contamination: Vol. 1. R&D Technical Report P5-065/TR. EA 2000;
- Technical Aspects of Site Investigation in relation to Land Contamination: Vol. 2. Text Supplements. R&D Technical Report P5-065TR. EA 2000;
- Information on land quality in England: sources of information including background contaminants. EA 2002;
- Information on Land Quality in Wales: sources of information including background contaminations. EA 2002;
- Defra Contaminated Land Publications Page. DoE Industry Profiles;
- British Standards Institution - Investigation of potentially contaminated sites, Code of Practice, BS:10175. 2001.

Links to all of these can be found at **http://www.environmentagency.gov.uk/subjects/landquality/113813/887579/1103420/?version=1&lang=_e**

As far as risk assessment is concerned, the Environment Agency and other bodies have produced the following guidance, links to all of which are available at **http://www.environment-agency.gov.uk/subjects/landquality/113813/887579/1103623/?version=1&lang=_e:**

- Model Procedures for the management of land contamination;
- Assessment and management of risks to buildings, building materials and services from land contamination. EA 2000;
- Understanding the public perception of risk: report of an Environment Agency workshop. EA 2000;
- Land Contamination risk assessment tools: an evaluation of some commonly used methods. EA 2000;
- Communicating understanding of contaminated land risks (SNIFFER 1999).

Much of the guidance in relation to remediation of contaminated land relates to the treatment of specific types of contamination. The following relevant guidance can be accessed via **http://www.environmentagency.gov.uk/subjects/landquality/113813/887579/1103693/?version=1&lang=_e:**

- Guidance on the use of stabilisation/solidification for the treatment of contaminated soil, solid waste and sludges. EA 2004;
- Review of scientific literature on the use of stabilisation/solidification for the treatment of contaminated soil, solid waste and sludges. EA 2004;
- Bioremediation and economic renewal of industrially degraded land by biomass fuel crops. BIORENEW 2004;
- Source treatment of dense Non-aqueous Phase Liquids. EA 2002;
- Workshop report: Added Environmental Value - A tool to help understand the effects of remediation of land contamination within the context of sustainable development. EA 2000;
- A summary of the UK's participation in the CLARINET and the NATO/CCMS Pilot Study during 1998 and 1999. EA 1999;
- Remediation of toxic metal pollution in soil using bone meal. Technical Report P234. EA 2000;
- Assessing the wider environmental value of remediation land contamination: a review. R&D Technical Report P238. EA 2000;
- Mobilising Nature's Armoury: Monitored Natural Attenuation - dealing with pollution using natural processes. EA 2004;
- R&D 95. Guidance on the assessment and monitoring of natural attenuation of contaminants in groundwater. EA 2000;
- Guidance on the design, construction, operation and monitoring of permeable reactive barriers. Report NC/01/51. EA 2002.

REGULATION AROUND THE DEFINITION OF WASTE

In April 2006 the Environment Agency published guidance to assist those involved in construction and redevelopment works to determine whether they are handling waste and, if so, their legal obligations. The guidance in *The Definition of Waste: developing greenfield and brownfield sites* aims to set out the regulatory requirements when handling excavated soils and construction waste. The guidance is available at: **http://www.environmentagency.gov.uk/business/444304/502508/1357364/?lang=_e**

Disappointingly, two years after this guidance was first published, the caveats to sections 2E and 3 have still not been removed. Work is ongoing on this, now jointly with CL:AIRE and the participation of industry.

Detailed guidance on this guidance has been given elsewhere and in previous articles appearing in the *Land Remediation Yearbook*. Given the constraints of space, I make no apology therefore for not going into further detail on this here.

SITE WASTE MANAGEMENT PLANS

New to the land-remediation and regeneration scene, at least in terms of regulatory requirement, in 2008 are the Site Waste Management Plan Regulations 2008 due to come into force on 6 April 2008. These regulations require any construction project in England costing over £300,000 to produce a Site Waste Management Plan (SWMP). A construction project in this context includes new builds, alterations and the installation or removal of services such as sewerage and water; and the "cost" is the price in the accepted tender or, if there is no tender, the cost of labour, plant and materials, overheads and profit. Failure to produce a SWMP before construction work begins renders both the client and principal contractor guilty of an offence. The Regulations will not apply to projects planned before 6 April 2008 as long as the construction work begins before 1 July 2008.

The Environment Agency has provided guidance in relation to the requirements: *Site Waste – It's criminal: a simple guide to Site Waste Management Plans*, available at: **http://www.environmentagency.gov.uk/business/444304/502508/1952646/**

Meanwhile, DEFRA has conducted what it calls an Informal Consultation on the draft Non-Statutory Guidance on SWMPs, the formal version of which we hope should be published during the life of this Yearbook.

CONTAMINATED LAND ADVICE NOTES

A guide to guidance on land remediation wouldn't be complete without a mention of the CLANs published by DEFRA. These Contaminated Land Advice Notes can all be downloaded from: **www.defra.gov.uk/environment/land/contaminated/pubs.htm#clan107**

- CLAN 1/02: Withdrawal of ICRCL Guidance Note 59/83 (2ND Edition);
- CLAN 2/02: Contaminated Land Supplementary Credit Approvals 2003-04;
- CLAN 3/02: Withdrawal of ICRCL Trigger Values;
- CLAN 1/03: An introduction to CLARINET;
- CLAN 1/04: 2004/05 Capital Programme Guidance Note;
- CLAN 2/04: Defra questionnaire on progress with land contamination - summer 2003;
- CLAN 3/04: Section 86 of the Water Act 2003;
- CLAN 4/04: Contamination of Agricultural Land & Part IIA of the EPA 1990;
- CLAN 5/04: Ground waters & section 86 of the Water Act;
- CLAN 6/04: Update on the Soil Guideline Values Taskforce;
- CLAN 1/05: 2005/06 Capital Programme

A GUIDE TO GUIDANCE

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Guidance Note;
- CLAN 2/05: New advice on SGVs;
- CLAN 1/06: 2006/07 Capital Programme Guidance Note;
- CLAN 2/06 Best Value Performance Indicators (BVPI) Q&A;
- CLAN 3/06: Soil Guideline Values Taskforce;
- CLAN 4/06: Defra update on SGVs;
- CLAN 5/06: Extension of Part 2A to radioactivity;
- CLAN 6/06: Soil Guideline Values: the Way Forward;
- CLAN 1/07: Extension of Part 2A to radioactivity (CLAN 5/06) – further update.

OTHER GUIDANCE

As has been stated, there is far more guidance out there than can be dealt with in a single article. Briefly, other relevant guidance includes the following: English Partnerships has recently published a best practice note on brownfield site remediation costs. This, along with other relevant publications, is available at: http://www.englishpartnerships.co.uk/publications.htm#contamination

CL:AIRE guidance bulletins describe good practice as it applies to the characterisation, monitoring or remediation of contaminated soil or groundwater. Its guidance bulletin "GB 1", for example, provides a summary of the Environment Agency's *Guidance on the use of Stabilisation/Solidification for the Treatment of Contaminated Soil* published in 2004.

VARIOUS BRITISH STANDARDS

British Standards have been produced for investigation, analysis and reporting including:
- BS 10175:2001 Investigation of potentially contaminated sites – Code of practice;
- BS 5930 Code of practice for site investigation;
- ISO standards for analysis and sampling(such as 13530, 10381 series 1-4, 14507, 1689, etc).

Construction Industry Research and Information Association has produced various industry best-practice guidance including:

- Volumes I-XII relating to site investigation and remediation;
- Reports 130-131 and 149-152 relating to landfill gas issues;
- SP124 Barriers Liners and Cover Systems.

Building Research Establishment has also produced a number of reports and guidance notes, including:
- BRE Report BRE291 - Bibliography of Case Studies on Contaminated land: investigation, remediation and redevelopment;
- BRE Report BRE255 - Performance of Building Materials on in Contaminated Land;
- BRE Information Paper - IP2/87.

Health and Safety Executive has issued various publications relating to health and safety and contaminated land.

Health Protection Agency has recently published Contaminated Land Clarification Note No.1 on Benzo[a]pyrene – Use of Excess Lifetime Cancer Risk Estimates. At the time of writing, it was not yet available on their website but copies may be obtained from the HPA. Further Clarification Notes are expected in due course.

A NOTE OF CAUTION

As stated previously, guidance relating to contaminated land and land remediation is continually under development. The above list is by no means exhaustive and anyone looking to remediate contaminated land should ensure that they are familiar with what is out there, or obtain professional advice and assistance.

AND FINALLY

I said I wouldn't mention Soil Guideline Values, but I just can't help it! What makes land remediation so challenging is, despite all the above guidance, there is no definitive guidance on what is acceptable risk when it comes to "clean up". At the time of writing, the way forward on The Way Forward is anyone's guess. Let's hope we are not left guessing for too long.

CASE STUDY

Stabilisation works at Luggie Glen

Soilutions Ltd was appointed for the remediation of five former sludge-digestion tanks located at a former sewage-treatment plant at Luggie Glen to be developed as a business park. Funding for the project was provided by both client North Lanarkshire Council and Strathclyde European Partnership through the ERDF Objective 2 Fund. The consultant and project manager for the £740k project was Jacobs, and the clean-up took 23 weeks.

THE PROBLEM

The works were decommissioned in the 1970s. It is thought that during the closure process, demolition material from the site's operational buildings was placed into five digester tanks in an attempt to backfill them. The tanks measured 12.2m in diameter and were 9m deep. The top three tanks, which were the most easily accessible, had double walls with a cavity void of unknown size. The lower two tanks were less accessible, but with limited storage and working space.

The five tanks contained approximately 4,700cu m of typical sewage sludge, with elevated concentrations of hydrocarbons, zinc and organic contamination, as well as high quantities of bonded asbestos.

THE SOLUTION

This presence of asbestos prevented the material from simply being land farmed or disposed of to a sewage-treatment works and the high levels of organics would normally prohibit the material from being disposed of to landfill. Some lateral thinking was required to find the Best Environmental Technique.

SEPA granted approval of a risk-based approach based on disposal of the organically rich material into a discrete asbestos cell providing it was treated sufficiently to transform it from a liquid to a solid state.

The solidification process involved placing a known volume of material into an emptied tank together with known amounts of cementitious binding agents. The material was mixed together and moved into adjacent storage bunds to allow for the hydration process. Once solidified to the strength agreed with the landfill site, the material was disposed of.

In total, 4,300t of sludge were processed and disposed of to landfill. Some 780t of cementitious binding agent were used and 8,000t of material were used for backfilling the empty tanks.

THE FUTURE OF THE SITE

The site has been remediated in support of a major regeneration programme by Fusion Assets, a joint-venture company formed by North Lanarkshire Council and Scottish Enterprise Lanarkshire, to transform the 1.2ha site into a new Drumpelier Business Park, with a range of owner-occupied office space and mixed commercial development.