

Dealing with land contamination in West Suffolk

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EXECUTIVE SUMMARY

West Suffolk is generally fortunate to have experienced relatively little historical land use which has led to land becoming so damaged that it may pose a serious threat to our health or the environment. However, nationally land contamination presents its own threats to sustainable development by denying local people a clean and healthy environment, preventing prudent use of land and soil resources, and placing a high cost burden on individuals and organisations that have to clean up pollution.

The Councils of Forest Heath and St Edmundsbury each have a responsibility for regulating land contamination in their administrative areas under Part 2A of the Environmental Protection Act 1990 (EPA) introduced in 2000. To carry out their responsibilities the Councils have decided to publish a shared Strategy setting out how this will be accomplished.

This shared Strategy reflects the work that we have undertaken since originally publishing our original strategies in 2001, publication of the Government's revised statutory guidance on contaminated land in 2012, and the ensuing change of circumstances brought about by both authorities entering into the shared services partnership known as West Suffolk.

This Strategy forms part of a framework affecting the quality and use of land in West Suffolk. It follows the principles of sustainability to protect and improve human health and the local environment.

The contaminated land regime is based on two principles:

- Making the polluter pay; and
- Securing a standard of remediation, or clean-up, which is fit for the current land use.

We are committed to avoiding potential blighting of land and to addressing concerns sensitively, responsibly and promptly.

Overall, our aim is to ensure that no land within West Suffolk will give rise to significant harm, to either human health or the wider environment, due to contamination.

In preparing the Strategy, we have tried to take account of the views of those with an interest in contaminated land. Comments are invited on the Strategy.

Introduction

Legislation concerning contaminated land was introduced by the Environmental Protection Act 1990 (EPA) on 1st April 2000. The introduction of the 'Part 2A' legislation by Section 57 of the Environment Act 1995 established a regulatory system for the identification and remediation of contaminated land, for which local authorities have been required to produce a written Strategy setting out how this should be accomplished.

Purpose of the Strategy

This Strategy outlines how contaminated land is identified and dealt with in order to discharge the statutory responsibility arising from Part 2A and to therefore ensure that contaminated land is identified and remediated to a state where the land is suitable for use and does not pose a significant risk to health or the environment.

In April 2012, the Department of Environment (Defra) revised its statutory guidance with one of the provisions being that all local authorities will need to update their strategies to reflect the changes.

This Strategy should be read in conjunction with the new Statutory Guidance which is available to download at www.defra.gov.uk and is referred to in this Strategy as the 'Guidance'. More detail on the principles that the Authorities will apply when implementing the Strategy is set out in Part C.

Interaction with Sustainability

It is recognised that the existence of contaminated land presents four main potential threats to sustainable development:-

- It may impede social progress, depriving local people of a clean and healthy environment
- It could create wider damage to the environment and wildlife
- It may inhibit prudent use of our land and soil resources, particularly by obstructing the recycling of brownfield sites and increasing pressures on the development of greenfield areas
- The cost of remediation represents a high burden on individual companies, home and other landowners and the economy as a whole.

This Strategy, including the work undertaken by the Authorities to achieve sustainable remediation of contaminated land, is aligned with the principles of Sustainability; achieving a balance between social, economic and environmental concerns whilst meeting the Authorities statutory obligations and corporate responsibilities.

Development and Progress made by the Authorities

Forest Heath District Council (FHDC) and St Edmundsbury Borough Council (SEBC) first published their Contaminated Land Strategies in 2001 and subsequently have revised them to maintain their currency and relevance.

This document is a further revision of these strategies, which is reflective of the work completed to date and the revised Guidance. This Strategy also takes into account that the authorities operate a shared service. For the purpose of this Strategy the two authorities will be referred to as 'the Authorities' or "we".

To date, potential sites in West Suffolk have been identified and mapped. These sites have been risk-rated and prioritised for the Authorities to inspect. Relevant data has been gathered and assessed with sites where remediation has been required being either dealt with by voluntary agreement or through the planning process as set out below.

Redevelopment of land exposed to contamination is dealt with primarily through the Town and Country Planning Acts since land contamination, or the possibility of it, is a material planning consideration. This means that the Local Planning Authority (LPA) has to consider the potential implications of contamination, both when it is developing planning policy and when it is considering development proposals. Government Guidance on dealing with land affected by contamination through development is given in the National Planning Policy Framework (NPPF).

Structure of the Strategy

This document is divided into three parts:

Part 1 concentrates on the West Suffolk approach to dealing with contaminated land.

Part 2 highlights the key characteristics of Forest Heath and St Edmundsbury.

Part 3 is a technical outline setting out the national and local policy context and principles of contaminated land assessment and regulation.

PART 1
THE WEST SUFFOLK STRATEGY

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1.1 Aims and Objectives of the Strategy

We will work together to implement the contaminated land regime using this Strategy to achieve the following aims:-

- Protect human health, controlled waters and local ecosystems from the impact of contaminated land
- Prevent damage to property from the impact of contaminated land
- Encourage voluntary remediation
- Encourage the redevelopment of brownfield sites.

In achieving these aims, we will:

- Use the most appropriate mechanism to deal with land contamination
- Deal with contaminated land using the “*suitable for use*” approach in a rational, ordered and efficient manner
- Take action which is in proportion to the seriousness of any actual or potential risk posed by the presence of contamination
- Ensure that the most pressing problems are dealt with first
- Ensure that, as far as practical, the polluter pays by securing voluntary action or by employing our enforcement powers
- Deal with our own land where it has been affected in a prompt and responsible manner
- Communicate with stakeholders and interested parties about land contamination in an open, accessible and responsive way.

Our objectives are to:

- Inspect West Suffolk to identify contaminated land according to the approach set out in the Strategy
- Adopt a risk-based approach in order to prioritise investigative work to determine contaminated land
- Pursue the assessment and remediation, as needed, of identified sites coming through the planning process
- Collate, record and make available information, as far as practical and relevant, on the condition of land throughout West Suffolk
- Monitor regularly and report on our progress
- Review the Strategy periodically and revise its contents as necessary.

These aims and objectives will be progressed in line with each Authority’s corporate priorities. More details can be found via the following links:

www.forest-heath.gov.uk

www.stedmundsbury.gov.uk

1.2 Our work programme

The following work will be undertaken within the five year period of this Strategy:

- Develop local planning policy and guidance in response to the publication of the National Planning Policy Framework published in 2012
- Revise our Part 2A procedures and guidance following revision to the Defra Statutory Guidance published in 2012
- Carry out inspections based on service requests and as part of programmed investigation of potentially contaminated sites within West Suffolk
- Provide pre-planning application advice and guidance and review planning applications as appropriate
- Respond to pollution incidents with the potential to damage land or cause harm to health as a consequence of land contamination
- Monitor sites where the status of any contaminant linkage may be subject to change
- Continue to provide advice and supply information to individuals and organisations enquiring about land quality in West Suffolk
- Ensure staff competence by employing suitably qualified staff maintaining their professional competence
- Review the Strategy every five years as a minimum.

These activities are based upon the current situation and may be subject to change due to external factors such as future changes in legislation, and internal factors such as financial resources and corporate priorities.

1.3 Resources & funding to deliver the Strategy

We have allocated staff and financial resources to discharge our statutory duties. These activities include:

- carrying out desk studies and site walk-overs
- commissioning and overseeing site investigations
- undertaking risk assessments
- taking soil and water samples and laboratory testing
- assessing information provided by others to determine the presence of contaminated land; and
- Carrying out subsequent technical and legal activities
- Preparing reports on the state of land.

The cost of any work to the point of determining contaminated land is generally borne by the regulator, that being the Authorities. In the case of Special Sites, the Environment Agency may provide support or, after determination of a Special Site, take on the regulatory duties.

1.4 Our approach to strategic inspection

The Authorities have collated relevant information to establish a database of sites which have been put to contaminative use, likely pathways for contaminants to migrate and sensitive receptors that could be harmed by contamination should a contaminant linkage be present.

We undertook a computer-based risk screening assessment using a program designed by the British Geological Survey based on a methodology developed by the Canadian Council of Ministers for the Environment published in 1992.

Sites of potential concern, key receptors and contaminant pathways were evaluated in turn using a computer-based mapping tool called a Geographical Information System or GIS and a score for potential risk calculated. The scores are then combined to give a priority grading. This allowed an Inspection Programme to be created so that detailed inspection activities could be carried out in an objective, targeted and proportionate manner.

New information comes to light or situations occur where new sites are identified. These sites are addressed within the Inspection Programme according to their urgency.

1.5 Our approach to detailed inspections

A range of inspection techniques including desk based research and site visits, may be used to determine the state of the land.

On-site inspection will only be carried out where, in our opinion, there is a reasonable possibility of a contaminant linkage being present. Where the inspection involves carrying out an intrusive investigation (i.e. taking samples or installing monitoring points), we will ensure that:

- information has not already been provided on the condition of the land upon which we can reasonably determine contaminated land, or no offers have been made to furnish such information within a reasonable and specified time prior to the inspection;
- intrusive investigations will be carried according to current approved standards and Codes of Practice;
- interested parties and relevant statutory bodies will be consulted in advance of intrusive investigation being undertaken.

Before any site visit is carried out, we will make all reasonable efforts to obtain permission for access from the person responsible for the site. In certain circumstances, we may have to use our powers of entry under Section 108 of the Environment Act. This, however, will be viewed as a last resort.

All site inspections will be carried out according to current health and safety standards and relevant guidance. Suitably qualified and experienced staff, whether Council employees or experienced consultants, will undertake site inspections.

Before each site inspection, those carrying out site work will be appraised of all relevant information about the state of the site to identify whether particular health and safety measures will be required.

Certain triggers may instigate non-routine inspections such as:

- Unplanned events i.e. spills
- Identification of new contaminant linkages
- Submissions of schemes for voluntary remediation prior to an inspection
- Identification of localised health effects attributable to a particular area of land
- Newly supplied information, including reports of abnormal site conditions
- Establishment of important case law.

We will endeavour to undertake non-routine inspections according to the same principles as routine inspections.

1.6 Making a decision whether to determine contaminated land

We can only make a decision whether we should determine contaminated land after we have undertaken all the tasks set out above and after having regard to the principles set out in Section 3 of the Strategy.

1.7 Securing remediation

The contaminated land regime encourages voluntary remediation and it will be our policy to secure clean-up by negotiation with those who are liable wherever possible. In cases where negotiation between us and the interested parties fails to lead to reasonable remediation being achieved, we will use our enforcement powers under the Act.

In all cases, we will undertake our enforcement role according to the guiding principles set out in our Enforcement Policy.

More detail on our enforcement policy can be found on our websites.

1.8 Dealing with liabilities & remediation costs

Having determined a site as contaminated land, every effort will be made to identify the appropriate person to bear responsibility for remediation based on the principle that the polluter pays.

However, if in the unlikely event no appropriate person has been identified, we may be required to meet the costs of remediation. Where possible, we will seek support from any central government capital grant funding available to avoid unnecessary demand on the local public purse.

1.9 Taking urgent action

The Authorities already operate procedures to deal with situations where it appears that serious harm or pollution is being, or is likely to be caused. We will endeavour to apply the same principles and standards set out above for routine action.

1.10 Internal management procedures, competence and performance standards

All work to identify and deal with contaminated land will be carried out according to documented in-house procedures. These procedures will be maintained and regularly reviewed to ensure that all work is undertaken in a consistent and effective manner.

Staff working on land contamination issues will be suitably qualified and experienced to undertake the work that they have been allocated. Competence will be assessed both in terms of suitable technical qualifications continued professional development to maintain their knowledge and competence.

All work will be subject to management review at regular intervals to ensure that it accords with the aims and objectives set out in the Strategy. We operate key performance indicators against which our performance will be compared and scrutinised.

1.11 Consulting and communicating with others

Since the community will be affected by the condition of the land in its locality, local people need to be informed about any significant risks which are thought to exist from contamination. We will carry out our duties so that:

- The contaminated land regime and our decisions and actions are as transparent as possible;
- Undue delays or confusion are avoided;
- Meaningful communication of risk issues is achieved in unambiguous terms;
- There is clear identification of who is responsible for actions required under the regime;
- Concerns are handled sensitively, responsibly and promptly; and
- All practical effort is made to avoid blighting residential properties.

1.12 Managing and accessing information

In order to implement the Strategy, we must gather information from a wide variety of different sources relating to the state of the land. This information may be in a range of media forms.

Therefore, it is important to ensure that the information is managed systematically so that it can be readily retrieved and to avoid loss, damage or deterioration. Information will need to be kept up-to-date. We will regularly check the status of key data sets and review the currency of information at frequencies appropriate to the data set.

Local authorities are subject to the requirements of the Environmental Information Regulations 2004, the Freedom of Information Act 2000 and the Data Protection Act 1998. Accordingly, we are committed to ensuring open access to information unless there are specific legal or technical reasons preventing us to do so. This could be where releasing information is:

- Prejudicial to national security
- Prejudicial to future legal proceedings
- Subject to copyright restrictions
- Work in progress
- Data relating to individuals.

General information and advice about land quality is available on our websites. Specific enquiries about contaminated land can be made through our websites, by e-mail, telephone, in writing or in person. We must deal with a request for information within 20 working days except where the enquiry is complex or involves a large amount of information. Should an answer not be possible within this time, we will tell you how long it will take to answer your request.

There may be a charge to cover our costs in answering an enquiry. We will always say in advance if there will be a charge. No charge will be made for inspecting any public register of information.

1.13 Reporting progress

We will report publically on our progress regularly, using our Committees and service performance reporting. We will also use informal means of communicating including our websites, press releases, newsletters and articles and other forms of communication. We will endeavour, as far as practicable, to report on our activities in an accurate, meaningful and responsible way.

1.14 Reviewing the Strategy

We will review our Strategy every five years, as a minimum, although more frequent review may be undertaken should this be needed. We will endeavour to ensure that any required changes to the Strategy are implemented in a timely and effective manner to achieve our aims and objectives.

PART 2
LOCAL
CHARACTERISTICS

CHARACTERISTICS OF FOREST HEATH

2.1 Location and population

Forest Heath covers 37,398 hectares in West Suffolk. The District has three main centres of population; Newmarket, Mildenhall and Brandon. The rest of the population is spread across the District in 22 small rural villages.



Figure 1: Forest Heath

The population of the District was 64,345 (Office of National Statistics, 2009 Mid-year estimate), of which approximately 12,000 are US personnel and their dependents stationed at RAF Lakenheath and RAF Mildenhall.

2.2 Topography and land use

Forest Heath District has a rich variety of natural landscapes from the chalk downlands of Newmarket, through the rich agricultural fenlands in the west, to the sandy Brecklands in the north, home to the largest 'lowland' forest in the country.

The District has several industrial estates concentrated in and around the principal towns, in addition to the progressive agricultural enterprises located in the rural parts of the District. The horse racing industry towards the west of the District around Newmarket is recognised as a centre of excellence for the international horse racing and blood stock industry.

The other key land users in the District are the two USAF bases located at RAF Mildenhall and RAF Lakenheath. These facilities are the largest of their type in the UK.

2.3 Geology

The geology of the District comprises of Upper Cretaceous marine chalks and Quaternary marine, glacial, interglacial and post-glacial sediments. These sediments overlay the Palaeozoic basement rocks which form the upper part of an ancient landmass known as the London Platform. This platform forms the western part of an ancient landmass that stretched from East Anglia to the Ardennes.

The majority of surface geology in the District is Cretaceous, consisting of Upper, Middle and Lower Chalk.

2.4 Water resources

Anglian Water is the major supplier of drinking water in the District and the Council regularly inspects the quality of the 39 currently permitted private drinking water supplies in accordance with the Private Water Supplies Regulations 2009 and monitors the standard of the drinking water produced by Anglian Water.

The EA Groundwater Vulnerability map "Environment Agency Anglian Region Groundwater Maps, North Essex 1:100 000" provides information on the water beneath the land in the District, and the majority of the District overlies a principal aquifer.

Protection of groundwater in the District from contamination is a major objective of this strategy.

2.5 Natural and built environment

The number and variety of plant and animal species that exist in the District, (i.e. the biodiversity) is one of its major natural assets. As a rural District it encompasses:

- Twenty-four Sites of Special Scientific Interest (SSSI's)
- Fifty-five County Wildlife Sites
- Much of the remainder of the District is Special Landscape Area

- The largest lowland forest in England; Thetford Forest covers much of the District, and is designated as an Environmentally Sensitive Area
- Fourteen designated Conservation Areas
- Four hundred and one listed buildings of Historical or Architectural Importance.

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CHARACTERISTICS OF ST EDMUNDSBURY

2.7 Location and Population

The Borough of St Edmundsbury (Figure 4) covers an area of 65,697 hectares in West Suffolk and has a population of approximately 111,008 (2011 census) distributed as follows:

- Bury St Edmunds – 41,113
- Haverhill – 27,041
- Rural areas – 42,854.



Figure 1 - The Borough of St Edmundsbury

Figure 2 – St Edmundsbury

2.8 Topography and land use

The topography of the Borough is typified by gently rolling lowland cut by small rivers and their tributaries. The landscape contains considerable variety, ranging from heaths and afforested areas of the Brecks in the north, to the river valley of the Upper Stour in the south. The Borough divides into north and south with a central plateau in the area of Chedburgh at 125m above Ordnance Datum.

Arable farming is the principal land use with the commonest crops being wheat, barley, rape and sugar beet. However, the rural landscape is varied with water meadows along main streams and woodland. Industries, like woollens, have been superseded by light engineering and service industries principally in Bury St Edmunds and Haverhill. Food processing is strong in the local economy, including sugar beet, pig and poultry processing.

2.9 Geology

The Borough lies on the northern edge of the London Plateau of the Late Palaeozoic, and is underlain by Chalk of the Cretaceous Period (Figure 5). In the southern part of the Borough, the Chalk is overlain by Tertiary and Quaternary deposits including London Clay and Crag. The solid geology is predominantly overlain by superficial deposits comprising Glacial Till with Glacial Sand and Gravel in the river valleys.

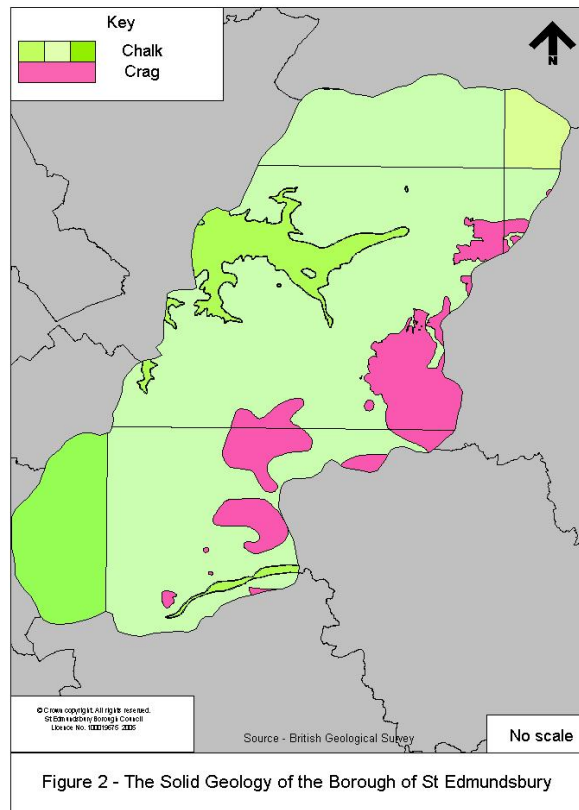


Figure 3 – Geology of St Edmundsbury

2.10 Water resources

The Cretaceous Chalk forms the main aquifer in the area. It comprises a pure, fine-grained, high porosity limestone with the presence of fissures giving high secondary porosity. Beneath the Chalk, groundwater is also

present in the Lower Greensand of the Lower Cretaceous, comprising a highly permeable loosely cemented sandstone with local clay beds.

The Crag Sands and unconsolidated chalky clay, sand silt and gravel deposits overlying the Chalk are generally considered to be in hydraulic continuity with the Chalk. These can act as local sources of water supply although they are prone to drop in yield during drought. Since they are in continuity with the Chalk, they act as a means for surface water to percolate into deep storage in the Chalk. The Chalk is identified as being of high vulnerability from contamination because of the importance of the groundwater resources and relative lack of protection from superficial deposits (Figure 6).

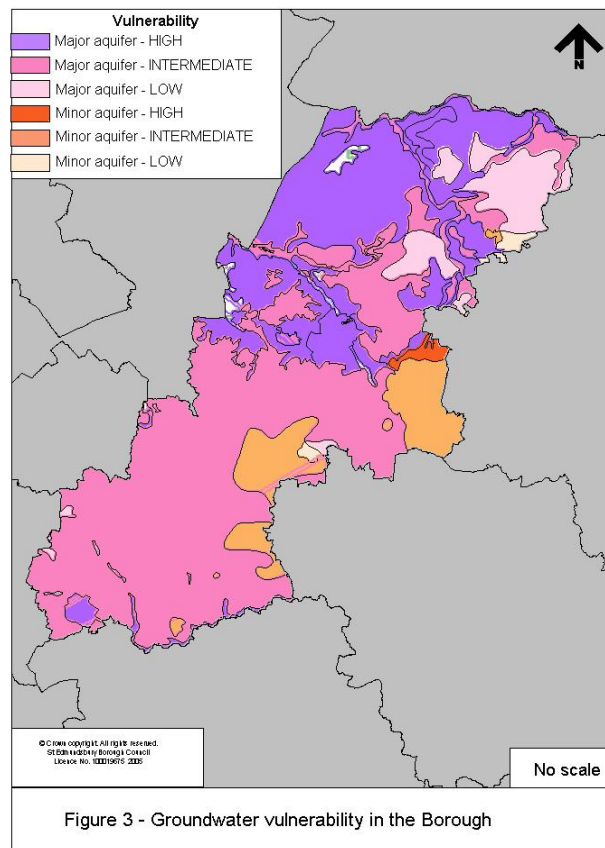


Figure 6 – Groundwater vulnerability in St Edmundsbury

The Borough is divided by the central plateau into two drainage catchments with the Ouse drainage system to the north and the Stour to the south (Figure 7).

In the north, most streams flow northwards from the high ground around Chedburgh via the Rivers Lark and Linnet, and along the northern boundary of the Borough by the Little Ouse (and its tributary the Black Bourne) into

the Wash. To the south, the Borough is drained by the Stour and its tributaries including the River Glem south-eastwards to the North Sea.

Primary drinking water supplies are obtained via borehole abstractions from the Chalk aquifer (Figure 7).

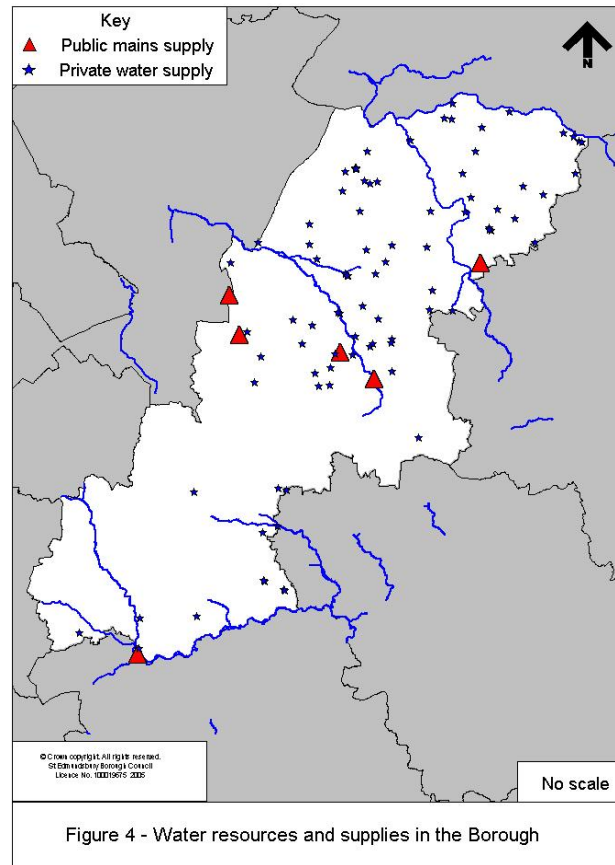


Figure 7 – Drinking water supplies in St Edmundsbury

2.11 Natural and built environment

The Borough has the following designations within its area:

- One Special Protection Area – the Brecks (part)
- Special Areas of Conservation – the Brecks (part) and the Waveney and Little Ouse Valley Fens (part)
- 22 Sites of Special Scientific Interest
- 145 County Wildlife Sites; and
- 3 local nature reserves.

The Borough contains 35 designated conservation areas and over 3,000 listed buildings.

PART 3
NATIONAL POLICY CONTEXT
AND PRINCIPLES FOR
DEALING WITH
CONTAMINATED LAND

3.1 Introduction

This section explains the technical and legal aspects of regulating contaminated land. For a fuller explanation of the contaminated land regime, reference should be made to the Contaminated Land Statutory Guidance (see Key References).

3.1 Regulatory roles

Under Sections 78B(1) and 78B (2) of the EPA the primary regulatory roles for the Authorities are to:

- cause the area to be inspected to identify contaminated land;
- decide, after consultation, what remediation is required in any individual case and to ensure this takes place;
- establish who should be the appropriate person or persons to bear responsibility for the remediation of such land; and
- record information about regulatory activity and make it available to the Public.

The Environment Agency also has a number of roles with respect to contaminated land under Part 2A. These are to:

- assist local authorities in identifying contaminated land, particularly where pollution of controlled waters is involved;
- provide site specific guidance to local authorities;
- act as the enforcing authority for any site designated as a '*Special Site*';
- publish periodic reports on contaminated land; and
- carry out technical research and, in conjunction with Defra, publish scientific advice.

3.2 Local authority inspection duties

When carrying out statutory inspections, priority should be given to particular areas of land that Authorities consider most likely to pose the greatest risk to human health and the environment. However, when carrying out inspections, the Authorities should seek to minimise or reduce property blight as far as it considers reasonable. The Authorities should also encourage land owners or other interested parties to resolve contaminated land issues themselves and encourage voluntary investigation and remediation of land.

Where, in the Authorities opinion, there is a possibility that a significant contaminated linkage (See Section 3.5) exists, a detailed inspection of the land to obtain sufficient information should be carried out.

The Authorities should consult landowners prior to inspection or if access is denied, the Authorities can use statutory powers of entry under Section 108 of the Environment Act 1995. All detailed inspections and investigations

should be carried out in accordance with appropriate good practice technical procedures. If at any stage the Authorities consider that there is no longer a reasonable possibility of a significant contaminant linkage then the Authority should not carry on out any further inspection.

Some sites may be '*Special Sites*' by virtue of their complex nature. These are defined in the Contaminated Land (England Regulations) 2006 and where identified require the Authorities to consult Environment Agency.

3.3 Definition of risk

Part 2A takes a risk-based approach to defining contaminated land and risk is defined within the Guidance as,

'a) the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and (b) the scale and seriousness of such harm or pollution if it did occur'.

The Authorities should focus on land which might pose an unacceptable risk and should have regard to good practice guidance on risk assessment so it can make a robust decision in line with Part 2A and the Guidance. The risk assessments should be based on information which is scientifically based, authoritative relevant and appropriate.

3.4 Current use

Under Part 2A, risk should be considered only in relation to the current use of the land. Current Use is defined as:

- a) The use which is being made of the land currently
- b) Reasonably likely future uses of the land that would not require a new or amended grant of planning permission
- c) Any temporary use to which the land is put, or is likely to be put, from time to time within the bounds of current planning permission
- d) Likely informal use of the land, for example children playing on the land, whether authorised by the owners or occupiers, or not.
- e) In the case of agricultural land, the current, the current agricultural use should not be taken to extend beyond the growing or rearing of the crops and animals which are normally grown or reared on the land

The Government's objectives with respect to contaminated land underlie the 'suitable for use' approach to the assessment and management of risk. This approach comprises three elements:

- ensuring that, in terms of risk to human health, land is suitable for its current use
- ensuring that land is made suitable for any new use as planning permission is given for that new use

- limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment.

3.5 Contaminant linkages

Under Part 2A, for a risk to exist there must be one or more contaminant-pathway-receptor linkages or '*contaminant linkages*' by which a relevant receptor might be affected by the contaminants in question. Contaminant-pathway-receptor is each defined as:

- A "*contaminant*" is a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of controlled waters.
- A "*pathway*" is a route by which a receptor is or might be affected by a contaminant.
- A "*receptor*" is something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters. The various types of receptors that are relevant under the Part 2A regime are explained in later sections.

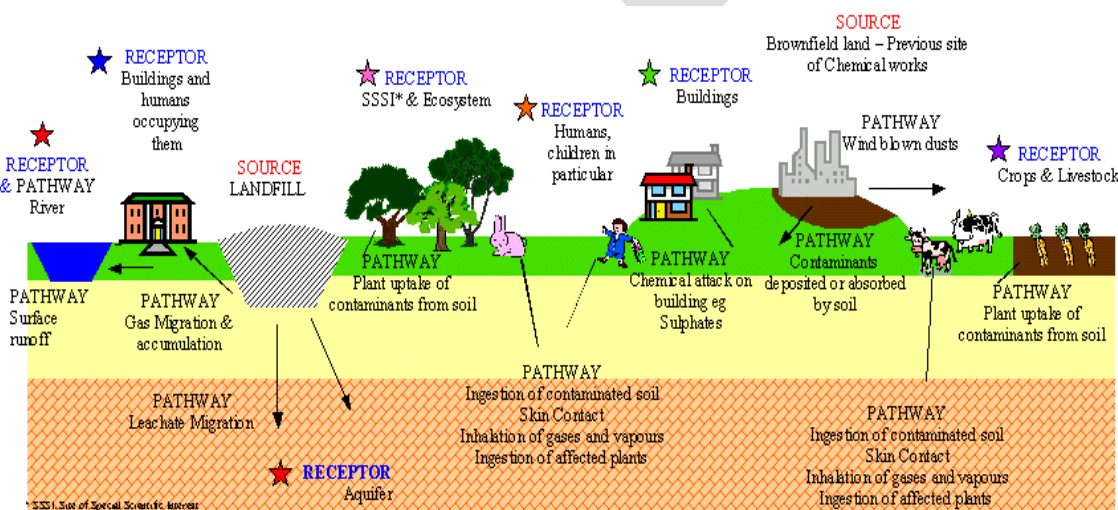


Figure 8: Examples of Contaminant Linkages

All three elements of a contaminant linkage must exist before the land could be determined as contaminated land under Part 2A. A '*significant contaminant linkage*' as defined in the Guidance is required which gives rise to a level of risk sufficient to justify a piece of land being determined as contaminated land.

In considering contaminant linkages, the Authorities should consider whether:

- The existence of several different potential pathways linking one or more potential contaminants to a particular receptor, or to a particular class of receptors, may result in a significant contaminant linkage
- There is more than one significant contaminant linkage on any land. If there are, the Authorities should consider whether or not each should be dealt with separately, since different people may be responsible for the remediation of individual contaminant linkages.

In addition to the aquifer as a receptor mentioned above, the drinking water supply could also be a receptor via the supply infrastructure in the vicinity of sources of pollution such as landfills where leachate may arise, unless a suitable barrier pipe is installed.

The UK Water Industry Research published guidance in 2010 on the appropriate selection of drinking water pipes in brownfield sites. Anglian Water currently work to this guidance to afford an appropriate level of protection to the drinking water system.

3.6 The process of risk assessment

The understanding of the risks is developed through a staged approach to risk assessment which involves a preliminary risk assessment formed by desk-study, a site visit and walkover, a generic quantitative risk assessment which is usually communicated in the form of a '*conceptual model*'. This is often followed with various stages of more detailed risk assessments.

3.7 Normal/Background contamination

Many contaminants are naturally occurring and are commonly found in soils, due to soil forming processes and the nature of the underlying geology. Other substances are also widespread in the environment due to low level diffuse pollution and common human activities, such as the historic use of spreading of ash in domestic gardens.

The Part 2A regime was introduced to help deal with land which poses unacceptable levels of risk. For the large majority of sites where there are naturally occurring contaminants, or levels of contamination which might be considered '*normal*' in a particular area, there is usually no reason to consider this land as contaminated land.

The Guidance makes it clear therefore, that where land is at or close to '*normal*' levels of contamination, it should usually not be considered further under Part 2A, unless there is a particular reason to do so. In such cases the Authorities would need to carefully explain the reasons for taking that decision based on robust scientific evidence.

3.8 Use of generic assessment criteria

The Environment Agency has developed a Government-supported methodology for estimating long-term risks to people from contaminants in soil, known as the Contaminated Land Exposure Assessment tool (CLEA).

This software has been used to derive soil guideline values (SGV's), which can be used as minimal risk screening values to compare with concentrations of contaminants in soil. They can be used to indicate when land is very unlikely to pose a significant possibility of significant harm to human health. They are accompanied by a number of technical guidance documents, which form part of the CLEA package.

Other generic assessment criteria (GAC), derived by reputable organisations and competent practitioners in the land contamination sector, are available for most of the commonly occurring contaminants in soil. As with any generic assessment tool, the limitations and assumptions must be clearly understood before they are used in the risk assessment process.

3.9 Risk Summaries and Written Statements

Once the Authorities have completed a detailed inspection and assessment of a particular piece of land, it should be satisfied it has sufficient understanding of the risk to take relevant regulatory decisions

As part of this, the Authorities shall produce a 'Risk Summary' for any land where, on the basis of its risk assessment, the Authority considers it is likely that the land in question may be determined as contaminated land or produce 'Written Statements' where on the basis of its risks assessment, the Authority considers it is unlikely that the land in question is contaminated land.

3.10 Statutory definition of contaminated land

Section 78A(2) of EPA provides the following statutory definition of contaminated land: -

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

a) significant harm is being caused or there is a significant possibility of such harm being caused; or

b) significant pollution of controlled waters is being, or is likely to be caused"

It should be noted that Part 2A will not apply where existing pollution control legislation deals with land contamination, as shown below:

- Change of land use, where land becomes a risk to potential new receptors (i.e. future residents) as a result of land use change under the Town and Country Planning Acts
- Integrated Pollution Prevention and Control (IPPC) where industrial processes require a permit under the Pollution Prevention and Control Act 1999 for preventing pollution arising from these processes
- The Water Resources Act 1991 applies where a pollutant is discharged into controlled waters and is no longer affecting the land, and where discharge consents have been granted
- The Health and Safety at Work etc Act 1974 as applicable to the risk of harm to employees
- The Control of Major Accident Hazard Regulations (COMAH) 1999 as applicable to risk of harm following an incident
- The Environmental Damage (Prevention and Remediation) Regulations 2009 as applicable following an incident.

3.11 Significant Harm and Significant Possibility of Significant Harm to Human Health (SPOSH)

The Guidance defines harm as,

"harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property".

However, there are no definitions of the term 'significant' but there is additional guidance of the assessment of significance. The Guidance suggests that the local authority should consider any decision on whether land is contaminated in the context of the broad objectives of the regime and of the Government's policy.

Sections 4.19-4.29 of the revised Guidance puts contaminated sites into four categories, from an unacceptably high probability to low or no risk, on the grounds of significant possibility of significant harm to human health. The Guidance also highlights that as the decision is a positive legal test the starting assumption should be that land does not pose a significant possibility of significant harm unless there is reason to consider otherwise.

3.12 Significant harm and significant possibility of such harm (non-human receptors)

In considering non-human receptors, Table 1 and Table 2 in the Guidance outline whether or not significant harm is being caused or there is a significant possibility of such harm to non-human receptors.

3.13 Significant Pollution of Controlled Waters and significant possibility if such pollution

Under section 78A(9) of Part 2A, the pollution of controlled waters is defined as *"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter."*

Before determining that significant pollution of controlled waters is being, or is likely to be caused, the Authorities should be satisfied that a substance is continuing to enter controlled waters or is likely to enter controlled waters.

The following types of pollution should be considered to constitute significant pollution of controlled waters:

- a) pollution equivalent to 'environmental damage' to controlled waters as defined by the Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under these Regulations
- b) inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use
- c) a breach of a statutory surface water Environment Quality Standard either directly or via a groundwater pathway
- d) input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC).

3.14 Radioactive contamination

The provisions of Part 2A were extended in 2005 to cover radioactive contamination. The main objective for extending the Part 2A regime to include radioactivity was to provide a systematic way to identify and remediate land where contamination is causing a lasting exposure of humans to radiation. Any land determined as contaminated land by virtue of radioactivity will be dealt with by the EA under the designation as a special site. This does not apply in respect of harm to any other receptor. New Statutory Guidance for land contaminated by radioactivity was issued by the Department for Energy and Climate Change in April 2012, and is not covered by the Defra Guidance.

3.15 Determination of contaminated land

Section 78A(2) of the 1990 Act says that in determining whether any land appears to be contaminated land, a local authority shall, *"act in accordance with guidance issues by the Secretary of State...with respect to the manner in which that determination is to be made"*.

3.16 Deciding that land is NOT contaminated land

During inspections, the Authorities are likely to inspect land that it then considers is not contaminated land. For example, this will be the case where

the Authorities has ceased its inspection and assessment of land on grounds that there is little or no evidence to suggest that it is contaminated land.

In such cases, the Authorities will produce '*Written Statements*' to that effect (rather than coming to no formal conclusion) to minimise unwarranted blight. The Written Statement will make clear that on the basis of the assessment, the Authorities have concluded that the land does not meet the definition of contaminated land under Part 2A.

The Authorities will therefore inform the owners of the land of its conclusion and give them a copy of the Written Statement and keep a record of all Written Statements itself. The Authorities will consider making Written Statements available to other interested parties proactively and will always provide Written Statements on request.

3.17 Determining that land is contaminated land

The Authorities each have the sole responsibility for determining whether any land appears to be contaminated land. There are four possible grounds for determination of land as contaminated land:

- (i) Significant harm is being caused to a human, or relevant non-human receptor
- (ii) There is a significant possibility of significant harm being caused, or relevant non-human receptor
- (iii) Significant pollution of controlled waters is being caused
- (iv) There is a significant possibility of significant pollution of controlled waters being caused

Before making any determination, the Authorities should have identified one or more significant contaminate linkage(s) and carried out a robust, appropriate, scientific and technical assessment of all the relevant and available evidence. The Authorities should also inform the owner and occupiers of the land and any other interested parties of the Authorities intentions.

For sites which are likely to be determined following a thorough risk assessment, the Authorities will be required to have a written record of any determination which will include a '*Risk Summary*', which shall be written in an easy to understand format, which will form part of the record of determination. This will include:

- A summary of the risks, including the identified contaminant linkages, and potential impacts.
- A description of the uncertainties behind the risk assessment
- A description of the local or national context of the risk assessment findings, in a way that is understandable to the layperson
- An initial assessment of possible remediation options and likely impacts

- Any other factors which may be relevant and support the Authorities' decision making process.

For further information on Risk Summaries and records required for the determination of contaminated land please refer to Sections 3.33 -3.36 & 5.17-5.19 of the Guidance.

3.18 Special Sites

Following determination, if the site is likely to meet one or more of the descriptions of a '*Special Site*' set in the Contaminated Land Regulations 2006, the Authorities will notify the EA in writing requesting any information it may have on the land and the likelihood of any contaminant linkages.

Where the EA wishes to carry out formal investigation on behalf of the Authorities their officers will need to be appointed as '*suitable persons*'. The EA does not have the power under Part 2A to investigate land that may be contaminated land without the authorisation of the Authorities, and only the Authorities can determine the land as contaminated.

3.19 Postponement, Revocation and Variation of a determination

In certain circumstances the Authority may wish to postpone determination if the land owner wishes to deal with the issues without determination. The Authorities may also revoke or vary a determination if it becomes aware of further information which significantly alters the basis of the original determination. For further information, please refer to Sections 5.15, 5.16 & 5.20-5.22 of the Guidance.

3.20 Remediation of contaminated land

Once land has been determined as contaminated land, the Authorities must consider how it should be remediated. The aim of remediation should be:

- a) to remove identified significant contaminant linkages, or permanently to disrupt them to ensure they are no longer significant and that risks are reduced to below unacceptable levels; and/or
- (b) to take reasonable measures to remedy harm or pollution that has been caused by a significant contaminant linkage.

Remediation may involve a range of treatments, assessment and monitoring. Section 78E(1) states that a '*Remediation Notice*' shall be served on the appropriate persons, specifying what the person is to do by way of remediation and timescales.

Any remediation should be carried out in a practical, effective manner taking into account the benefits and any potential health and environmental impacts. For further information please refer to Sections 6.1 - 6.39 of the Guidance.

3.21 Liability and cost recovery

Having established land as being contaminated land, the Authorities will need to determine who is liable for remediation. Details on the steps taken can be found on in Sections 7.1-7.98 of the Guidance.

For each significant pollutant linkage, the Authorities will have to identify who are the '*Appropriate Persons*' for any remediation action relating to the pollutants that are present. There are two levels of liability:-

APPROPRIATE PERSONS - Class 'A'

Those who have caused or knowingly permitted the presence of a pollutant or pollutants in, on or under the land.

APPROPRIATE PERSONS - Class 'B'

Where no class 'A' persons can be found liability reverts to the owner or the occupier.

If the Authorities cannot find any Class A or Class B persons in respect of a contaminant linkage, there will be no liability group and the land should be treated as an orphan linkage. Consequently, the Authorities may have to bear the cost of any remediation required. The Authorities may also have to consider bearing the cost of remediation for homeowners or occupiers that were not aware of contamination when they purchased the property.

Enforcement action may be taken if the agreed remediation scheme is not complied with or if the requirements of an issued remediation notice are not met, and also a notice may be served if a request for information is not forthcoming. This course of action will only be taken where necessary and in accordance with Guidance and the Authorities enforcement policy.

Under the Contaminated land regime, if one of the Authorities has carried out the work itself it has the powers to recover all reasonable costs of remediation from those who have been identified as Appropriate Persons. Where the Council anticipates that it will have to carry out work which may result in costs being recovered, it will notify the Appropriate Person(s) at least 21 days in advance of the nature of the work and likely cost.

For urgent work, every effort will be taken to inform the Appropriate Person(s) in advance. Generally, the Authorities will seek to recover costs incurred in remediation, but will have regard to the Guidance in particular relation to any hardship which may be incurred by an Appropriate Person(s).

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