

**CONTAMINATED LAND STRATEGY REVIEW**

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## 1 Introduction

- 1.1 This document is the first review of the Contaminated Land Strategy adopted by the council in August 2001. The Strategy was produced in accordance with amendments to Part IIA of the EPA 1995 and the Contaminated Land Regulations, 2000. This review has been undertaken as part of the ongoing requirement to assess strategies to deal with the contaminated land legacy. This report is not intended to supersede the original strategy but has been written to move forward in terms of refinement on the initial strategy. No part of the original strategy has been included within this document and as such both should be viewed when referring to the revised strategy. The following sections of the original strategy, however, have been superseded by this review.

Section 4.2 – ‘Aims & Objectives of the Strategy’ has been superseded with section 2 of the strategy review.

Figure 4.1 – ‘Summary of Procedures of the Contaminated land Strategy’ has been replaced with the flowchart in Appendix 4 of the revised strategy.

Section 5.8 and 9.1 – ‘Data management’ has been superseded with section 6 of the revised strategy.

Section 8 – ‘Implementation of the Strategy’ including timetables has been superseded by section 4 ‘Appraisal of Targets’.

- 1.2 This strategy meets with the statutory guidance set out in the DETR circular 02/2000 as requirement to employ a strategic approach in the identification and remediation of contaminated land. This document has also been written as a continuation to review the councils statutory duty under sections s78B (1) and s78E (1) of Part IIA EPA 1990 to:

“Every local authority shall cause its area to be inspected from time to time for the purpose of

- (i) identifying contaminated land
- (ii) ...to decide whether land.....designated as a special site”

and

“...where the local authority has identified any contaminated land...the enforcing authority shall...serve a remediation notice...”

- 1.3 This report is intended to be an integrated report putting forward: procedures for dealing with contaminated land, information management systems and in addition to this the review of existent and future objectives.

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## **2 Aims & Objectives of the Strategy**

- 2.1 To review and assess the original objectives set out in the first strategy document and to monitor performance
- 2.2 To demonstrate the development of a suitable Information Management System to deal with the large volume of potential sites and subsequent information and data.
- 2.3 To set new targets in relation to changes in potential workloads
- 2.4 To put forward an amended timetable for further review of the strategy
- 2.5 Details of contaminated land procedures put in place since August 2001
- 2.6 To demonstrate and link related reports that have been compiled in relation to contaminated land.

### 3 Overall review of Time-scales & Objectives

- 3.1 The targets set in the original strategy are set out below (table1). At present we are about twenty months behind schedule after now completing the identification and prioritisation stage of the strategy. The main cause of this delay was the underestimation of the number of potential sites which would be later identified.. It was estimated that around 200-250 potential sites would be identified whilst at present a total of around 1200 have been found. This represents a 360% increase in sites and will inherently filter through to significant increases in workloads.
- 3.2 Technical problems in the set-up of the GIS were encountered causing a delay of about 9 months. As this was recognised as a major component of the effective implementation of the strategy this represented a major set back.

**Table 1**

Target	Deadline	Date Achieved	Status
Site Identification	March 2002	Nov 2003	Complete
Site Prioritisation	June 2002	March 2004	Complete
Strategy Review	July 2002	April 2004	Complete
Site Inspections	Dec 2005	Pending	Incomplete
Site Investigations	Ongoing	Ongoing	Ongoing
Upper 20% of Sites Inspected	May 2003	Pending	Incomplete

- 3.3 As part of the review process Table 2 below shows the revised timetable to reflect changes in the workload and strategy.

**Table 2**

Target	Deadline	Date Achieved	Status
Part IIA Communication	July 2004	July 2004	Complete
Development of Guidance for Developers	Oct 2003	Oct 2003	Complete
Appraisal of Council Owned Land	Aug 2004	Aug 2004	Complete
Priority Site List	Aug 2004	August 2004	Complete
GIS Data Audit	Feb (yearly)	Ongoing	Ongoing
Site Inspections	March 2008	Pending	Incomplete
Strategy Review	October 2007	Ongoing	Ongoing

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Strategy Update	October 2005	Ongoing	Ongoing
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## 4 Appraisal of Targets

### 4.1 Communication of Part IIA to Major Stakeholders within the District

A draft letter was agreed and sent out to all major parties within the district that could potentially be affected by the implementation of the strategy. This is both in terms of liability and to advise of site inspections/investigations that may occur in the future. Included in the communication were other departments within the council, Parish's, Town councils, Utility companies, Service companies, construction companies and major developers within the District.

### 4.2 Development of Guidance for Developers

Guidance was produced for developers that are looking to redevelop brownfield land within the district in October 2003. At the moment the guidance is available on request and on the contaminated land section of the Council's website. At the time of writing this review the regional contaminated land group YAHPAC are looking to agree on a regional guidance note for the development on potentially contaminated land. Once adopted, this guidance will be included in the council's website and consideration will be given to targeting major developers within the district with both sets of guidance. The importance of guidance has been underpinned by the fact that it is recognised that the majority of sites are likely to be remediated through the planning regime. It is essential that land is redeveloped in line with the current UK framework for contaminated land to ensure that risks to the environment and human health are acceptable.

### 4.3 Appraisal of Council Owned Land

4.3.1 The assessment of potentially contaminated land ( in line with the initial strategy) will be evaluated solely on risk irrespective of land ownership. As the council could potentially be liable for the remediation of contaminated land through Part IIA powers it is essential that we have information on both; all land that is owned by the council, and all land previously owned and sold by the council. This should include any land that is leased.

4.3.2 After consultation with other departments it became apparent that there was no digital information such as a layer within GIS for Council Owned Land within the District. Information is held as annotations on paper maps. Subject to co-operation from other departments two options are available:

- (i) that a carte blanche approach is adopted where all council owned land is captured for inclusion within the networked files for GIS, or
- (ii) only areas identified as potentially contaminated are cross referenced with council owned land to be archived as a contaminated land file for GIS.

4.3.3 After considering both options a decision was made to implement option (ii), due to time and resource constraints. The information is held within GIS to be

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accessed at a later date when a site is being inspected, that is, or was formerly owned by the Council.

#### 4.4 Priority Site List

4.4.1 The CLARE prioritisation software that was used to rank sites in order of risk is only modelling certain factors of environmental parameters that may be somewhat different to the real world. As a result some sites will have been under or over estimated in terms of the environmental risk. Human judgement and intuition will be imperative in determining a 'Priority List of Sites' for the district due to this fact. The top 10% of sites prioritised by CLARE were reviewed to compile a top 20 sites for inspection.

4.4.2 Future inspection/investigation work after these 20 sites have been completed should be in line with the prioritised list documented in the report '*Report on the prioritisation of contaminated sites within the district*'

#### 4.5 GIS Data Audit

4.5.1 Due to changes in environmental factors, changes in current land use, developments, infrastructure and the constant updating of this information it has been recognised that certain data within the GIS should be reviewed periodically. After consultation with the officer responsible for the updating of the landline data this audit has been set for February of each year. This date has been primarily set as the updates are sent to us from the Ordnance Survey at around the start of each year. Other data sources such as English Nature will be audited at the same time so the majority of data is updated at one specific time. Data from the Environment Agency is sent to individual councils on an ad-hoc basis and this data will be updated on the GIS as we receive it rather than waiting until the February audit. The following tables show the various layers that are to be included in the auditing process.

**Table 3 - Receptors:**  
(Please refer to Glossary at back of document)

TYPE	AUDIT SOURCE
Residential	Landline
Allotments	Landline
Education	Landline
SSSI's	English Nature
NNR's	English Nature
SAC's	English Nature
SPA's	English Nature
RAMSAR's	English Nature
Nurseries	Landline
Water Features	Landline
GQA – Chemical	Environment Agency
GQA – Biological	Environment Agency
SPZ's	Environment Agency

Water Abstraction Points	Environment Agency
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**Table 4 - Pathways:**

TYPE	AUDIT SOURCE
Boreholes	BGS
Catchment Boundaries	Environment Agency
Flood	Environment Agency

**Table 5 - Source:**

TYPE	AUDIT SOURCE
Works	Landline
Factory	Landline
Electrical Sub Stations	Landline
Airfield	Landline
Colliery	Landline
Animal Works	Landline
Garage/Filling Stations	Landline
MOD Land	Planning
Power Stations	Landline
Quarries	Landline
Scrap Yard	Landline
Sewage Works	Landline
Slurry Lagoons	Landline
Spoil & Ash Tips	Landline
Yards	Landline
Landfill Site	Landline
Railway Land	Landline
Depot	Landline
Pollution Inventory	Environment Agency
Consent Discharges	Environment Agency
Sludge Disposal Sites	Yorkshire Water Doc's
IPC	Environment Agency
IPPC	Environment Agency

- 4.5.2 Geographical data of potential sources of contamination will be kept on the GIS regardless of any changes in current landuse. Any change in landuse such as the development of housing on a filling station will be recorded so both datasets remain on the system.. Potential site data will therefore be maintained within the system to allow for future changes in guidance of contaminated land and for any future change of use. If either occurs the remediated site may have to be revisited to ensure the site is fit for present use. In addition to this new legislation and/or guidance may come into force dictating greater conservative guideline values for contaminants warranting potential reinvestigation of some sites.

#### 4.6 Prioritisation of Landfill Sites

- 4.6.1 So far, the known landfill sites in the district have been prioritised using the CLARE software but it was recognised that the risk index did not fully reflect the actual perceived risk of the sites. For example the software does not account for type and age of fill, lined/unlined amongst other factors. Professional judgement has therefore been used to include the sites that are thought to be of the greatest risk within the ‘Top 20 Priority Sites’.
- 4.6.2 Landfill sites have been identified as high-risk sites due to their generally large size, adverse potential pollution affects to groundwater and the adverse affects on human health. These factors, and the fact that the prioritisation software did not fully characterise these aspects, necessitated their re-prioritisation for inspection outside the original prioritised list.

#### 4.7 Site Inspections & Investigations

- 4.7.1 With the site identification and prioritisation phases in place the Council’s next stage in the implementation of the strategy is the inspection and potential investigation of each site. The main procedures relating to this phase are set out in *Section 7* of the initial strategy. The procedural flow diagram (Appendix 4) has been produced as an addition and refinement of these original procedures.
- 4.7.2 A desk based review and site walkover guidance notes with standard layout have been included in Appendix 1 & 2. The main purpose of this guidance is to work towards a consistent and standardised approach. The guidance is not intended to be absolute and as such will have to be reviewed by the user to assess if they meet their individual requirements. No guidance has been produced for any site investigations due to the varied and complex nature of each particular investigation. Such investigations will be governed by the individual officer/consultant carrying out the work, current resources and the type of site to be investigated.
- 4.7.3 At present sites have been prioritised in terms of the source-pathway-receptor parameters evident within the CLARE software to generate an indicative risk index. Due to the lack of scope of the characterisation of potential sources within the software, further risk assessment will be carried out. This further characterisation of the site will be in line with the document ‘Desk reference guide to potentially contaminative land uses’. Sites are characterised in terms of their perceived risk into four categories listed below.

**Class A:** Intrusive investigation **strongly recommended;**

**Class B:** Intrusive investigation **recommended;**

**Class C:** Intrusive investigation **desirable;** and

**Class D:** Intrusive investigation **optional**

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An intrusive investigation will be carried out if the site falls into a 'A' or 'B' category while professional judgement will be used to assess whether such action is required for 'C' and 'D' sites. Such an intrusive investigation may take the form of indicative sampling rather than a full-scale investigation and this again will be down to the individual officer inspecting the site.

Where a site is not covered by the document professional judgement will be used to assess the likely categorisation of the site in question.

- 4.7.4 Where an appropriate person(s) can be found and a site has been identified for further investigation the landowner should be contacted to request a 'voluntary site investigation' where applicable i.e. commercial/industrial premises. Emphasis should be placed in any such communication that they are under no duty to do so but the council has powers to recover costs for any investigation work should the land in question be determined as contaminated land.

#### 4.8 Remediation

- 4.8.1 Should any land be designated as contaminated land then remediation of the land should be sought in accordance with section 7.10 to 7.12 of the original strategy, 2001. The standard of remediation should be in line with statutory guidance issued by the DETR Circular 02/2000 through either voluntary or enforcement action
- 4.8.2 Any notice or voluntary action of remediation of contaminated land should be in line with North Yorkshire County Council's Waste Minimisation Strategy and any policies therein. Remediation should be steered towards more sustainable methods such as in-situ & ex-situ technologies rather than the existent trend to dispose of materials at landfills.

#### 4.9 Future Strategy Reviews

- 4.9.1 This document is the first review of the initial strategy adopted by the council in August 2001. It is intended that the next review should be scheduled for October 2007 and every 3 years after this point.
- 4.9.2 A report will be compiled on a yearly basis to give an update on the implementation of the strategy. This is to be scheduled for October of each year.

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## **5 Site Inspections for Sites through the Planning Regime.**

5.1 In conjunction with the identification and remediation of contaminated land through enforcement under Part IIA it is understood that a large quantity of the sites will be regulated through the planning regime. Communication is therefore essential between the Contaminated Land Officer and the planning department to ensure that any redevelopment of brownfield land is subject to the relevant risk assessments and site investigations. The Planning Enforcement Officer should follow up non-compliance of any planning conditions relating to contaminated land with enforcement action. The following have been put into place to help implement this process.

- (1) the production of the Guidance for Developers (see Section 4.2);
- (2) the weekly review of planning applications for developments on potentially contaminated land;
- (3) the Contaminated Land Officer is now a Statutory Consultee for planning applications;
- (4) the production of updated standard planning conditions;
- (5) the recording of developments with outstanding planning conditions for compliance purposes;
- (6) the provision of spatial data relating to potential contaminated sites to the planning department.

5.2 Where sites that have been remediated through the planning regime prior to May 2003 any documentation pertaining to the investigation and remediation will be reviewed as part of the desktop study. Documentation will be assessed in terms of what information is present, the relevance of the data subject to current guidance and legislation, the application of approved and justifiable risk assessment and the confidence level of any remediation.

5.3 A decision will have to be made on any site that does not meet the approval of the reviewing officer as to whether an inspection and/or investigation will take place under Part IIA.

5.4 Where a site meets with the approval of the reviewing officer the site could be either deferred for further study at a later date or taken off the list and recorded as 'No Further Action'.

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## 6 Information Management

6.1 The central management of contaminated land information was identified in the initial strategy as imperative to its effective implementation. Two systems were envisaged to run side by side, CLARE to record factual data for sites and GIS to provide a geo-spatial reference for sites. The following points highlight progression and development of these systems.

### 6.2 Development of GIS

6.2.1 A licence for MapInfo Professional was obtained in April 2003 to allow geo-spatial data to be recorded for potential sources, pathways and receptors within the district. A report has been written on the “identification of contaminated land within the district” which goes into greater detail on the processes involved in the implementation of GIS. The main steps of developing this database were:

- (i) The classification and capturing of potential receptors (i.e. residential, schools etc);
- (ii) The capturing of potential sources by various sources of information and cross referencing;
- (iii) The purchasing of potential pathways information (i.e. Geological data from BGS);

6.2.2 A comprehensive list of all layers included within the database is demonstrated in Appendix 4. Information included in this table is the data set name and the source of the information.

6.2.3 The security and accuracy of data is maintained through two main measures:

- (i) All data sets are archived in a Main Server that is backed up regularly to ensure that the data is recoverable and safeguarded against loss, damage or corruption.
- (ii) Data sets apart from those that are controlled and updated by the Planning Dept can only be amended and updated by the Contaminated Land Officer.

6.2.4 As outlined in *Section 4.5* data within the GIS will be audited on a yearly basis to ensure that any changes in the source, pathway or receptors are updated within the system.

### 6.3 CLARE Database

6.3.1 All data relating to each site has been recorded and maintained within the above database. Any new data that is obtained shall be kept in the database to maintain its usefulness in implementing the strategy. Information may come directly to the council from voluntary remediation notices, through enforcement of Part IIA and through redevelopment of brownfield land. Data shall be kept in the database irrespective of the source of information, as the majority of the sites are likely to be remediated through the planning regime. It

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is important though to note that the two regimes are separate and as such information should be clearly identified as one or the other.

6.3.2 The database is to be used for referencing various documents associated with each site. It is expected that a large volume of information and data will be associated with some sites where the CLARE database is not designed to store large amount of data. To store large amounts of data such as the desktop studies; documents will be archived in Document Image Processing (DIP) and referenced in CLARE under the 'Reference Material' section. The main three areas of documentation will be referenced as follows:

- (i) Desk Based Reviews – CLM/\_\_\_\_/DS
- (ii) Visual Inspection – CLM/\_\_\_\_/VI
- (iii) Intrusive Investigation – CLM/\_\_\_\_/II

6.3.3 Documents will be indexed to one of the following five directories dependant on the classification of the site:

- (i) CLM Landfill Sites
- (ii) CLM MOD Land
- (iii) CLM Pollution Incident Sites
- (iv) CLM Filling Station Sites
- (v) CLM Other Sites

A desktop study for Monk Fryston Landfill site would therefore be found indexed as DIP/CLM Landfill Sites/CLM/0091/DS within the Reference Material section of the CLARE Database.

6.3.4 The operation and maintenance of the CLARE database and GIS system should provide the following aspects to the successful implementation of the contaminated land strategy:

- (i) an auditable system for reviewing and assessing contaminated land;
- (ii) the systematic entry and storage of data;
- (iii) A tool for the prioritisation of potentially contaminated sites;
- (iv) A secure storage and password access for information that is potentially sensitive;
- (v) A sustainable and updateable store of knowledge irrespective of personnel turnover;
- (vi) Accessible data for environmental information requests and information transfer.

#### 6.4 Information from Planning Control

6.4.1 A large amount of information is expected to be managed through the planning regime in relation to potentially contaminated sites in the area. Data and information will vary from bulky site reports to correspondence between departments.

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- 6.4.2 Relatively small documents and data pertaining to consultations etc are to be indexed in DIP in the CLM Planning Comments/feedback directory. The reference should in this case be the planning application number.
- 6.4.3 Larger documents such as site investigation reports will be filed within the planning file if it is the only copy or within the contaminated land files if a copy is available. At this point it is deemed unfeasible to scan these documents into DIP due to their large size and the inclusion of maps & plans in the majority of reports.
- 6.4.4 Any information that is deemed pertinent will be input into the CLARE database with a full referencing of documents to be indexed within the Reference Material Section.

#### 6.5 Site Walkover Documentation

As a large number of the sites will incur some level of inspection such as a walkover it is expected that a corresponding large volume of information will be collated over this phase of the strategy. In order to manage this information in a consistent and standardised way as highlighted in section 4.6 a form has been created in Microsoft Access. The form should initially be printed off to provide a hard copy for the recording of information in the field. Information should then be entered into the form back in the office so a digital copy is available for review and assessment. The database of forms can be accessed in the following directory djackson on `MKA\_serv` H:/Templates/Site Walkover.mdb.

#### 6.6 Positional Accuracy Improvement Programme

Ordnance Survey is at present improving the accuracy of their 1:2500 maps, which includes the Landline data that is used at Selby District Council. The effect of this will be a subsequent shift in the background data in certain tiles in Landline up to around 10m. The aim of this is to improve accuracy from +/- 2.4m to around +/- 1.1m. As a result data relating to contaminated land will be out of sync once the improved maps are used as background data. These datasets will have to be shifted in a corresponding manner so layers overlay each other with the desired accuracy. Due to the large amounts of data it is likely that software will have to be used so that the data can be shifted as a semi-automated process. A problem inherent with the data captured from overlaying the landline is that none of the data has been snapped to landline. Although this does not pose a problem at present, as those data sets are fairly accurate and suitable to aid the strategy, by 2006 when the updated accurate maps become available the software may not be able to shift the data in an accurate and coherent way. An ad-hoc programme of realignment is proposed to shift this data over the next two years. Once the tiles that are to be affected are established then these areas should be prioritised so that data that can be snapped to landline are completed first. A decision will then have to be made as to the other areas given the large amount of data and resource implications of the realignment.

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## 7 Environmental Information Requests

- 7.1 As councils are working towards their individual strategies under Part IIA of the EPA the requests for environmental information on areas of land is becoming increasingly prevalent. This is further compounded by the new IPPC regulations where permits are now being sought and Desk Based Reviews undertaken.
- 7.2 The public, solicitors, consultants, owners, estate agents, developers and any other interested parties will have access to this information under the Environmental Information Regulations(EIR), 1992. Exclusions to the provision of such data include where the data or information is deemed commercially confidential or where a report is in an unfinished state. Should contentious requests come forward then it will be the duty of the Contaminated Land Officer and Environmental Services Officer to make a summary judgement in conjunction with the Legal Department. Interpretative assessments undertaken by the council or its advisors during any phase of the strategy shall be deemed as confidential as any information will be considered as research. Only information where the site is included in the Public Register will be divulged to third parties.
- 7.3 Any information relating to land contamination through a planning application is within the public domain by virtue of the Town & Country Planning Act 1990.
- 7.4 Charges are levied for the provision of information at £74 for the minimum work of two hours inclusive of VAT. Subsequent work is charged at the hourly rate of £37 per hour. This amount will be reviewed from time to time along with other departmental charges and rates.
- 7.5 The disclosure of information regarding environmental issues can never be fully accurate and inherently some degree of uncertainty and inaccuracy will be evident in the provision of such data. As a precautionary measure the following liability clause was agreed by legal and adopted for the inclusion in any provision of information regarding the environment<sup>1</sup>.

**“The information supplied in this report represents the information presently held by the Council in response to your specific enquiry. The Council does not warrant the accuracy or sufficiency of the information for your purposes in relation to the site you have identified. Nor does the Council warrant that the information is relevant for any specific purposes you may have in mind in relation to the site. You are advised to undertake your own site and other investigations and to analyse the results of those investigations using competent specialist advisors. Within the context of this report no recommendations will be made with respect to the sustainability of the land for a specific purpose. The service will only be used to provide environmental information”<sup>1</sup>**

- 7.6 At present it is not policy to include a map of environmental factors within the response. Certain environmental information requests do though request such

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<sup>1</sup> The clause was adopted from the East Riding of Yorkshire Council

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graphical information and shall be provided, at present at no extra cost. The provision of any graphical information shall be subject to the following controls:

- (i) the map produced must conform to Ordnance Survey Copyright;
- (ii) the map sent by the external party must show enough information for the map to be produced without giving any more OS data than was initially supplied;
- (iii) the map should be the same scale as was originally supplied by the external party.

7.7 We will be objective to ensure that the provision of information will not be influenced by gender, ethnic origin, religious or political beliefs, or sexual preferences.

7.7.1 We will ensure that information is presented in a clear and understandable manner and in a form most suited to the situation (i.e. by phone, letter or meeting).

7.7.2 Responses to requests for environmental information will be in line with the EIR, 1992 regulations. As such a response should be sent to the requester within 20 working days or 40 working days should the council have to liaise with external parties.

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## 8 Funding

- 8.1 During the inspection/investigation phases of the strategy it is inherent that funding will be required for any capital costs incurred. Such costs will arise mainly from:
- (i) soil/water samples
  - (ii) site investigation work
  - (iii) remediation work that the council is liable for.

Present funding is limited and as such is likely to cover only any soil/water samples that need to be taken and any other costs associated with the effective implementation of the strategy. Funding for site investigations and remediation work is likely to be sought by the application for Contaminated Land: Capital Projects Grants governed by DEFRA.

- 8.2 Where liability for remedial action falls to a resident or commercial business, they are entitled to apply for 'Hardship'. Statutory guidance<sup>1</sup> issued by central government suggests that where an occupier of a dwelling did not know of the contamination at the time of purchase, then the "LA should consider a waiver or reduction of costs to the extent necessary to ensure they bear no more than is reasonable, having regards to income, capital and outgoing". The guidance also suggests a means tested approach analogous to that previously used for applications to housing renovation grants
- 8.3 If a hardship claim is upheld the cost or part of the cost of remediation would fall to the enforcing authority. Doing nothing may be both politically and legally unacceptable but at present no case law exists in this regard. In such cases where liability defaults through to us from hardship claims the council is eligible to apply for funding through central government capital project grants.

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## **9 Public Relations**

- 9.1 There are public relation issues to be taken into consideration when either recovering costs for either work in default or issuing remediation notices to members of the public. There may be potentially a great deal of negative press in being seen to recover substantial sums from private individuals who have had the misfortune to have bought a property sited on contaminated land. Promoting fairness, transparency and consistency through a PR strategy and a public policy on hardship could mitigate this.
- 9.2 An open and transparent strategy is proposed when dealing with the press where land is going to be formally determined as contaminated land. This should though be subject to clarification on an individual basis with the Press officer at the time.
- 9.3 A letter has been agreed as the initial point of contact requesting that an initial site visit is needed to properties potentially affected by contaminated land (see appendix 5). This letter includes a Q&A section addressing any queries that a resident may have.

## **10 Identification of Contaminated Land**

The identification stage has highlighted 1143 potential sites within Selby District at present subject to review and further work in this area. A separate report on the 'Identification of Potentially Contaminated Land within the District, October 2003' can be provided on request.

## **11 Prioritisation of Potential Sites**

The prioritisation of the above sites represented the next phase of the strategy and was completed in March 2004. A separate report on the 'Prioritisation of contaminated sites within the district, March 2004' can be provided on request

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## 12 Related Reports

Selby District Council – Contaminated Land Strategy, August 2001, CES

Selby District Council – The Identification of Potentially Contaminated Land within the District, October 2003, D Jackson.

Selby District Council – The Prioritisation of Contaminated Sites within the District, March 2004, D Jackson

## 13 Acknowledgements

Contaminated Land Management Ready Reference, Nathanail Bardos  
Nathanail, EPP Publications, June 2002 – For the site walkover field checklist

Elizabeth Jarvis – City of York Council – For the adaptation of the Desk Top Study (Appendix 3)

Desk reference guide to potentially contaminative land uses. Symms, ISVA publications (1998) – for the further site risk characterisation required.

## 14 Contact Details

Selby District Council  
Environmental Health  
Contaminated Land Officer  
Civic Centre  
Portholme Road  
SELBY  
YO8 4SB

Tel (01757) 292293

Fax (01757) 292109

Email: [envfeedback@selby.gov.uk](mailto:envfeedback@selby.gov.uk)

Website: [www.selby.gov.uk](http://www.selby.gov.uk)

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## 15 List of Consultees

- Environment Agency – Groundwater & Contaminated Land Section
- York City Council – Contaminated Land Officer
- North Yorkshire County Council – Minerals & Waste Planning Officer
- Selby Industrial Association
- North Yorkshire County Council – Heritage unit
  
- Legal Department
- Press Officer
- Planning Department
- Open Spaces Working Group
- Environmental Health
- Risk Management Team
- Building Control

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## 16 GLOSSARY

*BGS* – British Geological Survey

*CLARE* – Contaminated Land Risk Evaluator Database

*DIP* – Document Image Processing

*EPA* – Environmental Protection Act

*GIS* – Geographical Information System

*GQA* – General Quality Assessment of controlled waters

*IPC* – Integrated Pollution Control

*IPPC* – Integrated Pollution & Prevention Control

*NNR's* – National Nature Reserves designated by English Nature

*SAC's* – Special Areas of Conservation designated by English Nature

*SPA's* – Special Protection Areas designated by English Nature

*SPZ* – Source protection Zone for groundwater's

*SSSI's* – Sites of Special Scientific Interest

*SI* – Site Investigation

## **Appendix 1 - Site Walkover Guidance**

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## 1.0 INTRODUCTION

The inspection of a site is to be carried out after the desk top study information has been collated and prior to the design of an intrusive investigation. An inspection of this type involves a walkover of the site to meet the objectives set out below.

This inspection has been carried out in accordance with BS 10175:2001.

This report deals with the site at:

<Name>

<Address 1>

<Address 2>

<Town>

<Postcode>

The individual Contaminated Land Reference No assigned to the site is:

<Insert Reference Number here i.e. CLM/0001>

## 1.1 ASSESSMENT OBJECTIVES

The aims of this site inspection are as follows;

- Analyse the risk from migration of contaminants on to site from surrounding areas;
- Assess the findings in terms of risks to sensitive receptors;
- Provide recommendations for future site work, if deemed necessary.
- Validate information on the site collated in the desk top study
- Collect additional information on the site and surrounding area in terms of source-pathway-receptor.

## 1.2 WORK PROGRAMME

The scope of work for the site inspection was as follows;

- Assessment of Health & Safety issues prior to the visit
- Arrange access to the site
- To identify potential current sources of contamination and locations of possible remnant structures;
- Discussions with site personnel and/or site owners to obtain relevant information on current and historic site operations;
- To carry out limited sampling on the site

---

## **2.0 SITE WALKOVER**

### **2.1 SITE ACCESS ARRANGEMENT**

The landowner/site manager/company were contacted by letter on the ..... to arrange access to the site for the purposes of a site inspection. Access to the site was agreed for the ..... Arrangement has also been made for ..... to accompany myself on the visit.

### **2.2 HEALTH & SAFETY ISSUES**

It is essential that the safety and security of the officer visiting a site be ensured. An assessment of potential risks must therefore be made prior to the inspection of any site.

#### Risk Assessment

Hazards will vary greatly from site to site and it is therefore unfeasible to assess risks for every contingency prior to any inspection. A general risk assessment is therefore required to assess the likely risk evident on the majority of sites to some degree. Hazards that are likely to be encountered include physical hazards such as derelict buildings etc and from the exposure to contaminants that may be present on the site.

Should any specific hazards be identified prior to an inspection such as a derelict building/structure then a separate assessment of these risks should be undertaken on an adhoc basis. Additional equipment and possible consultations will have to carried out to effectively manage any additional risks identified.

As a measure to manage these risks to some degree the following safety precautions and procedures should be adhered to on every site inspection.

#### Safety Procedures

- Use PPE including overalls, safety footwear and hand protection if in contact with soil/fill/liquid.
  - Check for underground services with a CAT when using ground penetrating equipment
  - No eating, drinking or smoking on site
  - Ensure mobile telephone is on and charged
- Use Formal check-in procedure

### **2.3 DESCRIPTION OF THE SURROUNDING AREA**

<briefly describe the surrounding area in terms of the following>

- 
- neighbouring land use
  - potential receptors
  - potential sources of contamination
  - indications of remedial measures
  - indications of recent SI

## 2.4 DESCRIPTION OF THE SITE

<brief description of the site including the following>

- Confirm description in desk top study
- Current landuse
- Size of the site
- Description of main features & deviations from desk top study
- Description of rooms visited if any – contents, nature and use

<inc any pictures of the site here>

<reference pictures to a plan demonstrating where the pics were taken and what direction>

## 2.5 LOCATION OF ON SITE POSSIBLE CAUSES OF CONTAMINATION

<brief description of the possible sources of contamination evident from the site inspection inc>

<include pics of any of the following and reference on plan>

- Describe remaining building structures on site and nature of floor covering
- Describe processes used in each location
- List features suggesting current/former uses
- Fuel Storage Tanks – UST/AST – nature of contents, full/empty, banded/unbanded/leaking bund, staining.
- Raw materials stored on site
- Waste products stored on site
- Any outfalls to surface water
- Any small buildings with hazard signs

## 2.6 OTHER SITE FEATURES

- fences and other site security features
- Hydrological features

## 2.7 IMMEDIATE HAZARDS

- 
- public H & S hazards
  - Environmental hazards e.g. seeping oil

## 2.8 PRESENCE OF CONTAMINATION INDICATORS

<brief description of any of the following factors evident at the site>

<insert any photos here and reference on plan>

- surface deposits/made ground
- settlement/subsidence/disturbed ground or waterlogged areas
- stained ground/strange colour
- highly coloured soil/deposits
- Polluted water/gas bubbling through the water
- Areas of bare ground distressed vegetation
- Lack of species diversity
- Evidence of gas production/steam emanating from the ground

---

### **3.0 PRELIMINARY GROUND INVESTIGATION**

#### **3.1 SAMPLING STRATEGY**

##### **3.1.1 Chemical Testing Strategy**

The chemical testing suite was designed to target contaminants identified by the desktop study to be of particular concern and association with such sites.

Input any other information relating to the strategy such as contaminants not tested for identified by the desk study and the reasoning. Also any additional chemical testing carried out.

##### **3.1.2 Soil Sampling Strategy**

Samples should be collected in accordance with the code of practice BS10175:2001. Precautions have been taken to ensure that the sample taken are an accurate representation of the soil as it lay in-situ and all possible efforts have been made to eliminate cross contamination or changes from sampling to analysis. Insert any additional precautionary measures such as trip/field blanks, split samples, use of different labs etc.

-Explain whether samples were taken due to a targeted or non-targeted strategy

-Explain any zoning of the site

-Reference to an appendix as to plan of samples.

-Sampling depths and justifications

-Types of sampling considered appropriate i.e. Gas, soil, water, pH.

#### **3.2 LABORATORY RESULTS**

The samples were sent to **Insert Lab** for analysis on the **[insert date(s)]** which is UKAS accredited. Results can be located in Appendix 4.

#### **3.3 ASSESSMENT METHODOLOGY**

The methodologies outlined below relate to the risk assessment for **soil, gas, leachate and water [delete as necessary]** contamination at the site

Current guidance and legislation acknowledges the need for tiered risk based approach to the assessment of contamination. The two levels of assessment are as follows:

Tier 1 – Comparison of site contaminant levels against generic guideline values

Tier 2 – Derivation of Site Specific risk assessment, which constitutes a more Detailed Quantitative Risk assessment (DQRA)

---

[Input which level of RA has been carried out as part of this preliminary investigation and for which contaminant matrices]

### 3.3.1 Soil

#### *Soil Guideline Values*

To date, Soil Guideline Values (SGV's) have been derived using the CLEA methodology for arsenic, cadmium, chromium, lead, mercury, nickel and selenium. In addition to this tox data has been published for inorganic cyanide, benzo(a)pyrene, naphthalene, 1,1,1 trichloroethane, tetrachloroethane, vinyl chloride, ethyl benzene and toluene.

These values represent the *Tier 1* SGV's for three standard land uses: residential, commercial/industrial and allotments. The land use for this particular site is considered to be [input land use].

#### *CLEA Methodology*

The CLEA model has been published to assess chronic risks to human health from the contaminants identified above. The premise behind the model is that the entire data set is compared to the guideline values using the mean value test and the maximum value test<sup>1</sup>.

Any contaminants covered by the CLEA model and subsequent SGV's have been used as a Tier 1 risk assessment for this site.

[Input any averaging areas used as part of the risk assessment]

[Input any Tier 2 RA undertaken and there methodologies, fully reference them and input DQRA in a appendix]

#### *Non CLEA Risk Assessment*

Where no SGV or tox data is available for particular determinants a DQRA will be carried out. An alternative Tier 1 assessment criteria may be used where applicable, which is fully justified and within the current UK framework of contaminated land legislation and guidance.

[Input any methodology used for this site within this section]

### 3.3.2 Water

Samples taken from controlled waters or leachate from soils will be compared against the following guidance criteria, in order of priority, to assess the significance of any determinant.

---

<sup>1</sup> Refer to CLR 7 Report published by DEFRA.

- 
- Environmental quality Standards, Dangerous Substance Directive (EQS)
  - The Water Supply (Water Quality) Regulations: 2001 (WQS)

[Input any methodology used for this site within this section]

### 3.3.3 Hazardous Gas

Where hazardous gas such as CH<sub>4</sub>, CO<sub>2</sub> and CO has been identified as a potential risk through the desktop study preliminary sampling will be undertaken with a Landfill Gas Monitor.

Levels of gases will be compared against current guidance relevant to the UK outlined in CIRIA 152 Report<sup>2</sup> and Wilson & Card Report<sup>3</sup>.

## 3.4 ANALYSIS & STATISTICAL TEST RESULTS

[Insert Table of Results for any parameters tested for]

[Discussion of results and any findings of significance]

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<sup>2</sup> CIRIA 152: Risk assessment for methane and other gases from the ground

<sup>3</sup> Card Geotechnics: Reliability and risk in gas protection design

## 4.0 INTERPRATION

### 4.1 CONCEPTUAL SITE MODEL (CSM)

√ = Initial CSM Pollutant Linkage

√ = Revised CSM Significant Pollutant Linkage

Source	Pathway	Receptor	Linkage
<b>Human Health</b>			
Contaminant	direct ingestion of soil	Human Health	
Contaminant	dermal absorption	Human Health	
Contaminant	direct ingestion of indoor dust	Human Health	
Contaminant	direct ingestion of outdoor dust	Human Health	
Contaminant	direct ingestion of contaminated water	Human Health	
Contaminant	inhalation of vapours outdoors	Human Health	
Contaminant	inhalation of vapours indoors	Human Health	
Contaminant	inhalation of dust	Human Health	
Contaminant	indirect ingestion via home grown vegetables	Human Health	
Contaminant	direct ingestion of soil attached to vegetables	Human Health	
<b>Controlled Waters</b>			
Contaminant	horizontal migration through ground	Surface water	
Contaminant	vertical migration through the ground	Groundwater	
<b>Ecology</b>			
Contaminant	horizontal migration through ground	Ecological System	
Contaminant	vertical migration through the ground	Ecological System	
<b>Property</b>			
Contaminant	horizontal migration through ground	Livestock	
Contaminant	horizontal migration through ground	Structural property	
Contaminant	vertical migration through the ground	Structural property	

### 4.2 PRELIMINARY RISK ASSESSMENT

<assess each pollutant linkage in turn and briefly describe its feasibility at this site based on the information gathered within the desk study report, where insufficient information is available records may need to be revisited and the report amended. If no information can be found this needs to be stated under the relevant pollutant linkage number and flagged as potential concern based on insufficient information. Give an estimation of the likelihood, nature and extent of exposure to a hazard and the degree of risk perceived by the significant pollutant linkages.

Where none standard linkages are present these should be detailed here and highlighted as none standard but described in the same way as above>

---

## 5.0 RECOMENDATIONS

The desk study and site inspection has identified the potential for the following pollutant linkages to be present on this site, these are detailed above in the sites conceptual model. Based on this preliminary investigation it is recommended that...

OR

The preliminary investigation has demonstrated that there are no potential pollutant linkages present on this site. This is due to...

---

## **6.0 INFORMATION FOR PLANNING A SITE INVESTIGATION**

### **6.1 SERVICES ON SITE**

<input any results from the CAT monitor and confirm or add to service plan produced in the desk top study>

### **6.2 SITE INVESTIGATION CONSTRAINTS**

<describe any constraints to a site investigation inc the following>

- Problems with site access
- Areas unsuitable for S I
- Steep slopes/vegetation
- Old mine shafts etc
- No electricity
- Decaying/demolished structures

### **6.3 ON SITE CHEMICAL HAZARDS**

<describe any chemical hazards on site inc the following>

- Gases/volatiles
- Likely contaminants
- Asbestos

### **6.4 ENVIRONMENTAL IMPACTS OF SITE INVESTIGATION**

<briefly describe any environmental impacts a site investigation may have inc the following>

- entry of contaminants into groundwater
- damage to sensitive ecology
- entry of contaminant into surface water bodies
- noise
- dust
- odour

## **Appendix 2 – Desk Based Review Guidance**

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## 1.0 INTRODUCTION

Selby District Council produced and adopted its contaminated land strategy in August 2001. This strategy was produced in line with the councils statutory duty to produce and publish a strategic approach to the investigation, and where necessary the remediation, of contaminated land under Part IIA of the Environmental Protection Act (EPA) 1990.

The contaminated land strategy detailed the order in which areas will be inspected and how the information gathered would be prioritised and reported. The revised strategy has been produced in April 2004 as requirement to readdress the strategy and its implementation. This report details current site conditions, review of historic site uses, contaminants associated with these activities and recommendations for further action if required. The study has been complied and carried out in accordance with BS 10175:2001.

This report deals with the **site** at:

<Name>  
<Address 1>  
<Address 2>  
<Town>  
<Postcode>

The individual Contaminated Land Reference No assigned to the site is:

<Insert Reference Number here i.e. CLM/0001>

The **former** use of this site as a **landfill** has the potential to have caused contamination. This report considers the potential for this contamination to impact any of the receptors identified in the statutory guidance<sup>1</sup> and hence, will consider the presence of possible significant pollutant linkages.

### 1.1 ASSESSMENT OBJECTIVES

The aims of this desk study are as follows;

- Assess the risk of ground contamination by current and historic site activities and if possible identify the types of contaminants that may be present;
- Analyse the risk from migration of contaminants on to site from surrounding areas;
- Assess the findings in terms of risks to sensitive receptors;
- Provide recommendations for future site work, if deemed necessary.

### 1.2 WORK PROGRAMME

The scope of work for the desk study was as follows;

---

<sup>1</sup> DETR 2000 Circular 02/2000, Annex A

- 
- Site walkover to identify potential current sources of contamination and locations of possible remnant structures;
  - Discussions with site personnel and/or site owners to obtain relevant information on current and historic site operations;
  - Review of planning records;
  - Review of historical maps and records from the library and NYCC archives;
  - Review of geological and hydrogeological records from the BGS datasets within GIS
  - Correspondence with, and review of, site specific information provided by the Environment Agency and where appropriate English Nature;
  - Review of site specific information provided by internal sources.

## 2.0 DOCUMENTARY RESEARCH

### 2.1 SITE LOCATION AND HISTORY

#### 2.1.1 Site Location

The site covers an area of approximately \*\*\*\* and is located to the north/east/south/west of Selby. The site is bound by \*\*\*\*Access can be gained via \*\*\*\*

The approximate National Grid Reference for the site is 4\*\*\*\*, 4\*\*\*\*. The location of the site may be seen in Appendix A.

#### 2.1.2 Review of site history from historic maps and local records

Year	Description of site

< insert brief details of the site from each of the historic maps held in MapInfo GIS, insert more columns to the table as required >

#### 2.1.3 Potential Receptors

- current & intended users
- trespassers
- surface waters
- groundwater's
- water abstractions within 1 km
- property

#### 2.1.4 Mining Activity

Presence of any mining activity – consult coal authority

#### 2.1.5 Site Inspections Constraints

- Note any:
- access or height restrictions
  - underground services or obstructions
  - noise
  - working hours etc

#### 2.1.6 Review of Sites Planning History

The Council hold records on all previous planning decisions from 1977. Records of sites that were developed prior to this date may either be missing or incomplete. However, all available records and decision notices have been reviewed for relevant data and conditions relating to contaminated land. This has been summarised below.

Date	Summary of planning record / contaminated land conditions on decision notice.

< insert only details relating to contaminated land from the planning record relating to changes of use on the site. If no information can be found this should be stated >

### 2.1.7 Review of previous reports

<summarise findings of any previous site investigations and remedial actions taken >

## 2.2 SITE USAGE & CONTAMINATION

Details of the past and current usage's of the site together with information on spills etc should be collated.

### 2.2.1 Current Site Usage Potential Contamination

Consult – CLR3  
- Industry Profiles

### 2.2.2 Previous Site Usage Potential Contamination

### 2.2.3 Other Causes of Potential Contamination

- spills/leaks from tanks, pipes and drains (UST/AST)
- any stockpiling/landfilling
- demolition of structures and potential burial
- importation of contaminated fill material

### 2.2.4 Hazards and toxicity of suspected contaminants

#### Acidity

A particularly low pH <insert what this can be associated with>, may cause mild to considerable tissue damage when in contact with humans and other

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forms of animal and plant life. Acidity also exacerbates the effects of other types of contaminants, examples of which are as follows;

- Enhancement of heavy metal mobilisation making some metals more available to plant uptake through capillary action; and
- Further aggravation of sulphate reaction with concrete (in buildings)

#### Asbestos

Asbestos is a very stable and persistent naturally occurring fibrous silicate with four basic sub-groups;

- Crocidolite (blue asbestos)
- Amosite (brown asbestos)
- Chrysotile (white asbestos)
- Anthrophyllite

Primary routes to humans are through direct inhalation of asbestos dust and fibres that can lead to a number of terminal respiratory diseases such as bronchial cancer and mesothelioma. There is no safe exposure limit to asbestos. Primary sources include asbestos roofs in a poor state of repair collapsing to ground level creating fibre liberation at break, asbestos lagged pipes and boilers. All asbestos material to be disposed of is classed as special waste in the Special Waste Regulations 1996.

#### Mineral oils

Mineral oils can generally be classed as oil and grease and are distillates produced from crude oil which are insoluble in water. Additives in mineral oils include phenols, compounds of chlorine and organo-metallic compounds.

Mineral oils cause both acute and chronic effects following ingestion. Short term effects can generally be classed as irritation to the digestive tract. Prolonged and repeated exposure can lead to the defatting of skin, irritation and severe dermatitis.

#### Diesel fuel/oil

The primary exposure route to diesel is through inhalation of vapours which can cause headache and stupor. Ingestion causes irritation of the stomach and intestines with associated nausea and vomiting.

#### Gasoline

Gasoline is one of the lighter fractions of petroleum with a carbon number between 6 and 11. It is highly volatile and is readily absorbed through the skin. Spillage's will evaporate rapidly.

#### Polyaromatic Hydrocarbons (PAH's)

Often associated with the storage of hydrocarbons, many PAH's are carcinogenic in conjunction with the skin, lip, larynx and lungs. Higher concentrations of PAH's may render the ground aggressive which becomes especially significant if plastic service pipes (highest risk to potable water supply) are in the area of contamination.

#### Polychlorinated Biphenyls (PCB's)

Used in pre 1974 transformers in dielectric fluids, PCB's are of increasing toxicity relative to the degree of chlorination. Acute symptoms of PCB poisoning are irritation of the respiratory tract leading to coughing and shortness of breath. Nausea, vomiting and abdominal pain are caused by ingestion of PCB's.

#### Methane/carbon dioxide

Both gases are associated with organic fill. Carbon dioxide is toxic and may cause asphyxiation on inhalation, often occurring with little warning of its presence even at high concentrations.

Methane is also an asphyxiant due to oxygen displacement in its presence. In confined spaces methane is explosive, with flammable limits of 5 – 15% in air.

#### Creosote

Creosote is a liquid mixture of phenols obtained by distilling tar. Although PAH's constitute a large percentage of creosote its mobility is often hindered. Phenolic, nitrogen, sulphur and oxygen compounds present in smaller concentrations in creosote pose the highest threat of contamination in groundwater.

#### Metals

Metals that may be present on site include;

**Arsenic:** Toxic to humans when inhaled and ingested in sufficient quantities. A skin irritant in dust form, causing inflammation and ulceration. Arsenic and its compounds are carcinogenic and can cause chronic and acute poisoning which affects the central nervous system.

**Cadmium:** A poison by ingestion or inhalation and in sufficient concentrations can cause rapid death. Toxic to humans and accumulation and retention can lead to metabolic disturbances, kidney damage and the development of prostate cancer.

**Chromium:** Chromate's are known to be carcinogenic and frequent exposure to the skin can cause ulceration. Irritation of the respiratory tract has also been recorded following inhalation of contaminated dust.

**Nickel:** Inhalation of nickel can result in chronic bronchitis, emphysema, asthma and lung cancer. By ingestion, nickel has been associated with reduced body weight and reproductive and foetotoxic effects and dermal exposure can lead to allergic contact dermatitis.

**Lead:** Toxic to humans and can lead to anaemia, digestive disorders and considerable damage to the central nervous system. A cumulative poison by inhalation and ingestion.

**Mercury:** Another metal, which, by ingestion or inhalation, affects the central nervous system. No evidence has been found that it can be absorbed through the plant chain.

**Copper, zinc and boron:** Of no particular hazard to humans but are known to significantly affect plant growth, particularly in acid soils.

#### Explosive residues

Contaminants associated with ordnance demolition or testing will include traces of residual energetic material and ash which may contain organic and heavy metal residues. These are likely to migrate into the soil and the more soluble have the potential to contaminate groundwater. Any demolition processes will also have the potential to release toxic gas mixtures.

Semi volatile organic compounds (SVOC's)/Volatile organic compounds (VOC's) The groups contain various compounds. Examples of SVOC's being phenol, fluorine; VOC's include benzene, chloroform and toluene. As the names indicate substances included within the group VOC's are highly volatile, much more so than those included within the SVOC's section. Both groups of chemicals are readily absorbed through skin and some, such as benzene, are believed to be linked to tumour growth.

### 2.2.5 Risk Based Classification of Land Uses

Contaminative land uses have been divided into four categories A - D, which provide advice on investigation techniques. Class A suggests that an intrusive investigation is highly recommended, and Class D suggests that an intrusive investigation is optional. Table 1 highlights how the land uses on and around the site under investigation have been categorised.

Table 1: Land uses at and close to the site, and their proposed risk category.

Class	Hazard Rank	Land Use Classification	Index of Perceived Risk	Perceived Risk Category

<add to table as necessary>

Source: (Syms, 1998)

The index of perceived risk is intended to represent the potential for contaminative substances to be present at a concentration, which will require remedial action, with 1 representing certainty.

The perceived risk category is intended to indicate the likelihood of contaminative substances being present at concentrations that will result in significant harm being caused. The ranking and index weighting accorded to each land use classification are based on perceived risk, it does not necessarily mean that all sites used for the purpose indicated will suffer from that degree of contamination.

<insert a brief description of the risk categories and whether or not a SI is recommended>

---

## 2.3 GEOLOGY

### 2.3.1 Geology

The British Geological Society 1:50 000 Solid and Drift dataset within GIS shows the site to be underlain by <insert main drift geology for the area and approximate depths>

Underlying the <insert drift geology from above described for area> is <insert solid geology>. This achieves a maximum thickness of <insert depth of sandstone for area>m in the area.

The <insert main drift for the area from above> is overlain by <insert details of the superficial deposits overlying main drift>. These are shown <describe distribution of superficial drift>.

### 2.3.2 Hydrogeology

The BGS Groundwater Vulnerability Map dataset within GIS, identified the geology below the area to be a major/minor/non <delete as appropriate> aquifer.

<insert any details gained from site investigations regarding groundwater level on the site and the nature of the material it was encountered in>

### 2.3.3 Hydrology

<insert a brief description of the closest surface water features and their proximity to the site, this should also include ponds>

## **2.4 ECOLOGY & ARCHAEOLOGY**

### **2.4.1 Ecology**

<insert details of any conservation areas within 250m of the site and detail their status>

### **2.4.2 Areas of Archaeological Importance**

<insert details of any areas of archaeological importance and/or scheduled ancient monuments as detailed in Annex of Circular 02/2000>

---

### **3.0 CONSULTATIONS**

#### **3.1 Environment Agency**

As part of the consultation process the environment agency were contacted to provide us with any site-specific information or data they may hold. This was via the standard form SOCL/LA/FORM1 for exchange of information between the EA and local authorities. A summary of the reply from the EA is provided below.

<review of information sent by the EA>

#### **3.2 Petroleum Officer**

Where there is a likelihood that fuel storage tanks exist or existed at a site the local Petroleum Officer will be consulted to request any information on the specific site. A summary of the response is provided below.

<review of information sent by the Petroleum Officer>

or

<state that no consultation was undertaken as.....>

#### **3.3 Coal Authority**

For larger sites such as landfills a report will be obtained from the coal authority in regards to coal mining activity associated with the immediate area. The pertinent features of the report are described below.

<describe features>

or

<state that no report was obtained as.....>

## 4.0 INITIAL CONCEPTUAL SITE MODEL (CSM)

Land cannot be designated contaminated unless there is at least one complete pollutant linkage on site. This section will identify all possible pollutant linkages for the site and highlight those, which are considered to be potentially significant. The information gathered and reported to date can then be used to form a conceptual model for the site.

Inactive pollutant linkage = x  
 Potential pollutant linkages = √

Source	Pathway	Receptor	Linkage
<b>Human Health</b>			
Contaminant	direct ingestion of soil	Human Health	
Contaminant	dermal absorption	Human Health	
Contaminant	direct ingestion of indoor dust	Human Health	
Contaminant	direct ingestion of outdoor dust	Human Health	
Contaminant	direct ingestion of contaminated water	Human Health	
Contaminant	inhalation of vapours outdoors	Human Health	
Contaminant	inhalation of vapours indoors	Human Health	
Contaminant	inhalation of dust	Human Health	
Contaminant	indirect ingestion via home grown vegetables	Human Health	
Contaminant	direct ingestion of soil attached to vegetables	Human Health	
<b>Controlled Waters</b>			
Contaminant	horizontal migration through ground	Surface water	
Contaminant	vertical migration through the ground	Groundwater	
<b>Ecology</b>			
Contaminant	horizontal migration through ground	Ecological System	
Contaminant	vertical migration through the ground	Ecological System	
<b>Property</b>			
Contaminant	horizontal migration through ground	Livestock	
Contaminant	horizontal migration through ground	Structural property	
Contaminant	vertical migration through the ground	Structural property	

---

## 5.0 RECOMENDATIONS

The desk study has identified the need for an inspection of the site that is to be carried out in due course.

**OR**

The desk study has demonstrated that there is no requirement for a site inspection as.... the site is fully developed and meets the requirements of current guidance and legislation pertaining to contaminated land.

## **Appendix 3 - Layers within GIS**

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**CONTAMINATION SOURCES**

<b>GIS LAYER</b>	<b>SOURCE OF DATA</b>
Electrical Sub Stations	Contaminated Land GIS
Depot	Contaminated Land GIS
Garage	Contaminated Land GIS
Factories	Contaminated Land GIS
Works	Contaminated Land GIS
Disused Pits	Contaminated Land GIS
Quarries	Contaminated Land GIS
Animal Works	Contaminated Land GIS
Sewage Works	Contaminated Land GIS
1980's Landuse	Contaminated Land GIS
1950's Landuse	Contaminated Land GIS
1910's Landuse	Contaminated Land GIS
1850's Landuse	Contaminated Land GIS
Airfields	Contaminated Land GIS
Colliery	Contaminated Land GIS
MOD	Contaminated Land GIS
Power Stations	Contaminated Land GIS
Scrap Yard	Contaminated Land GIS
Slurry Lagoons	Contaminated Land GIS
Ash Tips	Contaminated Land GIS
Trade Directory	Contaminated Land GIS
Landfill Sites	Contaminated Land GIS
Yards	Contaminated Land GIS
Railway Land	Contaminated Land GIS
Agricultural Land	Contaminated Land GIS
Consent Discharges	Environment Agency
IPC Authorised Locations	Environment Agency
IPPC Authorised Locations	Environment Agency
Licensed Sewage Treatment	Environment Agency
Waste Management Licence	Environment Agency
Tanks	Environment Agency
Pollution Inventory	Environment Agency

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**CONTAMINANT PATHWAYS**

<b>GIS LAYER</b>	<b>SOURCE OF DATA</b>
Boreholes	BGS
Waterwells	BGS
Catchment Boundaries	Environment Agency
Drift Thickness	BGS

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Drift Geology	BGS
Artificial Geology	BGS
Mass Movement Geology	BGS
Fault Lines	BGS
Artificial Permeability	BGS
Drift Permeability	BGS
Mass Movement Permeability	BGS
Solid Geology	BGS
Solid Permeability	BGS

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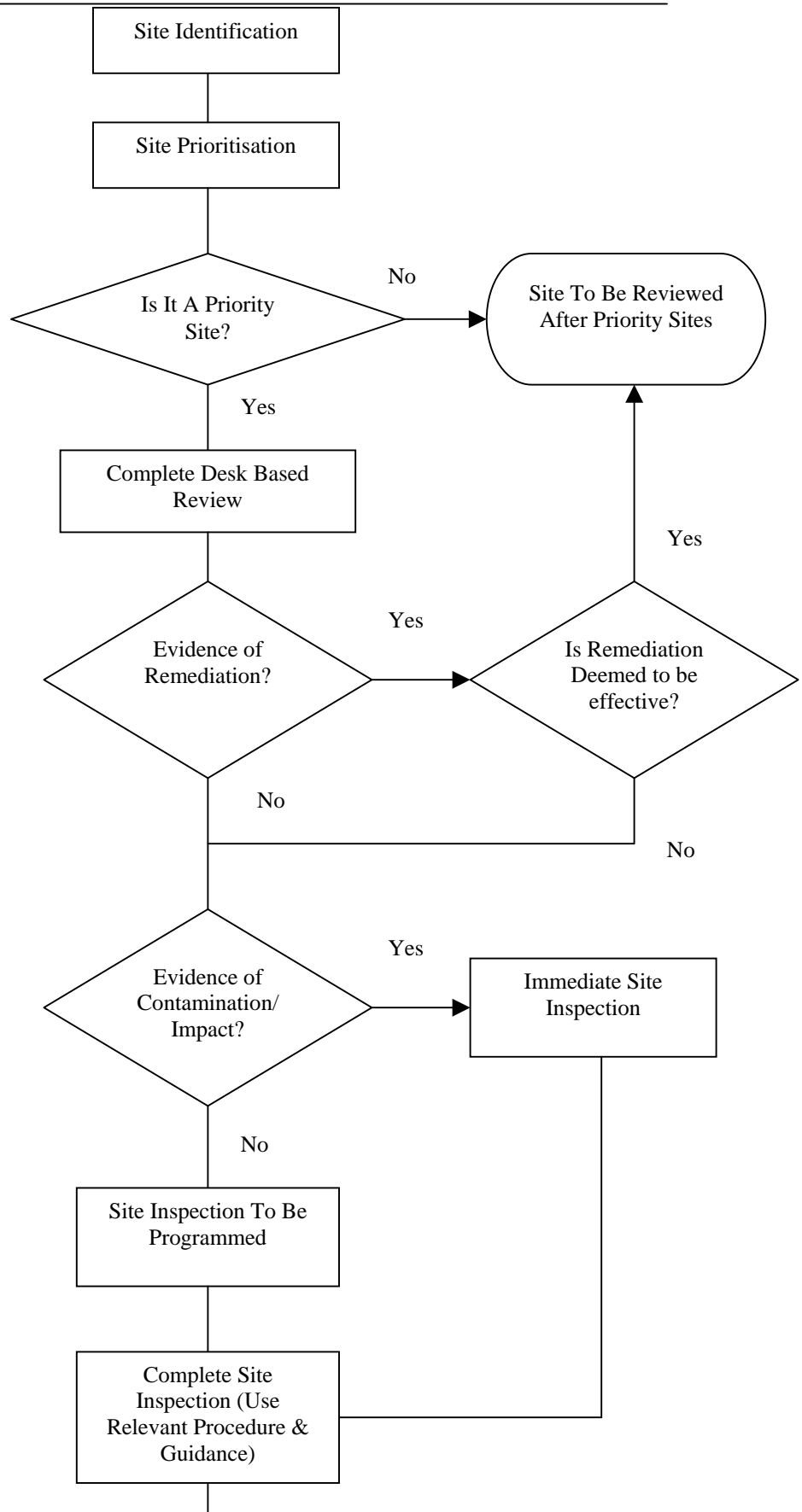
## POTENTIAL RECEPTORS

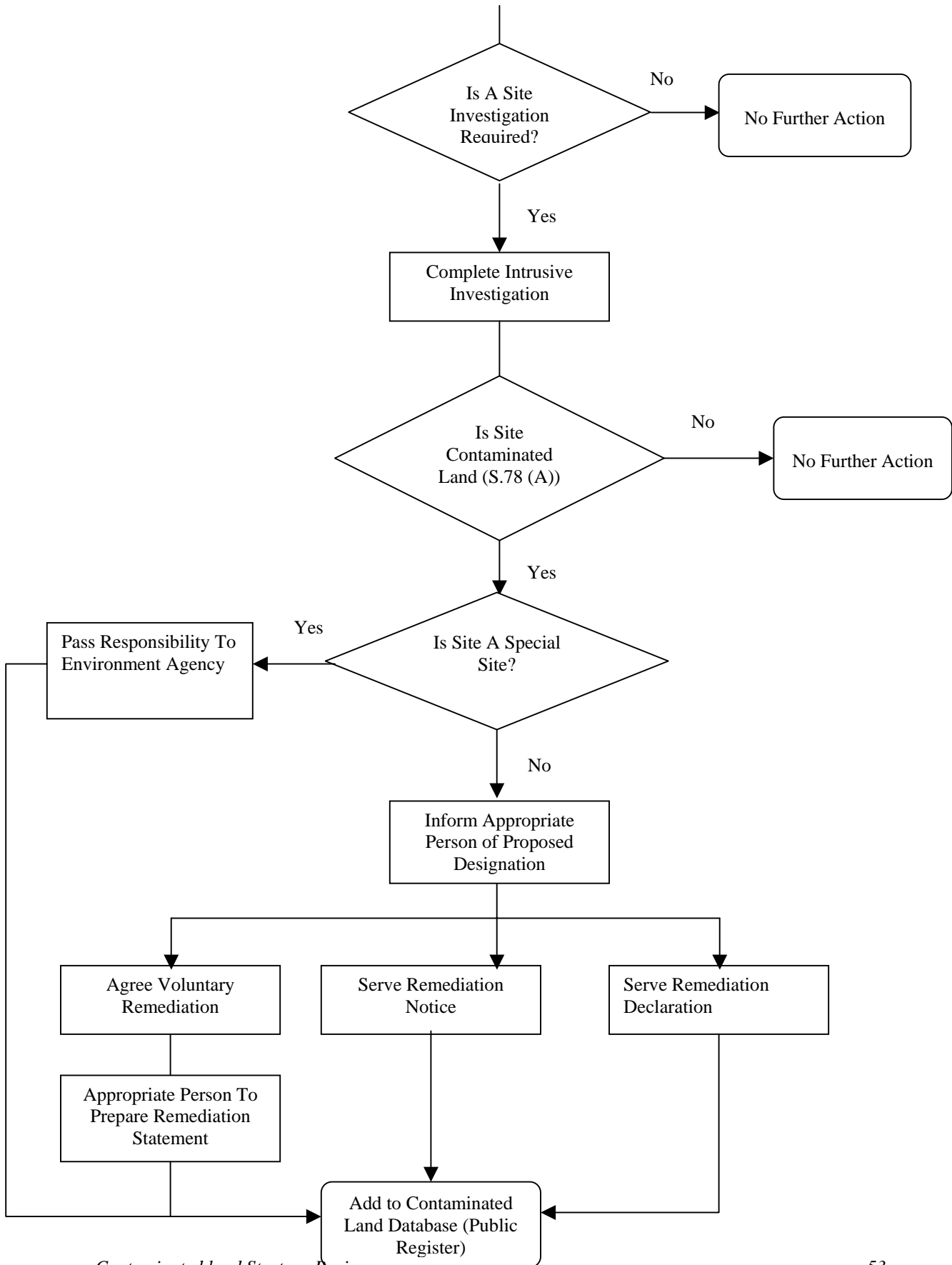
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GIS LAYER	SOURCE OF DATA
Allotments	Contaminated Land GIS
Ancient Monument's	Planning
Ancient Woodland	English Nature
Commercial services	Contaminated Land GIS
Conservation Areas	Planning
Education	Contaminated Land GIS
SSSI's	English Nature
Green Belt	Planning
Groundwater Vulnerability	Environment Agency
Historic Parks & Gardens	Planning
Listed Buildings	Planning
National Nature Reserves	English Nature
Nitrate Vulnerability Zones	DEFRA
Nursery	Contaminated Land GIS
RAMSAR	English Nature
Recreational Open Space	Planning
Residential	Contaminated Land GIS
Source Protection Zones	Environment Agency
Special Area Conservation	English Nature
Special Protection Area	English Nature
Water Abstractions	Environment Agency

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**Appendix 4 – Flow Chart of Procedures for Site  
Inspections/Investigations**





**Appendix 5 – Residential Site Visit Letter**

Dear Sir/Madam,

**Environmental Protection Act 1990 (Part IIA)**

As part of a national government programme, Selby District Council is currently carrying out a review of potentially contaminated land sites across the area. This work is part of an initiative to assess any potential risks to human health and the environment, and to take action, should there be any cause for concern.

Selby District Council has been working on the identification of such land for the past two years and is now in the process of inspecting sites across the district.

At this point we are currently considering approximately 1,200 potentially contaminated sites within the district, but we expect that there will be no issue with a large number of these. Your property is situated on, or near, one of the 1,200 sites, so we would like to carry out some tests on your land. The tests are for analysis only, and we expect, in the vast majority of cases, that there will be no issue.

In order to carry out our investigations, we need to make arrangements to visit your property. The type of analysis we will need to undertake is a visual examination of the soil and vegetation, and in some cases we may have to take soil samples.

I should be pleased if you would be kind enough to contact me within seven days to make an appointment for a visit.

As I am sure you have many questions relating to the above we have attached a Question & Answer sheet to this letter for you to have a look at. Should you have any other questions not answered in the Q&A please do not hesitate to contact me.

I hope that I can rely on your co-operation in this matter and look forward to meeting you.

Yours faithfully

David Jackson  
Contaminated Land Officer  
Environmental Services

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## Q & A

### Why now?

The effects of contaminated land has only recently been recognised as a potential risk to human health and the environment has only recently being highlighted as a potentially unacceptable risk. Statutory guidance was issued from central government in 2000 giving local authorities the powers to write and implement a formal strategy. The strategy was written and adopted by Selby District Council in August 2001 and since then a great deal of effort has been placed into identifying potentially contaminated sites and prioritising the sites in terms of their potential risk. We have now reached the point where we are inspecting sites to assess any potential contamination.

### Why have you contacted me?

Your property is in an area that we have identified as possibly having an issue with contamination. Until we carry out further tests, however, we cannot know for sure. We expect the vast majority of sites that we visit to have no issue with contamination, but in order to meet new government guidelines we must inspect any sites that we think may have any issue, however slight, with contamination.

### How will I know if my land is contaminated?

Levels of contamination on your land would have to be at such a degree that it is deemed harmful to yourselves or the environment for the land to be deemed contaminated. In most cases, we expect there will be no issue with the properties that we visit. In the unlikely event, however, that harmful levels of contamination are found; it is in your interests and the interests of the community for action to be taken. That is why we are carrying out these tests.

### What is contaminated land?

Contaminated land is any land where unacceptable levels of a harmful substance (s) are present within the ground in an area where people live or work.

### When will we be contacted about this further work?

In that case, after a date has been agreed for the council to visit your property for the initial inspection it may be that no issues are identified and that the visiting officer considers the site fit for present use. As such no further action would be taken, and a letter will be sent to you and other interested parties clarifying this. This should take no longer than one week.

Should soil samples need to be taken, results will be back from the laboratory within ten days. In addition to this, data will have to be analysed and recommendations proposed for any potential

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investigation work. This should take no longer than one month. The officer in charge of the inspection will keep you fully up-to-date about what is happening at every stage.

Will it cost me anything?

The site inspection and any investigation work will be carried out at the Council or Central Government's expense. Any work that is deemed necessary to make the site safe will be at the first instance carried out by the person (s) responsible for the contamination. This is in line with the "polluter pays" principle. Such work could be sought on a voluntary or enforced basis. Should such a liable party not be found then the landowner(s) could be liable for the remediation of the site.

Could this affect my health?

Safeguarding the health of residents is the Council's primary objective in this work. The majority of sites we visit we do not expect there to be any issues with contamination, however, in the unlikely event that we do find something, we will ensure that the site is fully cleaned in order to safeguard the health of residents.