

Wiltshire Council Contaminated Land Supplementary Planning Document



Wiltshire Council – report log

Status	Author / Checked by	Date
Draft	A Gittins	October 2012
Final draft	S Manning	November 2012
Final draft issued for consultation	S Manning	December 2012

Doc reference no: WC/2012SPDAQ

To discuss the content of this document or for further information please contact either:

- Steven Manning, Environmental Health Officer, Environmental Control & Protection Team North & West, Wiltshire Council, County Hall, Bythesea Road, Trowbridge, Wiltshire, BA14 8JN steven.manning@wiltshire.gov.uk
- Gary Tomsett, Team Manager Environmental Control & Protection South & East Team, Wiltshire Council, Bourne Hill, Salisbury, Wiltshire. SP1 3UZ. Telephone 01722 434340. Email - gary.tomsett@wiltshire.gov.uk
- Rachel Kent, Environmental Health Officer, Environmental Control & Protection Team, Wiltshire Council, Kennet House, Sergeant Rogers Way, Hopton Park Industrial Estate, London Road, Devizes, SN10 2ET. Tel: 01380 826321 Email – rachel.kent@wiltshire.gov.uk
- Peter Nobes, Senior Public Protection Officer, Environmental Control & Protection Team, Wiltshire Council, Kennet House, Sergeant Rogers Way, Hopton Park Industrial Estate, London Road, Devizes, SN10 2ET. Tel: 01380 826320 Email – peter.nobes@Wiltshire.gov.uk

Executive Summary

{cabinet endorsement statement/Director}

DRAFT

Contents

1 Contents

- 1 Contents..... 4
- 1 Introduction..... 5
 - 1.1 Purpose of the Guidance..... 5
 - 1.2 Background..... 7
 - 1.3 Potential impacts of contaminated land 8
 - 1.4 Wiltshire Core Strategy 8
- 2 Contaminated Land Assessments..... 9
 - 2.1 Contaminated Land assessments for planning applications..... 9
 - 2.2 Developments that require a land quality assessment..... 11
 - 2.3 Zoning or Phasing of Sites 14
 - 2.4 Offsite Contamination..... 14
 - 2.5 General principles of Land quality assessments 16
 - 2.5.1 Source 16
 - 2.5.2 Pathway..... 16
 - 2.5.3 Receptor..... 17
 - 2.6 Site Assessment Elements..... 17
 - 2.6.1 Phase 1 Investigation (Desk Study, Walkover and Preliminary Risk Assessment)..... 17
 - 2.6.2 Phase 2 Investigation (Intrusive Investigation or Ground/Site Investigation) 18
 - 2.6.3 Supplementary Investigations 20
 - 2.6.4 Risk Assessment 20
 - 2.6.5 Remediation Scheme..... 21
 - 2.6.6 Site Validation 25
 - 2.7 The extent of an Investigation Required 25
 - 2.8 Reporting the Assessment 29
 - 2.9 Audit trail..... 29
- 4 Planning obligations: S106..... 30

- Figure 1 Pollutant Linkage..... 16
- Figure 2 Determining if a contaminated land assessment is necessary 27
- Figure 3 Process of complying with Contaminated Land Condition..... 28

- Table 1 Factors influencing need for and extent of a land quality assessment..... 12

Table 2 Assessment of investigation findings	19
--	----

1 Introduction

1.1 Purpose of the Guidance

This guidance is aimed at developers, their consultants and officers within the Council. It provides technical advice on how to deal with planning applications on sites that may have been contaminated by a previous use with a view to ensuring consistency in the approach to proposed new development.

The National Planning Policy Framework (March 2012) states:

To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Planning policies and decisions should also ensure that:

- they prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;
- they remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land, where appropriate;
- all sites are suitable for their new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;
- after development, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990;and
- adequate site investigation information, prepared by a competent person, is

presented.

- site investigation information: Includes a risk assessment of land potentially affected by contamination, or ground stability and slope stability reports, as appropriate. All investigations of land potentially affected by contamination should be carried out in accordance with established procedures (such as BS10175 (2011) Code of Practice for the Investigation of Potentially Contaminated Sites, CLR11 Model Procedures for the Management of Contaminated Land 2004). The minimum information that should be provided by an applicant should be a Phase 1 Study (Desk Study & Site Reconnaissance).

Aims of Contaminated Land supplementary planning document:

- Aid in the identification of sites where land contamination is relevant to the proposed development;
- The identification and management of risk from any historic contamination that may be present;
- The provision of a structured approach to the investigation, remediation and validation of development sites where land contamination is a material consideration;
- Consistency in dealing with sites where the legacy of potentially contaminative land use exists or is suspected.

1.2 Background

The legacy of land contamination associated with former industrial uses and its potential to affect human health, controlled waters, ecosystems, buildings and livestock has been the subject of local authority attention for over two decades. Land contamination can also have a range of occupational and socio-economic impacts; consequently numerous standards, guides and codes of practice have been produced by technical bodies and a body of research exists in relation to a diverse range of land contamination subjects.

In the UK contaminated land is identified and tackled by two different regulatory frameworks, these being Part 2A of the Environmental Protection Act 1990 and the Planning regime.

Part 2A was intended to identify land, which is so contaminated that in its current condition it poses a significant possibility of significant harm to the health of persons living on or using the land or controlled waters. In this situation the local authority has to ensure that the land's condition is addressed to control any unacceptable risk.

Wiltshire Council's approach to Part 2A is outlined in the Wiltshire Council Strategy for the identification of contaminated land and is available via the following link.

<http://www.wiltshire.gov.uk/contaminated-land-strategy2010-final-report.pdf>

The second regulatory regime is the Planning system. In this case the developer as part of the planning and redevelopment process must address any land condition matters through investigation, risk assessment and remediation where required. In practice the vast majority of contaminated sites are cleaned up routinely via this route with the local planning authority ensuring that developers produce safe new development.

1.3 Potential impacts of contaminated land

There are a wide range of substances which can be deposited on land from its previous/historical use. Typical contaminants encountered during a redevelopment include metals and metalloids such as lead, mercury, arsenic, copper and zinc, hydrocarbons such as petroleum products, oils, benzene, benzo(a)pyrene and phenol and other substances such as asbestos or poly chlorinated bi phenols.

Many of these substances can potentially have a serious impact on human health, surface and underground waters or on the environment and eco systems in the vicinity, if they are present at elevated levels. Depending on their location, concentration and the proposed use for the site some or all of these substances may be removed from the site or be shown to be located such that exposure is very unlikely and the risks demonstrated to be acceptable.

1.4 Wiltshire Core Strategy

Wiltshire's Core Strategy sets out a framework of policies and strategies for future sustainable residential and economic development across the County.

Wiltshire's commitment to ensuring that redeveloped sites are safe and suitable for their proposed use is demonstrated by the inclusion of core policy 56. See Appendix 1.

2 Contaminated Land Assessments

This chapter provides an advisory framework to assist developers and their agents in determining whether Land Contamination needs to be taken account of in pre-planning application enquiries and submission of planning applications.

Contaminated Land assessments may be required, even in localities which appear relatively unpolluted and undeveloped depending on the proposed land use. Even 'green field' sites may have a hidden history which is only revealed by some sort of investigation.

Wiltshire Council intends that such investigations should be proportionate, realistic and cost effective and so developers are advised to use the checklists provided in the appendices in determining what, if any assessment is needed.

It is recommended that developers seek specific advice from the environmental protection team prior to any formal planning application if land contamination is likely to be an issue.

2.1 Contaminated Land assessments for planning applications

Where contaminated land assessments are required as part of a planning application, guidance is often sought by the applicant as how best to undertake these to the satisfaction of the local authority. This document sets out situations when an assessment may be required and suggests methods for undertaking such an assessment within Wiltshire-

Once a developer has undertaken an assessment this would normally be submitted to the Planning Authority for approval i.e. confirmation that the report demonstrates that presence of contamination identified is such that no risk to occupiers, neighbours of the environment may be caused either during the construction or once occupied; or confirmation that any proposed remediation of land contamination will result in making the land suitable for the intended use. Both of these scenarios would be accompanied by risk assessments which support the view that is being put forward.

In cases where a reasonable risk is established the council may take one of three views:

- 1) Recognising that the level of risk has been demonstrated to be so low that no specific remediation is required and that no specific contaminated land related planning condition is needed for the development proposed.
- 2) Recognising that whilst significant levels of contamination have been identified these can be adequately addressed by a suitable remediation scheme carried out either before or during the development process.
- 3) Recognising that the levels of contamination identified are so significant that it may not be cost effective to remediate to a level satisfactory for the proposed use. As a planning condition must be reasonable and proportionate, in this case a recommendation for refusal may be made to the planning officers.

In assessing sites it is common for both local authorities and developers to apply the basic framework established by part 2A of the Environmental Protection Act 1990. This process was designed to meet the stringent requirements of investigating land that may be so contaminated that it poses a significant risk of significant harm to people or the environment and the principles and methods used to assess the risks posed by the land transfer well to the planning process.

For this reason Wiltshire Council requires a structured assessment to be carried out. Further guidance on the requirements of the Council is given in Appendix 2. It is hoped that this information will cut out 'consultation fatigue' between developers, or their agents, and local authority officers.

Key Point

Land quality Assessment tool kit can be found in Appendix 2.

2.2 Developments that require a land quality assessment

The overall outcome of a land quality assessment is to ensure that the development is likely to be safe for future users / occupiers and that there should also not be any significant health or environmental impact during the development phase.

The decision regarding whether a development requires a land quality assessment or not, may be considered in terms of a number of factors:

- 1) Whether the proposed end use is sensitive to the potential presence of land contamination or the end use includes use by one or more sensitive receptors;
- 2) The likely presence of contamination which may be of significance for the end use;
- 3) Whether there is likely to be a significant impact on one or more off site receptors as a result of the development.

The complexity, extent and detail of the site investigation will vary from site to site. In the case of a 'Greenfield site' proposed for commercial or industrial use little or no investigation may be needed. If however the proposed use on the same 'Greenfield site' is residential or sensitive in any other way e.g. a school or carehome, there will be a minimum requirement for a desk study and qualitative risk assessment on a precautionary basis.

Likewise the minimum of a desk study is strongly advocated by the Council prior to the acquisition or divestment of land so that an assessment of any potentially associated liabilities may be made.

The factors to be considered in assessing the need for a land quality assessment are summarised in table 1.

Table 1 Factors influencing need for and extent of a land quality assessment

Factor	Typical Examples	Comments
<p><u>Receptors affected</u> Does the proposed use include any users or occupiers (also termed receptors) who are high risk or particularly sensitive.</p>	<ul style="list-style-type: none"> a. Residential Housing b. Schools c. Nurseries d. Hospitals e. Children’s Play areas. f. Allotments g. Agricultural land. 	<p>Further guidance on typical receptors is provided by the revised part 2A guidance issued in April 2012. Whilst this guidance is not specific to the planning regime the principles underlying it are sound and provide a definitive UK based frame work for identifying people and other receptors that should be protected. The guidance can be found at the following link.</p> <p>Contaminated Land Statuary Guidance April 2012 http://www.defra.gov.uk/publications/2012/04/10/pb13735contaminated-land/</p>
<p><u>Source of contaminants</u> Does the site (or neighbouring Site) have a history which indicates a likelihood contamination being present and what types and levels of contamination might be expected?</p>	<ul style="list-style-type: none"> a. Chemical production, storage or use. b. Plastics c. Oil or fuel storage d. Gasworks e. Heavy or light Industrial usages f. Agricultural buildings g. Vehicle repairs / Fuel Sales h. Foundry i. Dry Cleaners j. Burial grounds k. Landfill or any form of waste handling / processing l. Scrap yards m. A known spillage or incident resulting in contamination 	<p>In practice there are a wide range of uses that may have resulted in land contamination to some extent; the history of each site has to be considered individually.</p> <p>A number of industry guides providing specific information on a wide range of industries are available from the Environment Agency Website below. These are very useful for identifying the most significant sources of historic contamination and provide a reliable UK sourced reference</p> <p>defra Industry Guides http://www.environment-agency.gov.uk/research/planning/33708.aspx</p>

<p><u>Exposure Pathways</u> Is there any likely method for a potential contaminant to come into contact with people or other receptors and cause harm either during development, after occupation by the final user or as a result of the development process. This is known as a pathway.</p>	<ul style="list-style-type: none"> a. Ingestion of contaminated soils b. Inhalation or ingestion of contaminated dusts c. Contamination of water supplies d. Inhalation of gases or vapours both indoors and outdoors e. Passage of gas or vapour into buildings giving a toxic effect, risk of asphyxiation or a risk of explosion. f. Contaminants washing out or soils or passing through them to contaminate neighbouring land, underground water or surface waters. g. Skin contact with contaminated soils. 	<p>This Pathway identification is critical in identifying the risk posed by any substance to any receptor.</p> <p>More detailed examples are contained in the contaminated land statutory guidance referenced above.</p>
<p><u>Outcome of Risk Assessment</u> A process by which the risks posed to receptors are considered and assessed in a methodical, scientific and proportionate manner; considering source-pathway-receptor relationships.</p>	<p>The type and complexity of a risk assessment will vary from relatively simple quantitative assessment for less sensitive developments, to those which require complex assessments including statistical analysis and modelling for ground water and gas impacts for more complex sites for example.</p>	<p>The degree of assessment necessary, the type of screening and assessment used, the levels of residual contamination deemed to be safe and the models chosen will vary on a site to site basis and the details of a specific risk assessment will have to be agreed with the local planning authority in each case.</p>

2.3 Zoning or Phasing of Sites

Where larger areas or more complex sites are proposed for development it may be possible to sub divide them into separate areas of land contamination according to different activities or land uses contained within the footprint of the site. Dealing with land contamination in zoned manner can often be transposed into the phasing of development and subsequent signing off process for completed plots in accordance with remedial requirements.

It is crucial that all stakeholder groups in the development process are aware of their responsibilities, the phasing of work and requirements for completion. For this reason it is likely that the developer may be asked to propose any phasing of the development and remediation at the time of an application to allow a suitable scheme to be agreed and planning conditions to be worded in such a way as to ensure that the remediation is carried out whilst not holding up the development and future sales.

2.4 Offsite Contamination

In some cases the previous use of a site may have led to contamination both on and off site (outside the footprint of the original site). It is possible that development proposals may not include the full extent of contaminated areas associated with the former use even where a region of contamination appears to be linked to the former use of the main development site.

Wiltshire Council is aware that allowing such 'islands' of contamination to remain will result in a legacy of sites affected by contamination that is may be uneconomic to develop in the future. Some of these sites may have the potential to be considered under part 2a of the Environmental Protection Act 1990 however it is within the spirit of the law and guidance that such locations are remediated as part of the overall development of the historic site, not left as a legacy of contamination for future generations.

In these cases Wiltshire Council will expect site investigations and remediation proposals to include any other areas of land associated with the former land use subject to contamination even if those areas of land fall outside the proposed development site. Any application will have to include detailed proposals for the

remediation of these potential 'orphan' areas and associated programmes for the completion of this work.

The exact methodology by which this remediation can be secured will vary depending on the individual circumstances but as a guiding principle Wiltshire Council will **NOT** support the exclusion of the worst or most contaminated areas as part of a development proposal. It is the intention of Wiltshire Council to ensure that such highly contaminated areas of land are not left as undeveloped and economically undevelopable. In significant cases the failure to adequately address this issue may result in the delay or refusal of a particular scheme.

Key Points:

Wiltshire Council will consider the following issues when considering whether a land quality assessment should be undertaken:

- Sensitivity of proposed end use;
- Historical use of the site;
- Likelihood that contamination significant to the end use is present;
- Whether the level and distribution of any contamination could pose a risk to any receptors.
- Reasonably possible impacts to other sensitive receptors in the vicinity;
- The nature and extent of the development.
- Phased or zoned development may be appropriate for larger or more complex sites.
- Investigation and remediation proposals must include off site 'orphan' contamination associated with the main development site.

Note: This list is not exhaustive and other factors may determine that, in the local authority's opinion, a land quality assessment is required.

2.5 General principles of Land quality assessments

Within the planning process the purpose behind land quality assessments is to demonstrate that a site is, will be or has been made safe for the proposed use. In order to do this the applicant must be able to demonstrate a good understanding of the development sites history, the likely contamination present, who or what might be affected and how the contaminants may come into contact with sensitive receptors. For any potential contaminant this relationship is known as a contaminant linkage and is illustrated below.

Figure 1 Contaminant linkage



For a contaminant linkage to exist on a site all three parts must be present. Typical information sources needed for each section are discussed below

2.5.1 Source

The source is basically the contaminants that are present on the site. It is necessary to understand what the site has been used for, what chemicals or substances might be present, what form they might be in (e.g. liquid, dissolved, solid, gas) and where on the site or at what depth in the soils they might be encountered. The toxic or environmental impacts of the chemicals must also be understood.

2.5.2 Pathway

The pathway is the means by which the contaminant may come into contact with the receptor. This requires an understanding of the underlying geology and hydrogeology of the site, the hydrology of nearby surface water, routes by which a chemical may enter a body e.g. ingestion, inhalation, skin contact and this

understanding must be in place for each chemical, substance or similar group of chemicals present on the site.

2.5.3 Receptor

Identifying the possible receptors requires an understanding of the proposed use of the site, the identification of sensitive ground water, surface water or other receptors, the identification of any water abstraction or similar uses on or around the site that might be affected and the identification of sensitive environmental sites in the immediate vicinity.

2.6 Site Assessment Elements

Typical site assessments would consist of one or more of the phases summarised below:

2.6.1 Phase 1 Investigation (Desk Study, Walkover and Preliminary Risk Assessment)

The desk study element of a Phase 1 investigation typically comprises an assessment of the historic land use usually obtained from historic maps, known local issues such as landfill sites, pollution incidents, water abstractions, known contaminative uses etc. This part of the report is usually purchased from a commercial provider.

A site walkover is undertaken to confirm the current visual and sometimes olfactory status of the site; observing the condition of vegetation, watercourses, buildings and the presence of storage tanks, pipe work etc. and other infrastructure associated with the former land use if still present and visible. Site observations are then combined with a literature search to identify any documented uses of the site, the planning history, past site investigations and assessment reports of relevance.

The geology and hydrology of the site is determined either from a commercial source or from the British Geological mapping series. The likely on and offsite receptors are identified and discussed in the context of the proposed development.

The above information is used to produce a qualitative or preliminary risk assessment within the body of the Phase 1 report. This looks at the potential source - pathway-receptor for any contaminants which could be present and gives an estimate of how significant impacts could be. There are a number of methodologies used to complete this process but the most important factor is to ensure that the information is accurate and that the conclusions reached are reasonable and the precautionary principle is observed.

At this point the Phase 1 Investigation report may demonstrate and conclude that :

- 1) The site appears likely to be free from contamination and that no investigation i.e. a Phase 2 Assessment is warranted or;
- 2) That there are one or more potential contaminant linkages that require further investigation. Under these circumstances a Phase 2 Investigation

(Intrusive Investigation) would be commissioned on the basis of the Phase 1 Investigation Report.

It is not uncommon for a report to be presented to the Local Planning Authority which includes both Phas 1 & Phase 2 elements clearly identified. .

2.6.2 Phase 2 Investigation (Intrusive Investigation or Ground/Site Investigation)

Phase 2 Investigations require the physical investigation of the conditions present in or on the land, water and buildings present at a site.

Investigating a site in this manner requires the selection of appropriate sampling and investigatory methods presented in an investigation/sampling strategy. The number and location sampling locations, the number of samples taken and the decision on what substances to test for is guided authoritative references such as BS10175 (2011), CLR 11 and the findings of the Phase 1 Investigation. The aim of the process is to provide good quality, factual information on what contaminants of concern (if any) are actually present on the site, where they are and what impacts they are having or could have through a change in land use.

In some cases very extensive investigations are undertaken at this stage, in others the sampling is limited. The exact design and requirements of the investigation will vary on a site specific basis.

Data obtained from intrusive investigations both in-situ and from laboratory analysis would typically comprise a combination of data sets relating to the sample types shown in Table 2.

Table 2 Assessment of Investigation Findings

Type of Sample	Reference point	Data considerations
Soil Samples Soil Sample	Where a soil guidance value is published by the Environment Agency for a particular chemical this value is usually used. If no published value is available for the chemical other values are calculated using a methodology accepted in the UK. The UK methodology is covered by the use of the CLEA model. Common chemicals were modelled by LQM / CIEH and are widely used.	Data values may be above or below a published value (pass / fail) Data values may be above or below a calculated value (pass / fail)
Water samples	Compared to drinking water standards or environmental quality standards as appropriate.	Data values may be above or below a published/calculated value (pass / fail)
Gas / Vapour	This may be covered within soil sample data or specific exposures such as ground gas should be compared to published guidance/standards.	Either above or below value (Pass / Fail). In the case of ground gas this will result in a recommendation for protection measures. Includes radon.

The use of published or calculated standards may not be the sole basis where the Local Planning Authority considers the status of the land and what may be required to bring about development of it.

Most published guideline figures are very precautionary and if all the tests 'pass' the standards it may be reasonable to conclude that a site should not pose any risk to health; subject to a robust assessment having been undertaken to the satisfaction of the Local Planning Authority.

In some cases one or more chemicals may 'fail' published or calculated acceptance values and a decision then needs to be made regarding the significance of this failure and the risk associated with nature and occurrence of

the observed values. In some cases this level of investigation is enough to move on to designing a remediation scheme but on more complex sites a second phase (Supplementary Investigation) of site investigation is necessary to confirm the extent and location of contamination.

2.6.3 Supplementary Investigations

Where required this phase of investigation includes additional sampling, usually at different locations from the Phase 2 Investigation. The purpose of this investigation is to further refine the knowledge obtained and increase confidence that the full extent of contamination is understood to enable practical decisions to be made regarding the development.

In some cases Supplementary Investigations may take place after structures have been removed from site, tanks removed or other preparatory works undertaken.

The results are considered in the same way as for the Phase 2 investigation.

2.6.4 Risk Assessment

The detailed risk assessment, sometimes known as a quantitative risk assessment, is usually included as part of the Phase 2 investigation. It seeks to interpret the chemical testing results in the light of agreed or published standards and the findings of all investigations to date.

In the case of ground or surface water risks the likely contamination levels, direction of movement and final concentrations are usually modelled using a methodology acceptable to the Environment Agency.

Purpose of the risk assessment is to identify what, if any, chemicals are of significant concern and how likely it is that harm will be caused to one of the identified receptors. The risk assessment usually builds on that originally included in the desk study and corrects any assumptions that were found to be incorrect.

Once the risk assessment is completed it allows 'chemicals of concern' to be formally agreed and an appropriate scheme of works and remediation to be designed.

Levels of risk are assessed with reference to published soil guidance values or calculated generic assessment criteria. This is a very conservative approach and could on occasion result in unnecessary levels of remediation. The consultant / developer may choose to set remedial target levels via another risk based approach but must be able to demonstrate the reasoning behind the proposed levels, demonstrate the scientific and technical validity of their assumptions and proposals and be able to satisfy the local authority that the proposed levels are safe, reasonable and that they are still precautionary in approach.

2.6.5 Remediation Scheme

The remediation scheme draws on the results of the site investigations and risk assessment to identify how land contamination risks can be managed. Many remediation schemes concentrate on removing the contamination from the site but there are a number of other methods that can be considered depending on the site in question and the timescale available for remediation.

It is important that a remediation scheme will result in a site suitable for the proposed use whilst being proportionate, environmentally sustainable and cost effective as possible. Clearly the most appropriate remediation scheme will vary significantly from site to site but some typical examples of remediation techniques are outlined below:

1) Site layout and design.

Careful site design can ensure that the most sensitive users are isolated from the worst of the contamination. For example on a mixed use site locating roads or commercial uses in the most contaminated areas and housing in the cleanest may be all that is necessary. Similarly modifying a

residential design to eliminate or relocate garden areas may result in either a receptor being eliminated or a pathway being broken.

2) Dig and Dump

This is a common process, particularly on smaller sites. The contaminated materials are simply excavated and removed from the site. The voids are then filled with clean material making the site suitable for the proposed use.

This approach is the least sustainable in that the contamination is being moved elsewhere. Also because of charges associated with this approach it can be prohibitively expensive for large volumes of contaminated material.

Care has to be taken during the excavation phase that contaminated materials do not impact on nearby businesses or residents or on people adjacent to the road network used to remove the material.

Whilst this approach is used to some extent on all sites Wiltshire Council would generally prefer to see more sustainable solutions which deal with the problem onsite and minimise the amount of soils sent to waste.

3) Segregation and screening of soils

This approach covers two activities. First contaminated material can be excavated from one part of the site and re used in another less sensitive area e.g. used under some buildings, roads or landscaped areas; this however subject to a Materials Management Plan being in place as arisings which are relocated could otherwise be regarded as wastes being inappropriately being disposed of; something which a Materials Management Plan addresses.

The second method is to ensure that the residual contamination is separated in such a way as to break any potential pathway by which the chemicals of concern can come into contact with the receptor. Clearly this cannot work for all chemicals but some examples of this approach include.

- The use of granular break layers or geotextile membranes with clean material on the top. This basically ensures that the contaminated soil is so deep that it should not be possible to come into contact with it during the normal use of the finished site. The barriers also act as a marker between the clean and contaminated soils and prevents soils mixing over time or in the case of a granular break layer to prevent capillary rise of contaminants from beneath.
- The use of gas membranes and related technology in buildings to prevent the ingress of vapour or gas. These must be professionally installed and checked but can be used for a range of gases including radon, petroleum hydrocarbons and methane.
- The siting of buildings or hard standings over contamination that is not volatile. This means that occupiers of the site cannot come into contact with it unless the site was demolished once again.
- The use of protected water pipes in clean fill trenches. This is commonly used in soils that might be contaminated with certain hydrocarbons. It ensures that the water supply is protected.
- The use of clay caps or impermeable hard standing to stop water penetrating into certain part of the site where this would encourage the movement of chemicals of concern.

4) In situ treatment

Some contaminants can be treated by chemical or physical means, commonly by chemical oxidation, to break down the contaminant where they are and return the soils to 'safe' levels. The use of this approach is very dependent on the soil types, groundwater issues and the type of contamination concerned

5) Bio Remediation / soil washing/ Soil turning

On larger sites it is possible to excavate the contaminated areas and process the soils on site by a variety of means. This can result in the removal of a range of contaminants including metals, asbestos fibres and a range of hydrocarbons. It can take many months to process a site and a special licence must be obtained from the Environmental Agency but if there is enough land on the development site and the development schedule allows the time this can be a very effective way of cleaning up a site without having to remove large quantities of soil and other materials for tipping or processing elsewhere.

6) Pump and treat

In the case of contaminated ground water or perched waters it is sometimes possible to simply pump the impacted waters to the surface and either simply remove them from site or treat them by a variety of chemical or physical means in order to remove the contamination and return the water to the ground.

In some cases this type of treatment will result in contaminants being 'drawn' to the pump areas to allow their easier removal from the site.

7) Soil Vapour Recovery

Pipework is placed under the ground to allow a negative pressure to be produced. This will draw gas or vapour away and encourage the evaporation of volatile contaminants thus removing them from the ground.

A remediation strategy must meet several criteria. It must recognise the important contaminants and pathways identified in the site investigations and propose sensible ways of dealing with the contamination. It must take into account the practicalities of the individual site and any timing or phasing issues. Finally it must specify target levels at which the remediation can be agreed to be complete and how and by whom these will be measured.

Some of the above remedial approaches may also require permission from the Environment Agency hence they must also be consulted on any proposed remediation scheme.

2.6.6 Site Validation

Once the remedial works are completed a site validation report will need to be produced and provided to the local planning authority to demonstrate that the works were completed as agreed. These reports must be undertaken by a competent person and would include chemical testing results, site inspections, photographs, details of the work completed and details of any unexpected events or findings encountered during the remedial works. Copies of waste records, chemical tests and other significant paperwork would usually be included.

This document is very important as it is central to the process of planning conditions discharged and also for any insurance backed building guarantee systems.

On more complex sites the validation may take place in phases or zones.

2.7 The extent of an Investigation Required

It is preferable that all basic investigations into land contamination have been completed prior to the submission of a planning application or request pre-application advice. At the very least a desk study should be considered.

It is of course possible to make an application without providing the land contamination information. Applicants should be aware however that in the absence of the contaminated land information there is the significant possibility that the application will be rejected on the basis of insufficient information, or; a recommendation for refusal may be made or; if a permission is recommended it is likely to have a potentially more onerous planning condition that would be necessary if the information were provided in advance.

In the case where an applicant wished to ensure that adequate investigation has been carried out in advance the flowchart given in figure 2 outlines the basic process and explains what level of investigation is usually considered necessary. Figure three identifies the steps needed to secure compliance with any planning condition.

Bespoke planning conditions are likely to be necessary for more complex sites, particularly those with multiple phases of remediation. In these cases to ensure understanding and relevance the exact wording of a condition would usually be agreed with the applicant or their agent prior to being imposed.

In other cases when a contaminated land condition is required it is likely that one of the more standard planning conditions will be applied to a site. Examples of three types of condition of varying complexity are included in appendix 3

DRAFT

Figure 2 Determining if a contaminated land assessment is necessary

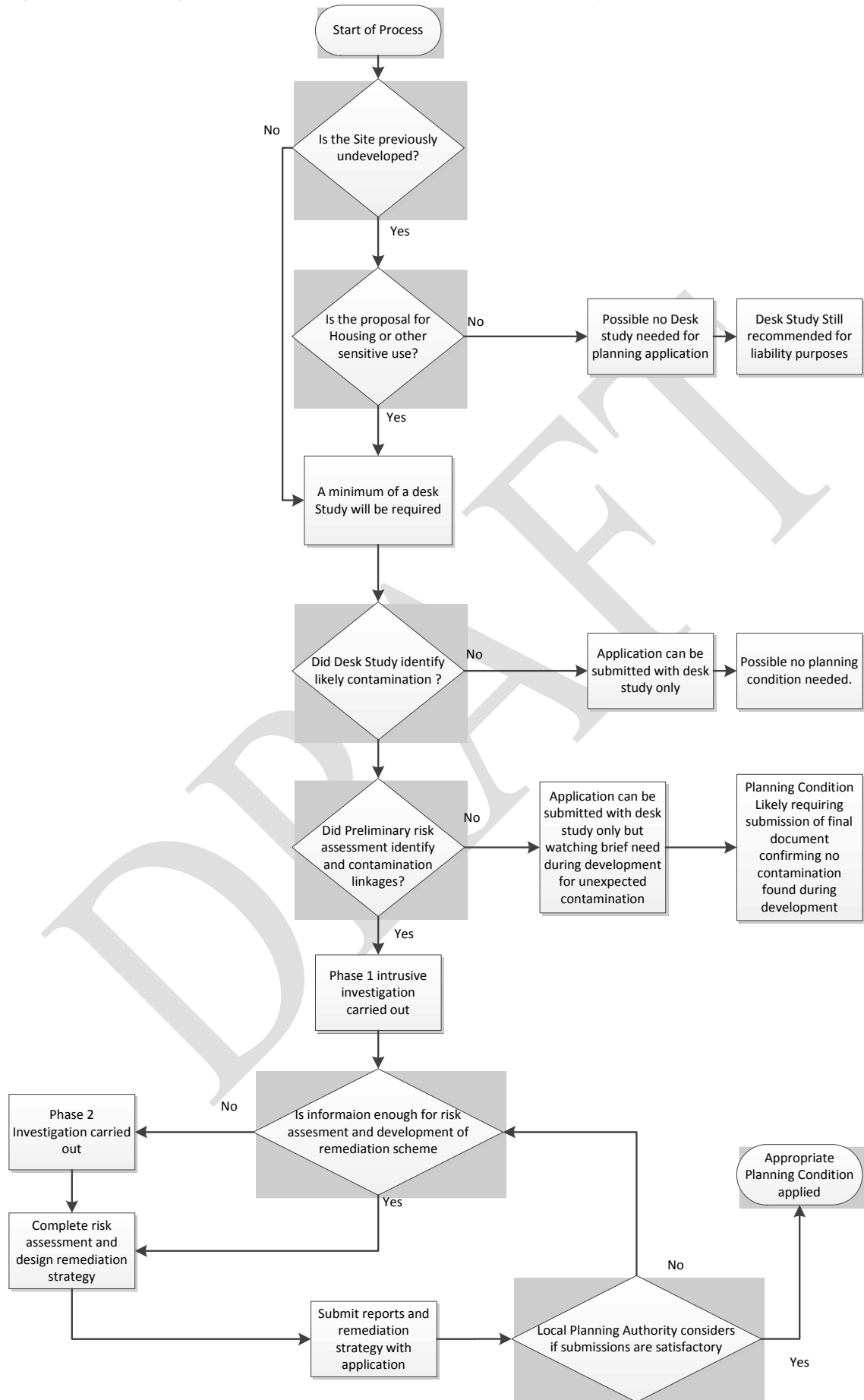
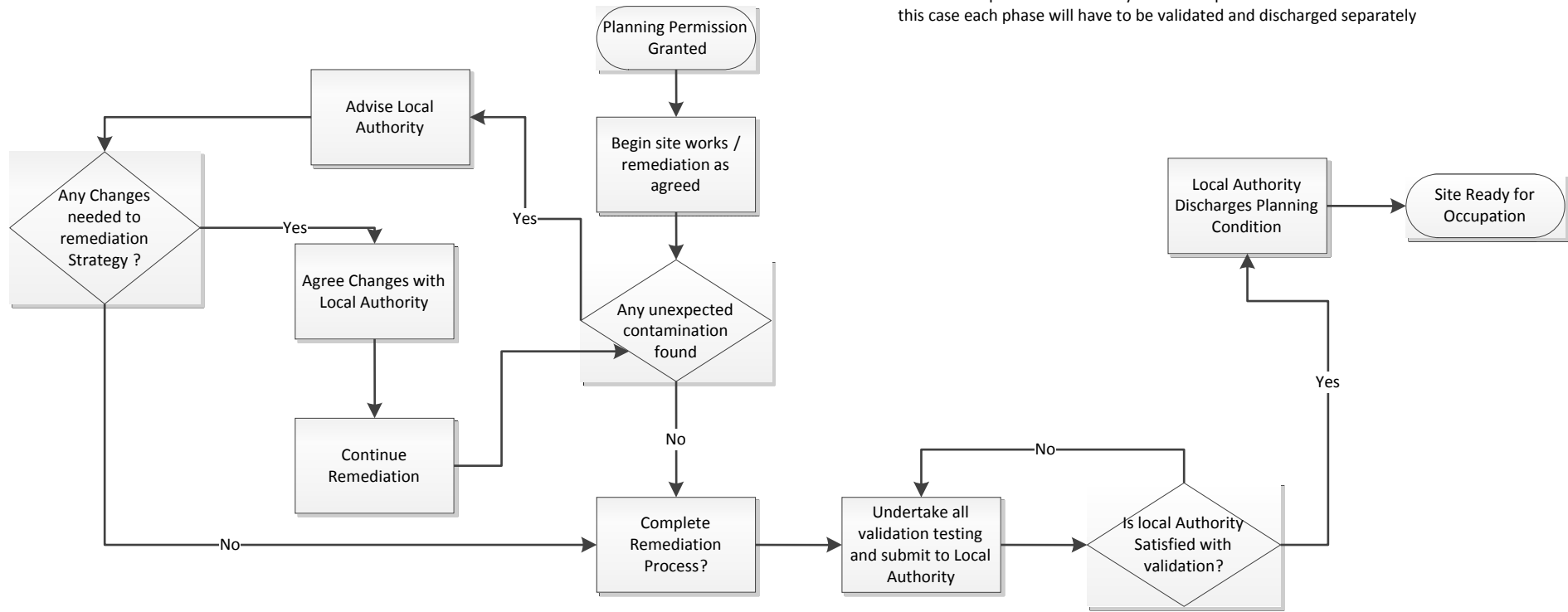


Figure 3 Process of complying with Contaminated Land Condition



Note: for complex sites there may be several phases to the remediation . In this case each phase will have to be validated and discharged separately

2.8 Reporting the Assessment

In summary, the following information should be provided as a minimum when reporting a land quality assessment:

- **A description of the methodology used**
- **Phase 1 Investigation including a comprehensive desk study including preliminary risk assessment (usually qualitative)**
- **Phase 2 Investigation including design of sampling strategy, detailed maps, sample locations, soil logs, soil, water and gas testing results and any other relevant information.**
- **Supplementary Investigations (where required). Including information as for phase 2 and additional findings and conclusions**
- **Results of any gas, water or other modelling used**
- **Updated risk assessment (quantitative) and Conceptual Site Model. Statistical analysis where appropriate**
- **Findings of investigation and recommendations for additional monitoring. Any uncertainties surrounding the investigation or conclusion should be highlighted**
- **Remediation strategy including target levels and objectives. Note target levels must be risk based but do not have to be as low as the SGV or GAC values if a higher level can be reasonably justified.**

2.9 Audit trail

The assessment should provide a transparent account of all sampling and modelling undertaken and all assumptions made. Full results should be included along with the accreditation of the analysing laboratories used.

4 Planning obligations: S106

Section 106 agreements can be used to require developers to provide assistance or support to enable local authorities. In the case of land contamination S106 agreements are likely to be used to ensure that offsite or satellite areas of contamination are being remediated either along with the development site or that sufficient funding is available to secure the remediation at a later date.

DRAFT

Appendix 1

Core Policy 56: Contaminated land

- 6.111** Wiltshire generally has good or excellent land quality but our industrial heritage means that there are many sites which have had one or more industrial or commercial uses which may have resulted in soil and water contamination that may need to be addressed.
- 6.112** Sites which pose a potential hazard to health, buildings, water or the environment can be managed under the contaminated land provisions of the Environmental Protection Act 1990.
- 6.113** The vast majority of sites which may be subject to contamination are addressed through the redevelopment process. It is essential to ensure that the development of these Brownfield sites leaves them safe and suitable for their new use.

In controlling land contamination risks via the planning system, the 2012 Planning Policy Framework states that:

120. To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.
121. Planning policies and decisions should also ensure that:
- the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;
 - after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
 - adequate site investigation information, prepared by a competent person, is presented.
- 6.114** The implementation of satisfactory investigation, risk assessment, remediation and validation of these sites is managed through the planning process.

- 6.115** Achievement of this objective should assist in providing the necessary confidence to owners and occupiers of land, after development, about its condition and its standing in relation to relevant environmental protection regimes including Part IIA of the Environmental Protection Act 1990.
- 6.116** On a precautionary basis, the possibility of contamination should be assumed when considering planning applications in relation to all land subject to or adjacent to previous industrial use and also where uses are being considered that are particularly sensitive to contamination, for example, housing, schools, hospitals and children's play areas. Contamination should also be considered when preparing planning policy documents, including neighbourhood plans and masterplans.
- 6.117** The council has adopted an Inspection Strategy for Contaminated Land⁽⁶⁵⁾ which specifically addresses the approach the council is taking to land covered by the Part IIA regime. The principles of risk assessment and site categorisation contained within the Inspection Strategy are also useful when considering the re-use of land through the planning process.
- 6.118** Core Policy 56 requires that all development which either because of its nature or location may be on or adjacent to land or water affected by historic contamination overcomes this barrier to development by demonstrating the measures that will be taken to help mitigate these impacts. The nature and extent of the mitigation measures necessary will be site specific and the council's requirements will be proportionate and reasonable. In line with the Inspection Strategy additional guidance will be prepared to assist developers in effectively addressing the issue of land contamination.

Development proposals which are likely to be on or adjacent to land which may have been subject to contamination will need to demonstrate that measures can be taken to effectively mitigate the impacts of land contamination on public health, environmental quality, the built environment and amenity.

Developers will be required to demonstrate that the development site is, or will be, made suitable for the proposed final use and will need to provide one or more of the following documents.

- i. Detailed site history identifying possibly contaminative uses.
- ii. Site characterisation: The nature and extent of any contamination and the hazards and risks posed.
- iii. Detailed remediation scheme: Including methodology and quality assurance.
- iv. Methodology to report unexpected contamination.
- v. Methodology to ensure verification of remedial works.
- vi. Details of long term monitoring and maintenance proposals (where necessary).

The need for, type and complexity of reports will depend on the specific site.

Target: .Applications will be permitted by Wiltshire Council where it can be demonstrated by the applicant that any contaminated land liabilities associated with a proposed development will be addressed; otherwise a recommendation for refusal will be made by the Wiltshire Council.

Monitoring and Review: Inspection Strategy for Contaminated Land.

Delivery Responsibility: Wiltshire Council.

DRAFT

Appendix 2: Land Quality Assessment Toolkit

In proactively dealing with land contamination issues the importance of communication between Local Authority officers and developers, or their consultants cannot be overstated. It is hoped that this toolkit will clearly indicate what information is required to satisfactorily complete a Land Quality Assessment and what information needs to ideally be agreed **prior** to the assessment taking place.

DRAFT

Land Quality Assessment Developer Notes

Carry out a land history search to identify key historic land uses, pollution incidents and other environmental factors.

Wiltshire Council can provide basic site related information for a fee of £60.00. There are commercial other providers however that may hold additional information not available to the Local Authority. Developers are advised to obtain a report (The same as those used when buying or selling property) in order to provide some base line information on the sites history and the likelihood that land contamination may have occurred.

Identify if any further formal assessment is required.

Consider the findings of the land use report and the use being proposed for the site. If the use is considered 'vulnerable' a desk study will definitely be required as part of the planning process. Vulnerable uses would include residential, nurseries, schools, children's play areas, hospitals, allotments and agricultural activities.

If the land use is commercial or industrial and there is no evidence of past uses or likely contamination then a desk study may not be required. You should discuss this with an officer from public protection.

In practice you are strongly recommended to commission at least a desk study as this will minimise the chance of any significant issues being overlooked and may well minimise your future liabilities.

You should ensure that the desk study is carried out by a suitably competent, experience and qualified individual or company. This is more than a geotechnical survey and requires someone with experience in interpreting possible risks to human health and the environment.

Review the findings of Phase 1 Investigation (Desk Study & Walkover)

The Phase 1 Investigation should provide comprehensive findings on the past uses of the site, the likelihood that land contamination may have occurred. Additionally it should have identified the type, nature and most likely locations that contamination may be expected, any potential health risks, possible impacts on controlled water and possible impacts on other environmental receptors.

The study should contain an preliminary risk assessment identifying any possible source – pathway- receptor relationships and providing an indication of how significant these linkages

might be. This information will allow decisions to be made regarding the need for additional investigation or an intrusive site investigation.

If the desk study has not identified any significant contamination linkages you should discuss the findings with an officer from public protection. There may be no need for additional investigation depending on the nature of the proposed development.

If the desk study did identify any significant contamination linkages it should have gone on to recommend that further investigation should be necessary. If this is the case you should commission an intrusive or Phase 2 site investigation. As for the desk study you must ensure that you appoint a suitably qualified and experienced company to undertake the work.

Agree the scope of a Phase 2 Investigation

Your consultant should be able to propose a suitable investigation and provide quotations as to the likely cost. If the site is still in active use the investigation is likely to cause some disruption so this should be factored into your timescales.

Once the basic scope of the investigation has been agreed it is recommended that you or your agent agree the scope with the Public Protection Officer to ensure that the council is satisfied with the proposals.

You should be aware that if the development site is significantly covered with buildings or other structures this may interfere with the ability to obtain a comprehensive site study at this time. This is particularly the case if the site is still active in its existing use.

If this is the case there may be a number of uncertainties in the findings of this study that will not be resolved until either the site is cleared for development or additional investigation can take place. In some cases to avoid delay in applying for planning permission it may be possible to undertake additional sampling as part of the construction process. This issue should be discussed and agreed with the council and will depend on the type and extent of contamination expected as well as the degree of uncertainty.

The study should contain a robust number of sample locations, depths of sampling and number of samples to be able to demonstrate statistical confidence in any predicted contaminant concentrations across the site. The study should also include sampling of water on the site to determine the depth of ground water, identify and perched water on the site and identify the levels of contamination. Similarly if indicated by the desk study there should be a suitable number of gas monitoring points and a monitoring period related to the gassing potential of the ground in question. The number of rounds of water and gas sampling should be discussed and agreed with the Public Protection Officer prior to the study being undertaken.

At the conclusion of the phase 2 Investigation there may be sufficient information to allow a full and thorough risk assessment to take place and the conceptual model for the site updated.

This would include the comparison of soil and water samples against the appropriate published, modelled or calculated standards. The report should contain details of the screening levels selected, the methodologies used and a discussion of the findings. Any uncertainties or difficulties encountered in the investigation must be identified in the report.

The risk assessment should have a clear methodology, be scientifically robust and demonstrate the levels of risk from different substances or groups of substances.

If sufficient information is available to confidently identify hazards and risks then a scheme of remediation can then be designed.

If the site is a complex one or the substances are particularly hazardous it may be necessary to undertake a second round of sampling (phase 2 assessment) to clarify the conditions on the site and the location of any significant contamination.

When designing site investigations and assessments applicants and their appointed agents are referred to the following guidance.

- 1) Model Procedures for the Management of Contaminated Land CLR 11.
- 2) BS 5930:1999 Code of practice for site investigations, as modified by BS14668 for soil and rock descriptions
- 3) Part IIA Statutory Guidance
- 4) BS10175:2011 Code of Practice for the Investigation of Potentially Contaminated Sites
- 5) Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination, 2001 (Environment Agency).
- 6) Environment Agency guidance Environment Agency Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination, 2006 (EA RTM, 2006)

Development of Remediation Strategy

Drawing on the findings of the Phase 1 & 2 investigations it should be possible to design a suitable scheme of remediation.

There are a large number of possible ways to address this issue and the selection of techniques will be very site specific. The appointed consultant should lead on this matter although contact and discussion with the Public Protection Officer is recommended to ensure that the council is happy with the proposals prior to their formal submission.

Any remediation strategy must contain provisions for the handling and treatment of unexpected contamination that may be identified during the remediation or construction process.

It should be noted that the decision on target levels for remediation and the selection of methodologies is a matter for you and your consultant. The local authority can offer advice but cannot design a scheme.

Propose Validation Work

Any scheme of works will need to be validated. In some cases this will require additional chemical sampling or measurement of depths of clean soils. In other cases it will require documentary evidence that certain measures were installed on site.

If soils are being remediated the 'target' levels for acceptable levels of contamination will need to be specified and agreed with the council.

Once again the validation process and targets should be agreed in advance with the Public Protection Officer and the validation monitoring and report should be undertaken and produced by a suitably qualified, experienced and competent person.

If additional long term monitoring is required, for example in the case of developments on or close to landfill sites this should be identified and discussed both in the remediation proposals and validation report.

Once a site has been remediated and validated as agreed it is usually possible to discharge the relevant planning condition.

Phasing of Remediation and Development

On large or complex sites it may be necessary to remediate parts of the site at different times and to different standards. In order to avoid delays in the ability to sell or occupy premises and to allow the timely discharging of planning conditions it may be necessary to break the site into a number of areas and phases each with the appropriate conditions in place.

If this is likely to be the case early discussions with both the local planning authority and Public Protection officer are essential.

Further Information

For further information please contact Steve Manning on 01225 716680;
steven.manning@wiltshire.gov.uk .

Criteria for assessing the adequacy of Land quality assessments

Internal use
Criteria

Phase 1 Investigation (Desk Study & Walkover)		
Adequacy of baseline information	Historic uses and site extent clearly identified	Y/N
	Likely contaminants/receptors identified	Y/N
	Pathways identified and discussed	Y/N
	Preliminary risk assessment and conceptual site model produced	Y/N
	Recommendations for further study	Y/N
	Clear consideration of proposed future use	Y/N
Phase 2 Investigation (Site Investigation)		
Appropriate number of sample locations (locality, depth and number of samples) linked to preliminary risk assessment and conceptual site model		Y/N
Appropriate Water Monitoring linked to preliminary risk assessment and conceptual site model		Y/N
Appropriate Gas monitoring linked to preliminary risk assessment and conceptual site model		Y/N
Adequate selection of SGV, GAC, DWS and EQS and other screening values linked with preliminary risk assessment and conceptual site model		Y/N
Adequate analysis and discussion of findings (including uncertainties and conclusions); linked to preliminary risk assessment and conceptual site model		Y/N
Robust quantitative risk assessment (Referenced and founded on good science, guidance and standards).		Y/N

Appropriate use of models for water, GAC's and gas as appropriate.	Y/N
Report clearly focussed on risks to principle receptors e.g. Humans & Controlled Waters	Y/N
Remediation rationale and options appraisal	Y/N
Presentation and Assessment of Results	
Are appropriate pollutants and/or objectives considered?	Y/N
Have correct units been used?	Y/N
Does report contain quality assurance data for all samples?	Y/N
Does report clearly identify source of SGV, GAC and other screening levels?	Y/N
Does report contain all sample results, soil logs, water sample and gas sample results?	Y/N
Does report make clear recommendations?	Y/N
Remediation Strategy	
Are remedial targets clearly defined and justified?	Y/N
Have remediation methodologies, phasing and timing been considered?	Y/N
Have potential impacts on offsite receptors been assessed and managed?	Y/N
Have risks to ground water been assessed and managed?	Y/N
Have risks to workforce been assessed and managed?	Y/N
Have uncertainties been identified and discussed?	Y/N
Have contingencies for unexpected pollutants been included?	Y/N
Validation Reporting	
Does report tally with remediation targets proposed? If not why not?	Y/N
Does report include chemical testing data, waste transfer information, Photographs of key remediation and validation of soil depths?	Y/N
Does report contain confirmation that physical works such as geotextile membranes, protected pipes and gas protection were installed and checked?	Y/N
Was report prepared and signed off by competent person?	Y/N
Has report met all objectives proposed in remediation strategy?	Y/N
Is any long term monitoring needed and if so is there a proposed reporting mechanism?	Y/N

Appendix 3. Model Planning Conditions

Model Condition 1 for sites likely to be relatively free from contamination and relatively simple

CONTAMINATION INVESTIGATION-SUBMISSION AND IMPLEMENTATION

No development shall commence on site until an investigation of the history and current condition of the site to determine the likelihood of the existence of contamination arising from previous uses has been undertaken and until:

- a) The Local Planning Authority has been provided with written confirmation that, in the opinion of the developer, the site is likely to be free from contamination which may pose a risk to people, controlled waters or the environment. Details of how this conclusion was reached shall be included.
- b) If, during development, any evidence of historic contamination or likely contamination is found, the developer shall cease work immediately and contact the Local Planning Authority to identify what additional site investigation may be necessary.
- c) In the event of unexpected contamination being identified, all development on the site shall cease until such time as an investigation has been carried out and a written report submitted to and approved by the Local Planning Authority, any remedial works recommended in that report have been undertaken and written confirmation has been provided to the Local Planning Authority that such works have been carried out. Construction shall not recommence until the written agreement of the Local Planning Authority has been given following its receipt of verification that the approved remediation measures have been carried out.

REASON: To ensure that land contamination can be dealt with adequately prior to the use of the site hereby approved by the Local Planning Authority.

POLICY-[number & purpose]

Model Condition 2 for sites likely to have low to medium levels of contamination or complexity

CONTAMINATION INVESTIGATION –SUBMIT AND IMPLEMENT REVISED

No development shall commence on site (other than that required to be carried out as part of a scheme of remediation approved by the Local Planning Authority under this condition), until an investigation of the history and current condition of the site to determine the likelihood of the existence of contamination arising from previous uses has been carried out and all of the following steps have been complied with to the satisfaction of the Local Planning Authority:

- Step (i) A written report has been submitted to and approved by the Local Planning Authority which shall include details of the previous uses of the site for at least the last 100 years and a description of the current condition of the site with regard to any activities that may have caused contamination. The report shall confirm whether or not it is likely that contamination may be present on the site.
- Step (ii) If the above report indicates that contamination may be present on or under the site, or if evidence of contamination is found, a more detailed site investigation and risk assessment shall be carried out in accordance with DEFRA and Environment Agency's "Model Procedures for the Management of Land Contamination CLR11" and other authoritative guidance and a report detailing the site investigation and risk assessment shall be submitted to and approved in writing by the Local Planning Authority.
- Step (iii) If the report submitted pursuant to step (i) or (ii) indicates that remedial works are required, full details have been submitted to the Local Planning Authority and approved in writing and thereafter implemented prior to the commencement of the development or in accordance with a timetable that has been agreed in writing by the Local Planning Authority as part of the approved remediation scheme. On completion of any required remedial works the applicant shall provide written confirmation to the Local Planning Authority that the works have been completed in accordance with the agreed remediation strategy.

REASON: To ensure that land contamination can be dealt with adequately prior to the use of the site hereby approved by the Local Planning Authority.

POLICY-[number & purpose]

Model Condition 3 for sites likely to have significant levels of contamination or which are complex

INVESTIGATION-SUBMIT AND IMPLEMENT FINDINGS (MAJOR SITES) REVISED

No development shall commence on site (other than that required to be carried out as part of a scheme of remediation approved by the Local Planning Authority under this condition), until steps (i) to (iii) below have been fully complied with. If unexpected contamination is found after development has begun, development must be halted on that part of the site affected by the unexpected contamination to the extent specified by the Local Planning Authority in writing until step (iv) has been complied with in full in relation to that contamination.

Step (i) Site Characterisation:

An investigation and risk assessment must be completed to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings submitted to and approved in writing by the Local Planning Authority. The report of the findings must include:

- A survey of the extent, nature and scale of contamination on site;
- The collection and interpretation of relevant information to form a conceptual model of the site, and a preliminary risk assessment of all the likely pollutant linkages;
- If the preliminary risk assessment identifies any potentially significant pollutant linkages a ground investigation shall be carried out, to provide further information on the location, type and concentration of contaminants in the soil and groundwater and other characteristics that can influence the behaviour of the contaminants;
- An assessment of the potential risks to
 - human health,
 - property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes,
 - adjoining land,
 - groundwater and surface waters,
 - ecological systems,
 - archaeological sites and ancient monuments;

This must be conducted in accordance with DEFRA and the Environment Agency's "Model Procedures for the Management of Land Contamination, CLR 11" and other authoritative guidance.

Step (ii) Submission of Remediation Scheme:

If any unacceptable risks are identified as a result of the investigation and assessment referred to in step (i) above, a detailed remediation scheme to bring the site to a condition suitable for the intended use must be prepared. This should detail the works required to remove any unacceptable risks to human health, buildings and other property and the natural and historical environment, should be submitted to and approved in writing by the Local Planning Authority. The scheme must include all works to be

undertaken, proposed remediation objectives and remediation criteria, a timetable of works and site management procedures.

Step (iii) Implementation of Approved Remediation Scheme:

The approved remediation scheme under step (ii) must be carried out in accordance with its requirements. The Local Planning Authority must be given at least two weeks written notification of commencement of the remediation scheme works.

Step (iv) Reporting of Unexpected Contamination:

In the event that contamination is found at any time when carrying out the approved development that was not previously identified it should be reported in writing immediately to the Local Planning Authority. An investigation and risk assessment should be undertaken in accordance with the requirements of step (i) above and where remediation is necessary, a remediation scheme should be prepared in accordance with the requirements of step (ii) and submitted to and approved in writing by the Local Planning Authority.

Step (v) Verification of remedial works:

Following completion of measures identified in the approved remediation scheme a verification report (referred to in PPS23 as a validation report) must be produced. The report should demonstrate the effectiveness of the remedial works.

A statement should also be provided by the developer which is signed by a person who is competent to confirm that the works detailed in the approved scheme have been carried out (The Local Planning Authority can provide a draft Remediation Certificate when the details of the remediation scheme have been approved at stage (ii) above).

The verification report and signed statement should be submitted to and approved in writing of the Local Planning Authority.

Step (vi) Long Term Monitoring and Maintenance:

If a monitoring and maintenance scheme is required as part of the approved remediation scheme, reports must be prepared and submitted to the Local Planning Authority for approval at the relevant stages in the development process as approved by the Local Planning Authority in the scheme approved pursuant to step (ii) above, until all the remediation objectives in that scheme have been achieved.

All works must be conducted in accordance with DEFRA and the Environment Agency's "Model Procedures for the Management of Land Contamination, CLR 11" and other authoritative guidance.

REASON: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

POLICY-[number & purpose]