

Guidance on Contaminated Land

Assessment Work for

Submission to Norfolk Local Authorities

1. Introduction and Background

This guidance is aimed at developers and their consultants who have been appointed to carry out a site investigation for submission to the Local Planning Authority (LPA) as part of the planning process. The guidance aims to highlight the key criteria required by the LPA in order to ensure that the potential risks from contaminated land are taken into consideration during the development.

Since 1 April 2000 local councils have been inspecting their areas under the Contaminated Land Regulations. These regulations require all local authorities to produce a strategy outlining how they will inspect their area for contaminated land. These strategies are available from the local authorities and the contact details of the Norfolk local authorities are given in the 'useful information' section at the end.

In addition to the Contaminated Land Regulations the other primary method of dealing with potentially contaminated land is the planning system. This process looks at whether a site is suitable for its intended use. The Government is supporting an increase in the reuse of brownfield land to try and reduce the use of greenfield land for developments. To that end contaminated land and suitability for use have become active considerations of the planning process as laid out in [Planning Policy Statement 23 \(PPS 23\)](#) and [The Building Regulations 2000, Approved Document C \(2004 Edition\)](#).

2. The LPA Decision Making Process

All LPAs operate by a clear and transparent decision-making process [as laid out in CLR11 'Model Procedures for the Management of Land Contamination'](#). This will allow all stakeholders to be able to see how the LPA has reached its decision on a site. The adoption of this approach by all parties in the planning process will allow current and future stakeholders to be able to see the information that has been used in evaluating the site's condition and its suitability for its intended use.

In all cases the LPA will want as much information as possible about the site condition. This will provide a better understanding of the site, and allow a clear decision making route to be drawn from the initial desk study through the investigation and remediation to the post remediation testing stage.

If a site is identified as potentially contaminated the LPA has two main methods for requiring an appraisal of the site:

- Before a decision is made on the planning application.
- Under a condition that is added to the planning permission.

Alternatively the LPA may decide to add an informative to the planning permission. Informatives are used where a condition is not thought to be appropriate. They are intended to notify the applicant that there may be a risk to the development from the possible presence of contamination on, or close to, the site. In all cases, where work is required to assess the potential risk from contamination the LPA will need to approve the proposed method before the work begins.

3. What is required

For the scheme to fulfil the requirements of the LPA and fully assess the condition of the site it must be both factual and interpretative. The scheme should detail as much about the site as possible. There are four key stages to assessing the site:

1. A desk study
2. A detailed site investigation
3. Remediation; and,
4. Post remediation validation testing

All stages are required as part of a full site investigation and remediation programme. In some cases however, the full process may not be required as the initial desk study and risk assessment may show that there is not a significant risk. Where a detailed investigation is required it must be based on the findings of a comprehensive desk study, initial risk assessment and conceptual site model.

The remediation proposal in turn must be based on the findings of the detailed site investigation report and associated risk assessment modelling and evaluation. Finally the post remediation testing is intended to demonstrate whether the remediation has been successful or if further work is required. Please note that if the work commences without the approval of the LPA further work may be required, which may incur increased costs and a further loss of time.

4. The Desk Study

The desk study should be carried out in line with recognised best practice methods. Examples include 'BS10175' and the Environment Agency, NHBC publication 'Guidance for the safe development of housing on land affected by contamination'. Details of where these publications can be obtained are given in the useful information section. An example of the sort of information that is expected to be included in a desk study, but not restricted to this, is:

- Past, present and proposed land uses.
- Potentially contaminative operations that have been carried out on the site, together with their locations where possible.
- Details of any mineral extraction and land filling that have taken place on the site.
- Environmental setting, geology, hydrogeology, hydrology, environmentally sensitive areas.
- Details of services on the site.
- Details of off site activities that may impact on the site. For example, adjacent land-use and landfill sites.
- Details of a site walk over survey. For example, structures disturbed or discoloured soil, vegetation cover and quality, details of tanks, pipelines and other structures on the site.
- Detailed conceptual site model.
- Detailed risk assessment based on the findings of the desk study.
- Recommendations for further investigation work.

In order for a desk study to be fully risk based, it is essential to identify all pollutant linkages (source-pathway-receptor) for each specific contaminant suspected to be present on the site. This information should be used to produce a conceptual site model. This can be both graphical and tabular and is used to illustrate the possible pollutant linkages present on the site. Only when the desk study, risk assessment and conceptual site model are completed can the appropriate intrusive investigation be carried out. The results of the investigation can be used to produce a comprehensive remediation strategy. Remediation can then be verified by proving that all pollutant linkages have been broken. Unless all pollutant linkages are identified in the first stage, the success of remediation cannot be verified.

5. The Site Investigation

The site investigation must also be carried out with the written approval of the LPA and in accordance with recognised best practice methodology, for example 'Technical aspects of a site investigation' and 'Secondary model procedures for the development of appropriate soil sampling strategies'. An example of the sort of information that is expected to be in a site investigation report, but not restricted to this, is:

- A scale map showing sampling locations.
- Methods of intrusive investigation
- Details of the number of sampling points their locations and the reasoning and rationale behind these decisions.
- Details of guidance used in the selection of the parameters
- Sampling storage, maintenance and copies of the 'chain of sample custody'.
- Field measurements, equipment used and calibration details.
- Details of the laboratory used and what testing methods it has accreditation for.
- Analytes selected and reasoning behind the selection.
- Table of results.
- Borehole and trial pit logs or other logs as appropriate.
- Details of the risk assessment model(s) used and the reason why.
- Revised conceptual site model, results of risk assessment, conclusions and recommendations for further work.

Please note:

- Where sampling of controlled waters is carried out appropriate details of the methodology of sampling should be included. Results of laboratory testing of water samples should follow Environment Agency Document R&D 20.
- Where ground gases are tested the flow rate of the gases and the atmospheric pressure should also be recorded and included in the results.
- The ICRCL guideline values will not be accepted at any stage in a report.
- Where the CLEA method is not available or does not cover the desired pathways other models may be used. Details of the model together with the reasoning and justification behind its selection must be submitted for approval to the council in advance of use. The details should also be included in the report.
- Other generic guideline values such as the Dutch standards may only be used as preliminary assessment guides, where a more suitable risk model is not available.
- Where a CLEA value is available no other guideline value will be accepted.
- If 'in house' values are to be used an explanation of their source and validity will be required.

6. Remediation

This stage is designed to reduce or remove the risks from contamination that have been identified as potentially significant. The remediation proposal must be based on the previously completed site investigation report and the proposed end use of the land. Planning Policy Statement 23 'Planning and Pollution Control' states that the site must be suitable for the intended use. This is the criterion the LPA will be working too. To that end the remediation proposal must show that the contamination linkages identified in the previous investigation will be removed or mitigated against and how this will take place. A revised conceptual site model detailing the pathway(s) between the receptor(s) and the contaminant(s) must also be included. Again reference to best practice methodologies and where possible details of other locations where the proposed method has been successfully adopted should be given. The proposed remediation design must be submitted to the council for written approval before the work may begin.

7. Post Remediation Validation

This final stage is designed to show how successful the remediation strategy has been. The testing should be appropriate to the remediation of the site. For example where remediation has been the addition of a membrane beneath a building, soil testing in the garden area would not be required. Where treatment of the soil, or controlled waters has been carried out or new material has been imported to the site, testing of these media will be required. The method of analysis and sample collection should be the same as used for the site investigation in order to enable a clear comparison of the results and site conditions. In cases where the post remediation testing has highlighted shortcomings in the design, further work will be required to ensure the site is fit for the intended use.

8. Site Investigation and Remedial Proposals

The LPA will require the proposal for each stage of the site assessment to be submitted for approval prior to the work beginning. This approach enables the LPA to consult with other organisations as necessary and ensure that all the issues are considered. If this step is not followed and the investigation is carried out without approval, further investigation work may be required to address issues that have not been appropriately investigated. This may result in increased costs and loss of time. The site investigation methodology must be submitted with the desk study report. The desk study should be the basis for the site investigation and both stages should be carried out in accordance with recognised Best Practice methods (see above and 'useful information' section for details). If a desk study is not submitted the LPA may reject the investigation proposal, because it may not appear to have any basis or relevance to either the previous or proposed use of the site.

Similarly the remediation proposal together with the site investigation report must be submitted prior to the commencement of remediation. The remediation proposal should be based on the findings of the site investigation. Again if it appears that the remediation proposal is not based on the conditions at the site it may be rejected until the matter is clarified. In all cases the written approval for the proposed method must be received from the LPA before the work can begin.

9. LPA Approval

The LPA will require a suitably experienced and qualified consultant to carry out the site work and risk assessment. This will include documentation of all tasks including:

- The site work
- Sampling
- Arrangement of the transfer of the samples to the laboratory
- Remediation work
- Handling and disposal of contaminated or contaminating material
- Validation of imported materials
- Post remediation testing.

The consultant will be responsible for certifying the site assessment and remediation work and for complying with the agreed scheme.

As with any planning condition there needs to be a transparent demonstration of compliance by the developer. The planning file for the site is a publicly accessible document and may be viewed by any interested party. If the site assessment reports on the site do not clearly demonstrate compliance with the condition through a clear decision making pathway, this may create concern over the suitability of the work carried out, which in turn may affect the ability to sell the development.

Failure to demonstrate compliance with the agreed scheme may represent a breach of the planning permission and non-compliance with the planning condition. This could result in additional work having to be undertaken on the site and the possibility of planning enforcement action being taken.

Useful Information

Local Authority contact details:

| Name | Address | Telephone | Web address |
|---|---|-----------------|--|
| Breckland Council | Elizabeth House Walpole Loke Dereham Norfolk NR19 1EE | 01362 695333 | www.breckland.gov.uk |
| Broadland District Council | Thorpe Lodge 1 Yarmouth Road Thorpe St Andrew Norwich NR7 0DU | 01603 431133 | www.broadland.gov.uk |
| Great Yarmouth Borough Council | Town Hall, Great Yarmouth, Norfolk, UK, NR30 2QF | 01493 856100 | www.great-yarmouth.gov.uk |
| Kings Lynn and West Norfolk Borough Council | King's Court, Chapel Street King's Lynn, Norfolk. PE30 1EX | 01553 616200 | www.west-norfolk.gov.uk |
| North Norfolk District Council | Council Offices, Holt Road, Cromer NR27 9EN | 01263 513811 | www.north-norfolk.gov.uk |
| Norwich City Council | City Hall, St. Peter's Street, Norwich NR2 1NH | 01603 622233 | www.norwich.gov.uk |
| South Norfolk District Council | South Norfolk House, Swan Lane, Long Stratton, Norfolk NR15 2XE | 01508 533633 | www.south-norfolk.gov.uk |

Useful organisations:

| Name | Address | Telephone | Web address |
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| Building Research Establishment | BRE, Garston, Watford WD25 9XX | 01923 664000 | www.bre.co.uk |
| CIRIA | Classic House, 174 - 180 Old Street, London EC1V 9BP | 0207 549 3300 | www.ciria.org.uk |
| Department for Environment, Food & Rural Affairs | Nobel House 17 Smith Square London SW1P 3JR | 0207 238 6000 | www.defra.gov.uk |
| Environment Agency | Rio House Waterside Drive Aztec West Almondsbury Bristol BS32 4UD | 08708 506 506 | www.environment-agency.gov.uk |
| Health and safety Executive | HSE Infoline Caerphilly Business Park Caerphilly, CF83 3GG | 08701 545500 | www.hse.gov.uk |
| National House | Buildmark House, | 01494 735363 | www.nhbc.co.uk |

