

Advice Note

Investigation of Potentially Contaminated Sites

The Role of the Environmental Health Service

When considering an application for a development on a potentially contaminated site the Environmental Health Service seeks to ensure that:

- an assessment is made to determine whether the condition of the site is such that it may be considered contaminated in the context of current legislation: *Environmental Protection Act 1990: Part IIA Contaminated Land*. This legislation recognises that change of use of a site may introduce a greater risk of harm being caused from contaminants present within the site.
- the advice in *PAN33: Development of Contaminated Land* is followed.
- Site Investigation is carried out in accordance with *BS10175: 2001 Investigation of Potentially Contaminated Sites – Code of Practice* and within the framework detailed in: *CLR11 'Model Procedures for the Management of Land Contamination'*, Environment Agency 2004.
- where the possibility of harm arising from contamination is identified, the site is suitably remediated using agreed procedures before development is carried out. A suitable strategy will include a post-remedial validation to verify that the risks posed by the contamination have been reduced to an acceptable level.

It will be a requirement, prior to recommendation that Planning Permission is granted, that the Environmental Health Service is satisfied that any issues relating to potential or actual contamination of a site have been adequately assessed and, if necessary, that a course of action to remediate and to verify the remediation of the site has been agreed.

The Legislation

Whilst it is not possible to summarise the Contaminated Land Legislation and the accompanying Statutory Guidance (Scottish Executive Circular 1/2000), it is useful to note the following points.

For land to be determined as contaminated in law there must exist a source of contaminant, in on or under the land, and a pathway by which that contaminant may adversely affect a receptor. Where a contaminant, a pathway and a receptor are all present then a risk assessment is required to determine the likelihood of harm to the receptor. Only where the possibility of harm exists can the site be required to be remediated such that that the risk of harm is reduced to an acceptable level. By providing a framework for the assessment and remediation of potentially contaminated sites the legislation seeks to return to use land which has been contaminated historically and, where possible, for the costs incurred to be born by those responsible for the contamination.

The planning process provides an opportunity for assessment of potentially contaminated sites and a means whereby the costs of investigation and remediation can be recovered through the increased value of the land.

Site Investigation

Site Investigations are phased studies. Each part of the investigation determines the next and by this method the amount of work and expenditure is minimised.

The first phase is the *Preliminary Investigation*, which includes a desk study and site reconnaissance. This investigation seeks to assess the likelihood of finding contamination, its nature and extent; determines the environmental setting of the site and identifies sensitive receptors together with an evaluation of any likely pathways of contaminant to receptors; determines the requirement (if any) for further site investigation; and identifies any special precautions or procedures that will be necessary during subsequent sampling and evaluation of the site.

The Preliminary Investigation should gather information relating to:

- the location of the site, surroundings and topography.
- full history of the usage of the site with particular emphasis on potentially contaminative uses.
- identification of likely contaminants and their dispersal.
- identification of likely receptors, for instance: current and intended users; ground water, surface water or the nearshore marine environment; ecological sites; buildings; crops and livestock.
- details of geology, hydrology and hydrogeology.
- site ecology and archaeology.

The findings of the Preliminary Investigation should be brought together in a report. The report should provide a detailed account of the information gathered, outline a conceptual model of the site, make a preliminary risk assessment and determine whether further investigation is required.

The Preliminary Investigation may determine that no further assessment is needed or it may indicate that intrusive work on the site will be required. Intrusive work typically involves the collection of soil samples for analysis of likely contaminants and may include the collection and analysis of ground and surface water samples and soil gas. This further stage of the site investigation is designed to refine or support the initial conceptual model of the site, to assess with greater certainty the risks posed by the site and to design, where necessary, a remediation strategy.

All methods of site investigation need to be carefully researched and implemented. Reassessing a site that has been inadequately investigated can result in much higher costs than rigorously following accepted procedures in the first instance. For greater detail of the methods and strategies for site investigation you are referred to *British Standards 10175:2001 Investigation of potentially contaminated sites – Code of practice*.

For further advice please contact David Cooper or Anne Coles at Gordon House Inverurie (tel 01467 628298).

Advice Note

Determination of Hydrocarbons in Soil Samples from Potentially Contaminated Sites

This note is advisory not mandatory

In order to determine whether there is likely to be a risk to site users from hydrocarbons within soils you are advised to consider determination of the following specific hydrocarbons at least in some of the samples collected¹:

Aliphatic Hydrocarbons

EC² 5-6
EC >6-8
EC >8-10
EC >10-12
EC >12-16
EC >16-35

Aromatic Hydrocarbons

EC >8-10
EC >10-12
EC >12-16
EC >16-21
EC >21-35

Hydrocarbon Compounds

Benzene, Toluene, Ethylbenzene, Xylene

Individual Polycyclic Aromatic Hydrocarbons (PAH) as appropriate

¹ with justification some hydrocarbon fractions or compounds may be omitted from the analysis

² EC: equivalent carbon number