



Contaminated Land Strategy

Required under the
provisions of the
Environmental Protection Act
1990: Part 2A

**This Edition
September 2021**

**Next review due by
October 2026**

CONTAMINATED LAND STRATEGY 2021 - 2026

Author - Mary Rickard, Contaminated Land Officer

© Colchester Borough Council 2021

First Revised Edition – December 2015

This Edition (2021) - Minor review and update of links, references etc. only

Next Review – Due by October 2026

Contents

| | |
|---|----|
| Introduction..... | 1 |
| Key documents..... | 2 |
| Terminology..... | 3 |
| Objectives of the Part 2A regime | 4 |
| • The relationship between Part 2A and planning | 5 |
| • Situations where the Part 2A regime does not apply | 6 |
| Colchester Borough Council’s inspection duties | 7 |
| A) Strategic inspection | 8 |
| • Our aims, objectives and priorities | 8 |
| • A description of the relevant aspects of our area | 8 |
| • Our approach to strategic inspection..... | 16 |
| • Prioritisation of detailed inspection activity | 17 |
| B) Detailed inspection | 18 |
| • Funding..... | 18 |
| • Powers of entry..... | 19 |
| • Ceasing inspection..... | 19 |
| • Special sites..... | 19 |
| Risk assessment | 20 |
| • Current use | 20 |
| • Contaminant linkages | 20 |
| • The term “significant” | 21 |
| • Groups of contaminants | 21 |
| • The process of risk assessment | 21 |
| • Conceptual model | 22 |
| • Using external expertise during risk assessment..... | 22 |
| • “Normal” presence of contaminants..... | 22 |
| • Use of generic assessment criteria and other technical tools | 23 |
| • Category 4 screening levels (C4SLs) | 24 |

| | |
|--|----|
| Recognising and dealing with uncertainty | 24 |
| Risk summaries..... | 25 |
| • Content of risk summaries | 25 |
| • When we will not produce risk summaries | 25 |
| Definition of contaminated land | 26 |
| Human health..... | 26 |
| • Significant harm to human health | 26 |
| • Significant possibility of significant harm to human health | 27 |
| • Category 1: Human health..... | 28 |
| • Category 4: Human health..... | 28 |
| • Categories 2 and 3: Human health | 28 |
| • Expert Panel..... | 30 |
| Non-human receptors..... | 30 |
| Controlled waters..... | 31 |
| • Pollution of controlled waters..... | 31 |
| • Significant pollution of controlled waters | 31 |
| • Significant possibility of significant pollution of controlled waters | 33 |
| • Category 1 (Water) | 33 |
| • Category 2 (Water) | 34 |
| • Category 3 (Water) | 34 |
| • Category 4 (Water)..... | 34 |
| Radioactive contamination of land | 34 |
| Determination of contaminated land | 35 |
| • Deciding land is not contaminated land - written statements..... | 35 |
| • Determination | 35 |
| • Informing interested parties | 37 |
| • Postponing determination | 37 |
| • Written record of determination | 37 |
| • Reconsideration of determination | 38 |

| | |
|---|----|
| Remediation of contaminated land | 39 |
| • Remediation techniques..... | 39 |
| • Phased remediation | 40 |
| • Multiple significant contaminant linkages | 40 |
| • Remediation without a remediation notice..... | 40 |
| • Standard of remediation..... | 41 |
| • Reasonableness of remediation..... | 41 |
| • Health and environmental impacts | 42 |
| • Revision of remediation notices | 42 |
| • Verification | 43 |
| Liability | 43 |
| • Exclusion | 43 |
| • Apportionment between Class A and Class B persons | 43 |
| • Orphan linkage..... | 43 |
| • Financial circumstances and cost recovery | 43 |
| Bibliography | 45 |
| Appendices | 48 |
| • Appendix 1 – Prioritisation development | 49 |
| • Appendix 2 – Non-human receptors, tables 1 & 2 from Statutory Guidance | 54 |

Introduction

Section 57 of the Environment Act 1995 created Part 2A of the Environmental Protection Act 1990 (“Part 2A”), establishing a legal framework for dealing with contaminated land in England. It came into force on 1st April 2000.

To summarise, section 78B of Part 2A states that:

(1) Every local authority shall cause its area to be inspected from time to time for the purpose:

(a) of identifying contaminated land; and

(b) of enabling the authority to decide whether any such land is land which is required to be designated as a special site.

(2) In performing these functions, a local authority shall act in accordance with any guidance issued for the purpose by the Secretary of State.

Where we identify any Contaminated Land (as defined*), we are required to give notice to those who own or occupy the land and anyone who appears to be the appropriate person for the purpose of any remediation. The Environment Agency will act as the enforcing authority for land which is designated as a “special site” or “radioactive contaminated land”.

We are only able to use Part 2A where no alternative solution exists.

In accordance with all of the legislation and guidance, a Strategy was originally published and adopted by Colchester Borough Council in August 2001. Since that date, it has been subject to various officer reviews and updates. This Strategy has produced to take into account the most recent Statutory Guidance (2012), as well as other changes to the regime.

***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 caused, or there is a significant possibility of such pollution being caused.

(c) For Radioactive Contaminated Land that:

(i) harm is being caused; or

(ii) there is a significant possibility of harm being caused.

Key documents

■ [Part 2A of the Environmental Protection Act 1990](#)

■ [Contaminated Land Statutory Guidance 2012](#)

This explains how Colchester Borough Council should implement the regime, including:

- How we go about deciding whether land is contaminated land;
- The goals of remediation and its reasonableness;
- Liability;
- The circumstances when we can recover the costs of remediation.

■ [The Contaminated Land \(England\) Regulations 2006](#)

and the various amendments (for example, the latest at time of writing with regard to pollution of controlled waters): [SI 2012 No.263](#)

Radioactive contaminated land

The Part 2A regime was extended to apply to radioactive contaminated land in 2006/7 and separate regulations and statutory guidance exist.

■ [Radioactive Contaminated Land Statutory Guidance](#)

Radioactive contaminated land regulations:

[SI 2005 No.3467](#); [SI 2006 No.1379](#); [SI 2007 No.3245](#); [SI 2008 No.520](#); [SI 2010 No.2147](#); [SI 2018 No.429](#)

This Strategy has been produced to comply with all relevant documents (as they exist at the time of publication) and much of the text has been derived from them. Web page links have been provided for convenience but their addresses and/or content may be subject to change.

The Part 2A regime is complex and in all cases it will be necessary to refer to the primary legislation and most current statutory guidance.

Terminology

Contaminated land

- “Contaminated land” is land which meets the Part 2A definition of contaminated land. Other terms, such as “land affected by contamination” or “land contamination”, are used to describe the much broader categories of land where contaminants are present but usually not at a sufficient level of risk to be contaminated land.
- “Part 2A” (or “Part IIA”) means Part 2A of the Environmental Protection Act 1990 (as amended).
- The terms “contaminant”, “pollutant” and “substance” have the same meaning – i.e., they all mean a substance relevant to the Part 2A regime 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.
- “Unacceptable risk” means a risk of such a nature that it would give grounds for land to be considered contaminated land under Part 2A.

Radioactive contaminated land

In addition to the above:

- “Harm attributable to radioactivity” means harm so far as attributable to any radioactivity possessed by any substances.
- “Radioactive contaminated land” is used to mean land which meets the definition of “contaminated land” in Part 2A. Other terms, such as “land affected by contaminants”, “land affected by contamination” or “land contamination”, are used to describe the much broader categories of land where radioactive contaminants are present but usually not at a sufficient level of risk to qualify as radioactive contaminated land.
- The terms “contaminant”, “pollutant” and “substance” cover only substances containing radionuclides which have resulted from the after-effects of a radiological emergency or have been processed as part of a past practice or past work activity. Associated terms such as “contaminant linkage” are similarly limited.
- The term “Basic Safety Standards Directive” means the Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation.
- “Unacceptable risk” means a risk of such a nature that it would give grounds for land to be considered radioactive contaminated land under Part 2A.

Objectives of the Part 2A regime

England has a considerable legacy of historical land contamination involving a very wide range of substances. On all land there are background (or “normal”) levels of substances, either natural (owing to geology) or resulting from diffuse human pollution (such as atmospheric particles from fossil fuel combustion, use of fertilisers etc.). However, on some land there may be greater concentrations of contaminants. These are often associated with past uses of land, especially industrial or waste disposal uses, where regulatory controls may have been limited, or the health effects of certain pollutants not as well understood as they are today.

In a minority of cases, there may be sufficient risk to health or the environment for such land to be considered contaminated land.

Part 2A provides a means of dealing with unacceptable risks posed by land contamination to human health and the environment, and Colchester Borough Council is required to both find and deal with such land.

Under Part 2A, the starting point assumption is that land is not contaminated land, unless there is reason to consider otherwise.

Only land where unacceptable risks are clearly identified will meet the Part 2A definition of contaminated land.

The overarching objectives of the Government’s policy on contaminated land and the Part 2A regime are:

- To identify and remove unacceptable risks to human health and the environment.
- To seek to ensure that contaminated land is made suitable for its current use.
- To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

Part 2A should only be used where no appropriate alternative solution exists.

It will not be used:

- When land is appropriately developed/redeveloped under planning or building control;
- Where action is taken independently by landowners; or
- Where other legislative regimes apply e.g., environmental permitting or the Environmental Damage (Prevention and Remediation) Regulations 2015.

Where decisions are not straightforward or there is unavoidable uncertainty underlying some of the facts of a case, we will use our judgement to strike a

reasonable balance. We will take a precautionary approach to the risks raised by contamination, whilst avoiding being disproportionate, and will take into account the circumstances of each case. The aim will be to consider the various benefits and costs of taking action (and local circumstances), with a view to ensuring that the regime produces net benefits. All matters will be considered with reference to the legislation and statutory guidance.

The relationship between Part 2A and planning

Most land contamination is dealt with through the planning process. The approach has been set out in the [National Planning Policy Framework \(NPPF\)](#).

Just because land is affected by contamination does not mean that it is contaminated land.

Planning

- Considers *future use*
- Considers “land affected by contamination”
- Must ensure that, after remediation, as a minimum, land should not be capable of being determined as “contaminated land” under Part 2A

The developer’s role:

- Responsible for ensuring that a development is safe and that the land is suitable for the use intended, or can be made so through remediation.
- Ensure competent persons (as defined in Annex 2 of the NPPF) carry out adequate investigations, risk assessments, remediation and verification.

The Essex Contaminated Land Consortium has produced a helpful and informative technical guide for developers: [ECLC technical guide for developers](#). There is also advice on the Council’s website planning pages: [Contaminated Land and Planning](#).

Part 2A

- Considers *current use*
- Considers “contaminated land”
- Only considers contamination that is causing unacceptable risk to human health or the environment
- Applicable for sites where development is unlikely, or that have already been developed

Situations where the Part 2A regime does not apply

In addition to the planning regime (and dependent upon the nature of the contamination) other regimes may also be appropriate, for example:

- [Environmental Damage \(Prevention and Remediation\) \(England\) Regulations 2015](#) (as amended from the 2009 Regulations and updated by [SI 2019 No.1285](#)) - requirements for “operators” of specific types of “activity” to respond to certain imminent threats and actual cases of environmental damage.
- [Environmental Permitting \(England and Wales\) Regulations 2016](#) – preventing or reducing emissions to air, water and land from prescribed industrial processes.
- [Water Resources Act 1991](#) amended by the [Water Resources Act \(Amendment\)\(England and Wales\) Regulations 2009](#) - pollution incident directly into a body of water where the land is no longer causing pollution.
- [Health and Safety at Work etc. Act 1974](#) - where there is a risk of harm to persons at work from land contamination.
- [Control of Major Accident Hazard Regulations 2015](#) – for a major incident which has caused land contamination.
- [Building Regulations 2010](#), especially [Approved Document C - Site preparation and resistance to contaminants and moisture](#) – requires precautions to avoid danger to health and safety caused by contaminants in ground to be covered by buildings and associated ground.
- [Environmental Protection Act 1990, Part III](#) (Statutory Nuisance) – neither “Contaminated land” nor “land in a contaminated state” can be a Statutory Nuisance; however, nuisance from odour can be considered.

We will seek to minimise unnecessary burdens on the taxpayer, businesses and individuals by encouraging voluntary action to deal with land contamination issues as far as reasonable and practicable

Colchester Borough Council's inspection duties

Part 2A of the Environmental Protection Act 1990 requires that we inspect our area from time to time, for the purpose of identifying contaminated land and deciding whether any such land is a special site, and to do this in accordance with the Statutory Guidance.

This written Strategy has been published in accordance with our inspection duties and to reflect local circumstances. The original Strategy was published and adopted in August 2001 and has undergone intermittent officer review since then, the last in December 2015. This Strategy has been updated to reflect the 2012 Statutory Guidance and other recent changes to the regime.

Our Strategy will be kept under periodic review to ensure that it remains up to date and we will aim to review our Strategy at least every five years.

There are two types of inspection:

- A) “*Strategic inspection*” - collecting information to make a broad assessment of land within the borough, and then identifying priority land for more detailed consideration; and
- B) “*Detailed inspection*” of particular land - to obtain information on ground conditions and to carry out risk assessments which support decisions under the Part 2A regime which are relevant to that land.

A) Strategic inspection

Our aims, objectives and priorities

Part 2A of the Environmental Protection Act 1990 compliments the Council's own corporate aims and objectives. The identification and safe use/re-use of land which is contaminated plays a key part in the sustainable development of the borough.

The Council's [Strategic Plan 2020 - 23](#), adopted by full Council in October 2020, outlines 15 priorities (3 under each strategic theme), taking in to account the impact of the Covid-19 pandemic, and sets out the key goals by which success will be measured moving forward, together with a clear set of commitments that will be delivered in the first year of the plan. These will form the basis for the Strategic Plan action plan and updates will be reported twice a year to Cabinet and to Scrutiny Panel:

- **Tackling the climate challenge and leading sustainability**
- **Creating safe, healthy and active communities**
- **Delivering homes for people who need them**
- **Growing a fair economy so everyone benefits**
- **Celebrating our heritage and culture**

The Council's [Local Plan](#) is a plan for the development of the local area, drawn up by the Local Planning Authority. It guides decisions on whether planning applications can be granted. Colchester's Emerging Local Plan replaces the Local Plan 2001 to 2021 and will direct new development in Colchester up to 2033.

Implementation of the Contaminated Land Strategy will impact on many aspects of the Council's corporate objectives, providing long term benefits to all members of the community, by identifying contaminated land and making certain that it is effectively remediated, having regard for the Statutory Guidance.

It is intended that land contamination will be dealt with in the main either through the planning and development control process or by way of voluntary remediation. The Council's Contaminated Land Strategy is available to address contamination which meets the statutory definition and which cannot be dealt with by any other means.

A description of relevant aspects of our area

History of the borough

Early inhabitants

There is evidence of human habitation in the borough dating back to pre-history, with archaeological evidence of Palaeolithic, Mesolithic, Neolithic, Bronze Age and Iron Age occupation sometimes uncovered during redevelopment, especially in the centre and south-west of Colchester. Vestiges of Iron Age farmsteads still exist, in

the form of a complicated dyke system, especially in the Gosbecks area. Activities such as sea-salt making have been undertaken since the Bronze Age (evidenced in village names such as Salcott), flourishing in the Iron Age and Roman times. Local clays have been utilised in pottery, brick and tile making, with evidence dating back at least to Neolithic times.

Colchester was a significant site in pre-Roman times, and a stronghold of the Trinovantes tribe. When the Catuvellauni tribe threatened to invade, the area was sufficiently important for the Romans (under Caesar) to use this as an excuse to invade and conquer in 54 BC.

Claimed as Britain's oldest recorded town (referred to by the writer Pliny the Elder in AD77), Roman Camulodunum was originally set up as a legionary fortress and military base for the conquest of the rest of Britain. It later became a civilian settlement ("Colonia Claudia"), the first capital of the Roman province of Britannia (AD49).

However, the city was relatively undefended and was virtually destroyed in AD60 by the Iceni Queen, Boudica, and her followers, local tribes who resented the colonists. The entire town was burnt to the ground and the temple of Claudius destroyed, with only the foundations remaining. The town was rebuilt and enclosed by a defensive wall, large sections of which still stand today. The Roman capital moved to London (Londinium), however, Colchester continued as a wealthy town. Archaeological excavations have revealed numerous important sites, both within and outside the historic walls. Recently, the only known remains of a Roman circus in Britain were discovered to the south of Colchester. Evidence of Roman living has also been found elsewhere in the borough, e.g., at Mersea Island.

The Romans gradually retreated or integrated with the local population and Anglo-Saxon settlers took over. Roman buildings fell into disrepair and their stone was often plundered and re-used in other buildings, including Colchester castle, built on the temple foundations by the Normans.

Textiles

Events such as the Peasant's Revolt and religious persecution saw the immigration of weavers (especially Dutch and Flemish) to the borough, from the 14th century onwards, with a thriving textile industry being established in the 15th to 17th centuries. This was initially wool based ("bay making" or "bays and says"), providing employment for people of all ages in fulling mills, dyeing, spinning, weaving, finishing etc., at locations such as Bourne Mill, Cannock Mill and Upper Castle Park, and in people's own homes, as in the Dutch Quarter. Later, the silk industry became



important, with wealthy owners investing in and shaping the borough. By the late

19th century most of the wool and silk processes had declined or ceased production. Leather tanning and boot making were also locally important occupations.

Garrison

Colchester continued to have a garrison use for many hundreds of years beyond the Roman invasion. It became especially important during the Napoleonic wars, with a permanent garrison later established in 1855. This was consolidated during the mid- to late-1900's, with the construction of several barracks around the central open space at Abbey Field.



The garrison was expanded over the years to include barracks and officers' quarters, armouries, firing ranges, a church, a hospital, a military prison, and sports facilities etc., as needs arose. During the Second World War, prisoners of war were held at the Berechurch Hall site. The Garrison site came to cover an area of almost 300 hectares.

A new, modern Garrison is now being invested in by the Ministry of Defence and 134 hectares is being developed into an urban village which will eventually include 2,600 new homes for civilian purposes. The army continues to be a major local employer today.

Industry

Until the middle of the 19th century, Colchester was primarily a market town in connection with the surrounding agricultural area. Small iron foundries supplied agricultural implements and small-scale brickworks existed, especially in the Mile End area.

The port at the Hythe was important, with many warehouses and local trades, such as coal merchants, timber merchants, corn merchants, maltsters and associated brewing industries, brick-makers, gas works (replacing earlier small works in the town centre), sewage works etc. in the area. In the mid-19th century, the river channel was deepened to allow access by larger boats. Previously Wivenhoe had been the main navigable port and important ship building and fishing industries existed there, and at Rowhedge, on the opposite bank of the Colne. Transport links and trade were improved in the borough with the arrival of the railway in 1843, later improved by branch and light railways, such as those from Marks Tey and to Wivenhoe and Tollesbury (the "Crab and Winkle"), serving more remote local industries and populations. Local gas works existed in outlying villages, such as at

Dedham in the 1860's, prior to the amalgamation of supply through creation of the Gas Light and Coke Company and its descendants.

In the late 19th century, the importance of agriculture to the local economy lessened and many successful local industries were established or expanded - mills, clothing and boot factories, breweries, printing and building firms etc. Industries which serviced the garrison thrived. Engineering became a prominent employer in the town, especially large companies such as Britannia machine tools, Mumford's marine engineers, Paxman's steam engines and boilers, Wood's fans etc. From 1911, engineering, machine making, manufacturing and later munitions works became more important occupations in Colchester. However, many of the smaller factories began to close in the 1920's and 30's.

The industrial centre at the Hythe continued to expand and King Edward Quay was constructed between 1909 and 1912 and further extended between the two World Wars. An electricity power station opened there in 1926.

The Second World War benefitted our manufacturing industries, especially engineering and clothing. Engineering firms became important employers in the 1960s and continued to be so until the 1980s.

Oysters

The Colchester native oyster, *Ostrea edulis*, has been locally important throughout history. It was an abundant and therefore cheap source of food for the local population and shells are often found in archaeological excavations. Originally fished from their natural habitats in the Colne estuary, they were later farmed. They became popular in Elizabethan times, prices rose, and demand became so high that there was concern that stocks would become irreparably depleted. Controls on fishing were introduced and traditions established, many of which remain today and are reflected in the official opening of the season and the annual oyster feast. Today, the introduced Pacific (rock) oyster, *Crassostrea gigas*, is also cultivated.

Modern day Colchester borough

Colchester is one of Britain's fastest growing towns. Its access to London, Harwich sea port, Stansted airport, local tourist areas etc. from roads such as the A12 and A120, together with rail links and public transport, aid its strong growth. A 1,000-space park-and-ride facility opened in April 2015 in the north of Colchester, aimed at further facilitating sustainable economic and housing growth by enabling increased numbers of people to access Colchester town centre via the Northern Approach Road.

Much of the earlier heavy industry has now declined, with an increased emphasis on smaller scale businesses and light/general industry, storage and distribution, research and education, leisure industries and tourism, retail and the creative sector. There have been recent important developments at many locations, including Colchester Hospital University, Essex University Research Park, Colchester Institute, Colchester Sixth Form College, Severalls Industrial Park, Cuckoo Farm, Firstsite and a new Magistrates' Court. Some former industrial sites have been, or are soon to be, redeveloped for other purposes, e.g., Paxman's sites, Flakt Woods sites, the former Betts site, Wivenhoe shipyard, Rowhedge

Wharf. Some sites are in the process of expansion, for example, Tiptree jam factory, the Northern Gateway, Williams and Griffin/Fenwick.

All Councils have a legal duty to meet projected housing needs and plan for future growth and must follow central Government policy. Colchester (together with Tendring District Council and Essex County Council) is taking the Garden Community approach to think strategically about future housing needs, including the long-term vision for The Tendring Colchester Borders Garden Community, which would involve the provision of 7,500 – 9,000 homes.

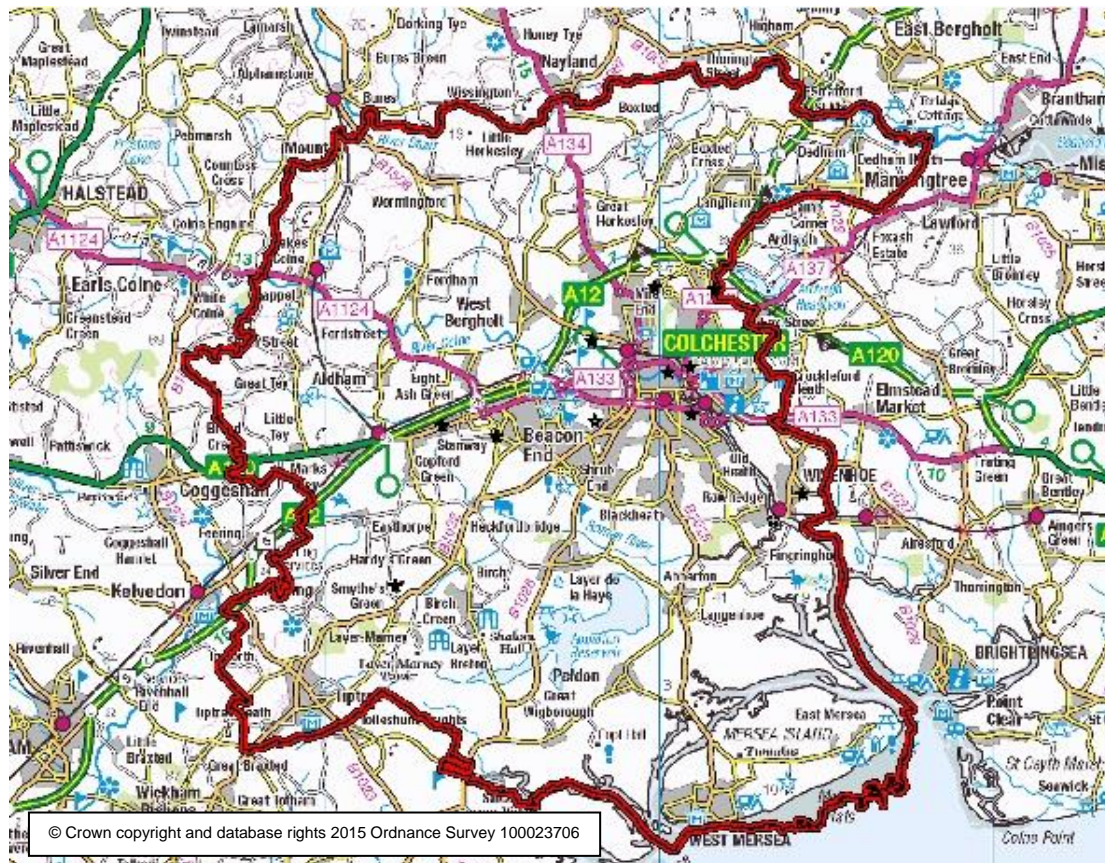


Figure 1: Map of the Colchester Borough (boundary shown in red)

Natural characteristics

Geography

The Colchester borough covers an area of approximately 125 square miles and is located in the north-east of Essex. It borders Suffolk (Babergh) to the north; Tendring District to the east; Braintree District to the West; Maldon District to the south-west. In the south-east of the borough is Mersea Island, sitting between the estuaries of the River Colne and River Blackwater; these in turn feed into the Thames Estuary.

[Key statistics for Colchester collated from the latest Census data](#) (2011) estimate Colchester's population at 197,200. It is well located in the north of Essex, with access to major routes to London, Cambridge, Ipswich, Stansted Airport and the Haven Gateway ports and is in the process of considerable regeneration and growth.

Colchester has the only Area of Outstanding Natural Beauty (AONB) in Essex, at Dedham Vale.

Geology

Our Bedrock Geology is sedimentary: that is, mainly Thames Group clay, silt, sand and gravels, formed 34 to 36 million years ago in the Palaeogene period in shallow seas, with chalk beneath.

The overlying Superficial Deposits are chiefly Glacial Sands and Gravels, Till Diamicton and Lacustrine deposits, formed up to 3 million years ago in the Quaternary Period. More detail can be found at the [British Geological Survey](#) website.

Consequently, Essex is one of the largest producers of sand and gravel (aggregates) in the UK. Other minerals produced include silica sand, brickearth, brick clay and chalk. All are worked at surface level (there are no underground mines in the county). Brick clay is currently extracted at Marks Tey (one of only two working sites in Essex) and used in the small-scale manufacture of bricks, roof tiles etc.

The extraction process leads to the creation of pits: often, these are infilled (including waste disposal) as a part of the restoration process. Older sites have not always been managed during operation, restoration or after-use with the same standards and regulations, when compared to today. These sites are therefore potential sources of contamination. The [Essex County Council Minerals Local Plan](#) (2014) discusses the restoration and aftercare of modern mineral sites.

There are no hard rock deposits in the county, so this type of material must be imported into the borough.

Groundwater and hydrogeology

The Gov.uk website provides information on [groundwater protection](#) and groundwater source protection zones (SPZs) can be located from the [DEFRA Magic Map](#).

There are two types of Aquifer (water-bearing permeable rock, or drift deposits from which groundwater can be extracted for drinking water supply and important to surface water flows and wetland ecosystems):

- Superficial or Drift (permeable unconsolidated deposits e.g., sands and gravels).
These are generally designated as:

- ‘Secondary A’ (permeable layers capable of supporting water supplies at a local scale, and sometimes an important source of base flow to rivers) in the east of the borough;
- ‘Secondary (undifferentiated)’ (variable characteristics) in the west; ‘Secondary B’ (store and yield limited amounts of groundwater) in the north east;
- ‘Unproductive Strata’ (low permeability and negligible significance for water supply or river base flow) in the south.

- Bedrock (solid permeable formations e.g., sandstone, chalk and limestone). With the exception of a small area in the Stour Valley, in the vicinity of Little Horkesley (where there are ‘Principal’ and ‘Secondary A’ aquifers), there are no Bedrock Principal Aquifers (high level of water storage) within the borough.

The Thames Group bedrock (predominantly clay up to 140 m thick) often effectively confines the underlying aquifer (BGS, 2015). This is important when considering the downward migration of contaminants.

There are some private water supplies within the borough (sources may be from a well, borehole or spring) and are very vulnerable to contamination. All such supplies must be [registered with the Council](#) in accordance with the [Private Water Supplies \(England\) Regulations 2016](#) (as amended 2018).

Hydrology

Colchester is one of the driest parts of the UK. However, in the future, changes in climatic conditions, including floods, droughts and sea level rise may affect it. This could cause milder and wetter winters and hotter, drier summers. By 2080, sea levels may have risen by 36cm on the Essex coast, altering the physical extent of unprotected coastlines. There are likely to be more frequent, severe weather conditions (such as storms, flood events, strong winds and extreme hot or cold temperatures). Drought periods may become more commonplace, with implications for the availability of water supplies and impacts on water tables and river levels (*Essex Minerals Local Plan, 2014*).

Habitats and the natural environment

The borough has evolved a range of habitats and landscapes that support a diverse range of species. The coastline habitats are particularly important ecologically and include extensive areas of saltmarsh, coastal grazing marshes, mudflats and economically important oyster fisheries. Many are protected under international and national statutes. Two Special Protection Areas (Colne Estuary and Blackwater Estuary) help protect the coastal habitats and the species living in them and they have further protection through designation as Ramsar Sites, as a Special Area of Conservation (Mid Essex Estuaries), and through the Colne Estuary Site of Special Scientific Interest (SSSI). The Colne and Blackwater estuaries have recently been designated (2013) as part of a larger Marine Conservation Zone. These are

designations designed to protect species and habitats under international agreements.

The borough's coastline is given added protection through the Coastal Protection Belt designation in our existing Local Plan.

Inland, Abberton Reservoir is a designated Special Protection Area. The northern part of the borough falls within the Dedham Vale Area of Outstanding Natural Beauty, offering the highest level of protection in relation to landscape and scenic beauty. In addition, there are currently 168 designated Local Wildlife Sites, covering 1,957 hectares. River corridors and green spaces contribute to the character of the borough, providing habitats for wildlife.



A key challenge in relation to the natural environment is balancing the delivery of new development against the need to protect the borough's rich biodiversity and geodiversity. Even brownfield sites that have been vacant for longer periods may provide important habitats (CBC, *Issues and Options*, January 2015).

Visitor resources – culture, leisure and heritage

The richness of Colchester's heritage is reflected by the statutory protection awarded to many of the borough's heritage assets. Colchester has 22 conservation areas and 2,056 listed buildings. The borough also has four parks on the National Register of Special Historic Interest, as well as Scheduled Monuments at Gosbecks and around the Iron Age dyke system. The Council works closely with English Heritage, Essex County Council and conservation groups to ensure that archaeological and historic assets are identified, documented and preserved. The Council has adopted a Local List to ensure that the historic value of locally important heritage assets is a material consideration in the determination of planning applications. Additionally, the borough has a wealth of undesignated sites of high archaeological potential (CBC, *Issue and Options*, January 2015).

The Council owns and manages three country parks, and eleven nature reserves.

There are a variety of museums, heritage sites, leisure and cultural facilities, such as: Leisure World and Aqua Springs, Castle Park cricket ground, The Minories gallery, Mercury Theatre, Essex University, Colchester Community Stadium, Colchester Arts Centre, Colchester Zoo. Other tourist destinations and great places to walk and cycle include Dedham Vale, Mersea Island, Tiptree, Wivenhoe, Fingringhoe and Layer Marney.

Our approach to strategic inspection

We have taken into account the characteristics of our area and used these to consider the risks posed to relevant receptors in the following manner:

Initial prioritisation

A database had been started by Colchester Borough Council in connection with the register which would have been required by section 143 of the Environmental Protection Act 1990 (this section eventually not brought into force, largely due to concerns over blight and ultimately replaced with Part 2A). In 2001, when Part 2A was first introduced, this data was incorporated into a database and mapping layer created in a county-wide initiative (by the Essex Environmental Protection Study Group, later to become the Essex Contaminated Land Consortium sub-group). This initiative created a broad preliminary assessment of risk, based on an assessment of historic maps held at Essex County Council. Sites of previously potentially contaminative uses (i.e., potential sources) were identified, purely based on historic use. These areas were digitised and overlaid on current maps (to identify any receptors which might be relevant). A “broad brush” scoring system was then derived, in general accordance with CLR6 (DETR, 1995), but adapted for our use. This was based on the perceived risks of the former uses, vulnerability of the receptors (human health scoring most highly) and a pathway between the two inferred, based on distance from the source.

This was in no way considered to be definitive, but did create a list of sites to consider in more detail, and in an order which seemed logical i.e., those matters which we would expect to be of greatest concern scoring most highly. The original methodology used is appended.

The sites identified have only the *potential* to be contaminated, since this assessment has been based on historical use alone (and their proximity to current uses). The aim was to produce an initial list which could then be looked at more closely, to ascertain whether or not any detailed investigation and ultimately, remediation, would be required. It does not necessarily mean that these sites *are* contaminated, as the previous use may not have caused any contamination, contamination may have been cleaned up but not recorded, or there may not be any contamination linkage to relevant receptors. Equally, there may be contaminative uses of land which have not been recorded by Colchester Borough Council (owing to information shortages like the possession of incomplete historic map editions, incomplete evaluation of maps and records which are held, incidents that the Council are not aware of etc.).

This initial assessment must be considered as a working document which is under continual review.

It is also important to note that the priority categories established by this initiative are not to be confused with the categories introduced by the 2012 Statutory Guidance.

Prioritisation of detailed inspection activity

When we are carrying out detailed inspection of land in accordance with Part 2A, we will seek to give priority to particular areas of land that we consider most likely to pose the greatest risk to human health or the environment. This will be directed by the initial scoring system devised by the Essex Contaminated Land Consortium, and we will inspect the highest risk sites (“Priority 1”) first.

In some cases, the process of strategic inspection, including prioritisation of detailed inspection activities, may give rise to property blight issues. We will seek to minimise or reduce such potential blight as far as we consider reasonable, including moves by the landowner or other interested party, provided we are satisfied with the robustness of the information.

B) Detailed inspection

If we identify land where we consider there is a reasonable possibility that a significant contaminant linkage (as defined) exists, we will inspect the land to obtain sufficient information to decide whether it is contaminated land. The timing of such inspection will be subject to our approach to prioritisation of detailed inspection. However, the rate at which these sites are inspected will be determined by the budgetary and council officer resources available at the time. For this reason, no timetable has been produced.

Funding

Local authorities are required to investigate potentially contaminated sites in accordance with the Statutory Guidance and, where necessary, at their own expense. Where sufficient evidence is obtained to conclude that sites are Contaminated Land, the “polluter pays” principle will apply, should more investigations, prevention or clean-up (“remediation”) be necessary. Where the polluter cannot be found or is otherwise not liable, the current owner/occupier may become liable. Where no responsible person(s) can be found, the local authority may be required to undertake this work at their own expense.

Prior to April 2014, local authorities were able to apply for Department for Environment, Food & Rural Affairs (DEFRA) funding from the Contaminated Land Capital Grants Scheme in such situations. However, funding has been reduced in recent years, from £17.5m in 2009/10 to £2m for 2013/14 and DEFRA have now ceased supporting these costs altogether.

DEFRA have advised that they now expect the vast majority of Contaminated Land to be remediated through the planning process, where (after remediation) as a minimum, land should not be capable of being determined as Contaminated Land under Part 2A.

However, the Council still has a statutory duty to investigate and, where necessary, remediate Contaminated Land. Consequently, should any relevant sites now come to the Council’s attention, and should investigation and/or remediation by the local authority be required under Part 2A, this will need to be funded entirely from the Council’s existing budgets.

We may be able to recover some or all of the costs of remediation from the polluter or current owner/occupier of the land, in accordance with the guidance, on a case-by-case basis and avoiding undue hardship.

We will minimise unnecessary burdens on the taxpayer, businesses and individuals by encouraging voluntary action to deal with land contamination issues as far as reasonable and practicable

Powers of entry

We will consult the landowner before inspecting the land unless there is a particular reason why this is not possible. Where the owner refuses access, or the landowner cannot be found, we will consider using statutory powers of entry provided under section 108 of the Environment Act 1995. We will first be satisfied that there is a reasonable possibility that a significant contaminant linkage may exist on the land. We will not use statutory powers of entry to undertake intrusive investigations, including the taking of sub-surface samples, if:

- We have already been provided with appropriate, detailed information on the condition of the land
- A relevant person offers to provide such information within a reasonable and specified time, and then provides such information within that time.

We will carry out any intrusive investigation in accordance with appropriate good practice and technical procedures for such investigations.

Where the land is considered to meet the descriptions of a Special Site, we will, where necessary, authorise a person nominated by the Agency to exercise the powers of entry.

Ceasing inspection

If at any stage we consider, on the basis of information obtained from inspection activities, that there is no longer a reasonable possibility that a significant contaminant linkage exists on the land, we will not carry out any further inspection in relation to that linkage and will redirect our efforts to the inspection of other land, in line with our approach to prioritisation.

Special sites

Where the Environment Agency carries out an inspection on behalf of Colchester Borough Council, our regulatory functions (including the inspection duty and the decision as to whether land is contaminated land) remain our sole responsibility. The Agency should advise us of its findings so that we can carry out these functions.

Risk assessment

Part 2A takes a risk-based approach to defining contaminated land. “Risk” means the combination of:

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

All soils contain substances that could be harmful to human or environmental receptors, although in the very large majority of cases the level of risk is likely to be very low. In conducting risk assessment under the Part 2A regime, we will aim to focus on land which might pose an unacceptable risk.

Risk assessments will be based on information which is:

- Scientifically-based;
- Authoritative;
- Relevant to the assessment of risks arising from the presence of contaminants in soil; and
- Appropriate to inform regulatory decisions in accordance with Part 2A and the Statutory Guidance.

Current use

Under Part 2A, risks will be considered only in relation to the current use of the land. This includes the future use carried out in accordance with any existing planning permission, when it will be assumed that any remediation which is the subject of a condition or planning obligation will be carried out.

Contaminant linkages

Under Part 2A, for a relevant risk to exist there needs to be one or more contaminant-pathway-receptor linkages – “contaminant linkage” – by which a relevant receptor might be affected by the contaminants. This means that for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.

- 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 “receptor” is something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters.
- A “pathway” is a route by which a receptor is or might be affected by a contaminant.

The term “contaminant linkage” means the relationship between a contaminant, a pathway and a receptor. All three elements of a contaminant linkage must exist in relation to particular land before the land can be considered potentially to be contaminated land under Part 2A, including evidence of the actual presence of contaminants.



Figure 1: Contaminant linkage

The term “significant”

- “Significant contaminant linkage” means a contaminant linkage which gives rise to a level of risk sufficient to justify a piece of land being determined as contaminated land.
- “Significant contaminant” means the contaminant which forms part of a significant contaminant linkage.

Groups of contaminants

Where we encounter land where risks are presented by groups of substances which are likely to behave in the same manner, we may treat such groups of contaminants as being in effect a single contaminant and multiple contaminant linkages as being in effect a single contaminant linkage. This approach will be scientific and stated clearly in relevant documentation.

The process of risk assessment

The process of risk assessment involves understanding the risks presented by land, and the associated uncertainties. This is usually developed and communicated in the form of a “conceptual model” in a staged approach to risk assessment. This often involves a preliminary risk assessment, informed by desk-based study, a site visit and walkover, a generic quantitative risk assessment and various stages of more detailed quantitative risk assessment.

The process should normally continue until it is possible for us to decide:

- That there is insufficient evidence that the land might be contaminated land to justify further inspection and assessment; and/or
- Whether or not the land is contaminated land.

Risk assessment will be based on risks that are reasonably likely to exist, not what is hypothetically possible.

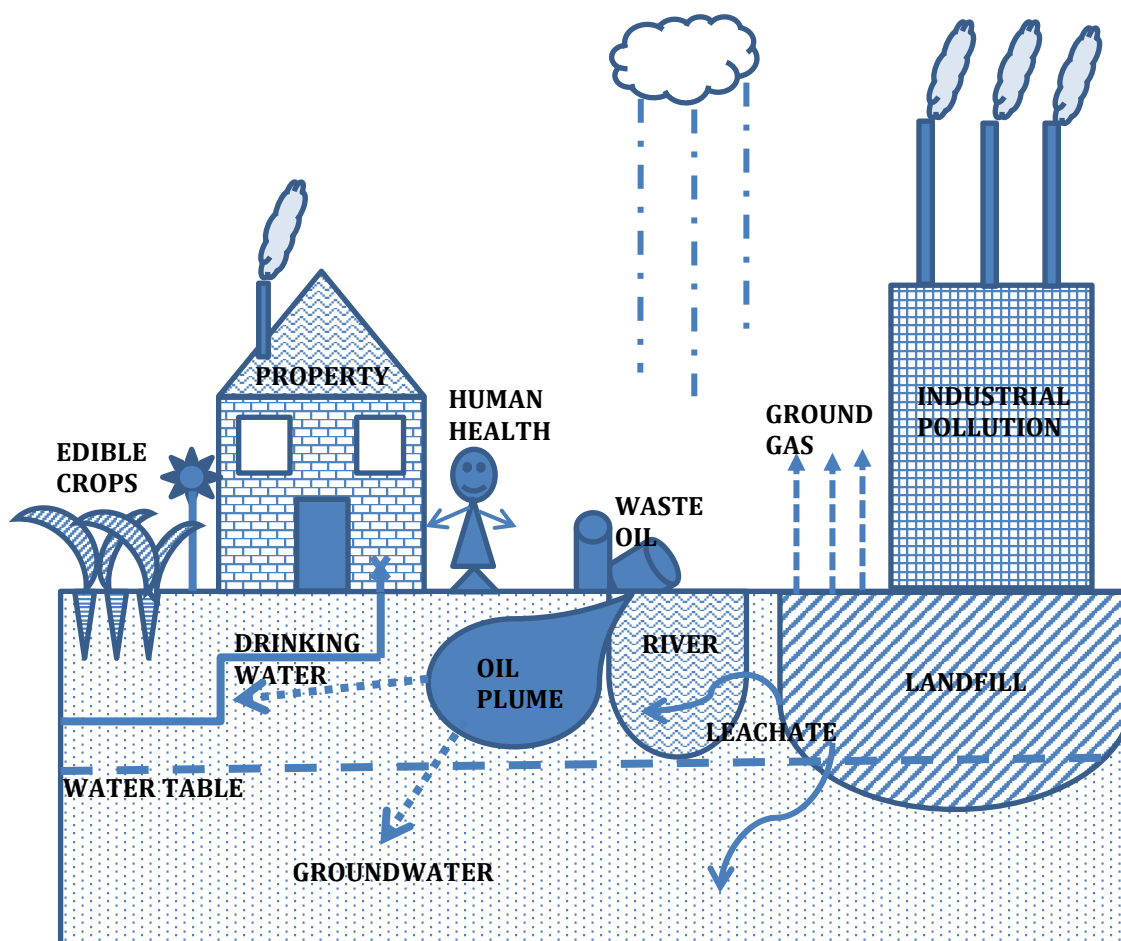


Figure 2: Example of a Conceptual Model

Using external expertise during risk assessment

In complex cases we may consider it necessary to bring in external expertise. When choosing specialist consultants, we will ensure that they are appropriately qualified and competent to undertake the work.

External experts may advise us on regulatory decisions under the Part 2A regime, but the decisions themselves remain the sole responsibility of Colchester Borough Council.

“Normal” presence of contaminants

The Part 2A regime was introduced to help identify and deal with land which poses unacceptable levels of risk. It is not intended to apply to land with levels of contaminants in soil that are commonplace and widespread (unless there is a particular reason to consider otherwise). Normal presence of contaminants could include those caused by low level diffuse pollution and common human activity other than specific industrial processes, e.g., pollution caused by historic use of leaded

petrol and the presence of benzo(a)pyrene from vehicle exhausts, and the spreading of domestic ash in gardens at levels that might reasonably be considered typical.

The [British Geological Survey](#) website provides some information to aid these decisions.

Land that is at or close to normal levels of particular contaminants will not usually be considered further in relation to the Part 2A regime.

Use of generic assessment criteria and other technical tools

We may use appropriate and scientifically robust “generic assessment criteria” (GACs) and other technical tools as screening tools in generic quantitative human health risk assessment, to help us decide when land can be excluded from the need for further inspection and assessment, or when further work may be warranted.

Examples of GACs:

- [Soil Guideline Values](#) (SGVs) produced by the Environment Agency.

Other published GACs produced on similar basis using the Environment Agency [Contaminated Land Exposure Assessment \(CLEA\)](#) methodology:

- *The LQM/CIEH S4ULs for Human Health Risk Assessment.* Nathanail, C.P. et al, 2015
- *Soil Generic Assessment Criteria for Human Health Risk Assessment.* EIC /AGS/CL:AIRE, 2010

The statutory guidance advises us that new technical tools and advice may be developed and used to help us apply the Category 1 - 4 approach in relation to specific substances or situations with respect to human health.

The government has also issued a set of guidance documents which the Council has used to aid identification of industrial processes and potential contaminants - [DoE Industry Profiles](#), 1995 available from the [CL:AIRE website](#).

GACs:

- **Cautious estimates of levels of contaminants in soil - considered to be no or minimal risk to health**
- **Levels of contamination from which risks are generally well within Category 4**
- **Indicate when land is very unlikely to be SPOSH***
- **Not direct indicators that SPOSH exists**
- **Not screening levels for the boundary between Categories 3 & 4**
- **Not indicators of levels of contamination above which detailed risk assessment would automatically be required**
- **Not generic remediation targets under Part 2A or Planning**

* “significant possibility of significant harm to human health”

Category 4 screening levels (C4SLs)

Since the publication of the Statutory Guidance, DEFRA have produced [Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - SP1010, 2014](#). DEFRA consider these to be a simple test for deciding when land is suitable for use and definitely not contaminated land. The C4SLs are stated to be more pragmatic (whilst still strongly precautionary) when compared to existing generic screening levels and could be used as generic screening criteria as part of a Generic Quantitative Risk Assessment (GQRA). However, they do describe a higher level of risk than the currently or previously available SGVs. Only 6 substances (cadmium, benzo(a)pyrene, benzene, arsenic, lead and chromium VI) have been derived for different land uses: “Residential” (with and without home-grown produce), “Allotments”, “Commercial” and two alternative types of “Public Open Space”.

Recognising and dealing with uncertainty

All risk assessments of potentially contaminated land involve uncertainty, for example owing to scientific uncertainty over the effects of substances and the assumptions that lie behind predicting what might happen in the future.

The uncertainty underlying risk assessments means there is unlikely to be any single “correct” conclusion on precisely what is the level of risk posed by land, and it is possible that different suitably qualified people could come to different conclusions when presented with the same information. Colchester Borough Council will use our judgement to form a reasonable view of what we consider the risks to be on the basis of a robust assessment of available evidence.

Risk summaries

Once we have completed our detailed inspection and assessment of particular land and have sufficient understanding of the risks to take relevant regulatory decisions, we will produce a risk summary for any land where, on the basis of its risk assessment, we consider it is likely that the land in question may be determined as contaminated land. The risk summary will explain our understanding of the risks and other relevant factors. The risk summary will be understandable to the layperson, including the owners of the land and members of the public who may be affected by the decision. We will not proceed to formal determination of land as contaminated land unless a risk summary has been prepared.

Risk summaries will as a minimum include:

- A summary of our understanding of the risks, including a description of: the contaminants involved; the identified contaminant linkage(s); the potential impact(s); the estimated possibility that the impact(s) may occur; and the timescale over which the risk may become manifest.
- A description of our understanding of the uncertainties behind the assessment.
- A description of the risks in context, e.g., setting the risk in local or national context, describing the risk relative to other risks that receptors might be exposed to, in a way which is understandable and relevant to the layperson.
- A description of our initial views on possible remediation (not a detailed appraisal). It will include a broad description of what remediation might entail; how long it might take; likely effects of remediation works on local people and businesses; how much difference it is expected to make to the risks posed by the land; and our initial assessment of whether remediation is likely to produce a net benefit, having regard to the broad objectives of the regime. Where land (if it were determined as contaminated land) would be likely to be a special site, the views of the Environment Agency will be taken into account in producing this description.

We will not produce risk summaries:

- For land which will not be determined as contaminated land (e.g., land that would be in Categories 3 and 4).
- For land which has been prioritised for detailed inspection but which has not yet been subject to risk assessment.
- For land determined as contaminated land before April 2012.

Definition of contaminated land

Part 2A of the 1990 Act defines “contaminated land” and provides guidance on how we should determine which land is contaminated land and which is not.

Relevant sections of the Act include:

- Section 78A(2): “contaminated land” is 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 caused, or there is a significant possibility of such pollution being caused;
- Section 78A(4): “Harm” means 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.
- Section 78A(5): The questions – (a) what harm or pollution of controlled waters is to be regarded as “significant”, and (b) whether the possibility of significant harm or of significant pollution of controlled waters being caused is “significant”, shall be determined in accordance with guidance issued for the purpose by the Secretary of State.
- Section 78A(6): Provision for different degrees of possibility to be regarded as “significant” (or as not being “significant”) in relation to different descriptions of significant harm or of significant pollution.

Significant harm to human health



In all cases the harm should be directly attributable to the effects of contaminants in, on or under the land on the body(ies) of the person(s) concerned.

Conditions for determining that land is contaminated land on the basis that significant harm is being caused would exist where:

- We have carried out an appropriate, scientific and technical assessment of all the relevant and available evidence; and
- On the basis of that assessment, we are satisfied on the balance of probabilities that significant harm is being caused (i.e., that it is more likely than not that such harm is being caused) by a significant contaminant(s).

The following health effects should always be considered to constitute significant harm to human health: death, life threatening diseases (e.g., cancers), other diseases likely to have serious impacts on health, serious injury*, birth defects and impairment of reproductive functions.

*Physical injury would include injury caused by chemical and biochemical properties of substances, not by physical properties of substances, e.g., injury caused by falling onto sharp or hard objects made of relevant substances.

Other health effects may be considered to constitute significant harm. We will only conclude that harm is significant if we consider that treating the land as contaminated land would be in accordance with the broad objectives of the regime.

If we decide that harm is occurring but it is not significant harm, we will consider whether such harm might be relevant to consideration of whether or not the land poses a significant possibility of significant harm (“SPOSH”).

Significant possibility of significant harm to human health

When deciding whether or not SPOSH to human health exists we will:

1. First understand the *possibility of significant harm*
2. Then decide whether or not the *possibility of significant harm is significant*

1. Possibility of significant harm to human health

In assessing the possibility of significant harm to human health from the land and associated issues, we will act in accordance with the Statutory Guidance.

This must include:

- The estimated likelihood that significant harm might occur, taking account of the current use of the land.
- The estimated impact if the significant harm did occur, i.e., the nature, seriousness and extent of the harm (how many people might suffer it).

Having completed our estimation of the possibility of significant harm, we will produce a risk summary.

2. Deciding whether a possibility of significant harm is significant (human health)

In deciding whether the possibility of significant harm being caused is significant, we must decide whether the possibility of significant harm posed by contamination in, on or under the land is sufficiently high that regulatory action should be taken to reduce it, with all that that would entail.

In deciding whether or not land is contaminated land on grounds of significant possibility of significant harm to human health, we will use the categorisations described in the Statutory Guidance. Categories 1 and 2 encompass land which is capable of being determined as contaminated land on grounds of significant

possibility of significant harm to human health. Categories 3 and 4 encompass land which is not capable of being determined on such grounds.

Category 1: Human health

We will assume that a significant possibility of significant harm exists in any case where we consider there is an unacceptably high probability, supported by robust science-based evidence, that significant harm would occur if no action is taken to stop it. Land will be deemed to be a Category 1: Human Health case where:

- We are aware that similar land or situations are known, or are strongly suspected to have caused such harm before; or
- We are aware that similar degrees of exposure to the contaminant(s) are known or strongly suspected to have caused such harm before;
- We consider that significant harm may already have been caused by contaminants in, on or under the land, and that there is an unacceptable risk that it might continue or occur again if no action is taken.

Category 4: Human health

We will not assume that land poses a significant possibility of significant harm if we consider that there is no risk or that the level of risk posed is low.

We will decide that the land is a Category 4: Human Health case as soon as we consider we have the evidence (at any stage during risk assessment)

The following types of land will be placed into Category 4: Human Health:

- Land where no relevant contaminant linkage has been established.
- Land where there are only normal levels of contaminants in soil.
- Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria, or relevant technical tools or advice.
- Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to in the normal course of their lives.
- Land (other than the types described above) which after a detailed quantitative risk assessment, we are satisfied poses a sufficiently low level of risk.

Categories 2 and 3: Human health

For land that cannot be placed into Categories 1 or 4, we will decide whether the land should be placed into either: (a) Category 2: Human Health, in which case the land would be capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health; or (b) Category 3: Human

Health, in which case the land would not be capable of being determined on such grounds.

The decision is a positive legal test - the starting assumption will be that land does not pose a significant possibility of significant harm unless there is reason to consider otherwise

- **Category 2: Human Health** – if there is a strong case for considering that the risks from the land are of sufficient concern that the land poses a significant possibility of significant harm. This may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless we consider on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.
- **Category 3: Human Health** - the strong case does not exist, and therefore the legal test for significant possibility of significant harm is not met. This may include land where the risks are not low, but nonetheless we consider that regulatory intervention under Part 2A is not warranted. Placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. We will consider making available the results of our inspection and risk assessment to the owners/occupiers of Category 3 land.

In making our decision on whether land falls into Category 2 or Category 3, we will first consider our assessment of the possibility of significant harm to human health, including the estimated likelihood of such harm, the estimated impact if it did occur, the timescale over which it might occur, and the levels of certainty attached to these estimates. If we consider, on the basis of this consideration alone, that the strong case does or does not exist, we will make our decision on whether the land falls into Category 2 or Category 3 on this basis, regardless of other factors.

If we cannot make a decision we will consider other relevant factors, including:

- The likely direct and indirect health benefits and impacts of regulatory intervention, e.g., benefits of reducing or removing the risk; risks from contaminants being mobilised during remediation; any indirect impacts such as stress-related health effects.
- Our initial estimate of what remediation would involve; how long it would take; what benefit it would be likely to bring; whether the benefits would outweigh the financial and economic costs; and any impacts on local society or the environment from taking action that we consider to be relevant.

If it is not clear to us that the health benefits of remediation would outweigh the health impacts, we will presume the land falls into Category 3 unless there is strong reason to consider otherwise

In making our consideration we are not required to make a detailed assessment. For example, the consideration should not necessarily involve quantification of the impacts, particularly if we consider it is not possible or reasonable to do so, and we are not expected to produce a detailed cost-benefit or sustainability analysis. Rather, we are expected to make a broad consideration of factors we consider relevant to achieving the aims.

If, having taken the above factors into account, we still cannot decide whether or not a significant possibility of significant harm exists, we will conclude that the legal test has not been met and the land will be placed in Category 3.

Expert Panel

A National Panel of Experts was set up to support Local Authorities in making decisions on whether land is or is not contaminated within the meaning of Part 2A (i.e., borderline Category 2 or 3 sites). The Panel was made up of contaminated land experts including Local Authorities and the Environment Agency who acted in a voluntary capacity. The panel was disbanded in June 2018.

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



In considering non-human receptors, we will only regard receptors and forms of harm described in Tables 1 and 2 of the Statutory Guidance (see Appendix 2).

In making such decisions we will have close regard to the Statutory Guidance and will only consider determining land as contaminated land if we are satisfied it would be in accordance with the broad aims of the Statutory Guidance.

In considering “ecological system effects”, we will consult Natural England and have regard to its comments before deciding whether or not to make a determination.

Significant pollution of controlled waters and significant possibility of such pollution



In establishing whether significant pollution of controlled waters is being caused (where controlled waters are the receptor, not the pathway in the contaminant linkage), or whether there is a significant possibility of such pollution being caused, we will have regard for any technical guidance issued by the

Environment Agency. If we consider it likely that land might be contaminated land on such grounds, we will consult the Agency and have strong regard to the Agency's advice.

Pollution of controlled waters

Under section 78A(9) of Part 2A the term "pollution of controlled waters" means the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter. The term "controlled waters" in relation to England has the same meaning as in Part 3 of the Water Resources Act 1991, except that "ground waters" does not include waters contained in underground strata but above the saturation zone.

Given that the Part 2A regime seeks to identify and deal with significant pollution (rather than lesser levels of pollution), we will seek to focus on pollution which:

- May be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems;
- May result in damage to material property; or
- May impair or interfere with amenities and other legitimate uses of the environment.

Significant pollution of controlled waters

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

- Pollution equivalent to "environmental damage" to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2015, but which cannot be dealt with under those Regulations.

- 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.
- A breach of a statutory surface water Environment Quality Standard
- 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)).

In some circumstances, we may consider that the following types of pollution may constitute significant pollution:

- Significant concentrations of hazardous substances or non-hazardous pollutants in groundwater; or
- Significant concentrations of priority hazardous substances, priority substances or other specific polluting substances in surface water; at an appropriate, risk-based compliance point. We will only conclude that pollution is significant if we consider that treating the land as contaminated land would be in accordance with the broad objectives of the regime. This will normally mean that we will conclude that less serious forms of pollution are not significant. In such cases we will consult the Environment Agency.

The following types of circumstance will not be considered to be contaminated land on water pollution grounds:

- The fact that substances are merely entering water and none of the conditions for considering that significant pollution is being caused set out above are being met.
- The fact that land is causing a discharge that is not discernible at a location immediately downstream or down-gradient of the land (when compared to upstream or up-gradient concentrations).
- Substances entering water in compliance with a discharge authorised under the Environmental Permitting Regulations.

Significant pollution of controlled waters is being caused

In deciding whether significant pollution of controlled waters is being caused, we will consider that this test is only met where we are satisfied that the substances in question are continuing to enter controlled waters; or that they have already entered the waters and are likely to do so again in such a manner that past and likely future entry in effect constitutes ongoing pollution.

Land will not be determined as contaminated land on grounds that significant pollution of controlled waters is being caused where:

- The relevant substance(s) are already present in controlled waters;
- Entry into controlled waters of the substance(s) from land has ceased; and
- It is not likely that further entry will take place.

Significant possibility of significant pollution of controlled waters

In deciding whether or not a significant possibility of significant pollution of controlled waters exists, we will first understand the possibility of significant pollution of controlled waters posed by the land, and the levels of certainty/uncertainty attached to that understanding, before we go on to decide whether or not that possibility is significant. The term “possibility of significant pollution of controlled waters” means the estimated likelihood that significant pollution of controlled waters might occur. In assessing the possibility of significant pollution of controlled waters from land, we will act in accordance with the advice on risk assessment in the Statutory Guidance.

To decide that the possibility of significant pollution of controlled waters is significant is a positive legal test:

- we reasonably need to believe that there is a significant possibility of such pollution, rather than to demonstrate that there is not.

Before making our decision on whether a given possibility of significant pollution of controlled waters is significant, we will consider:

- The estimated likelihood that the potential significant pollution of controlled waters would become manifest; the strength of evidence underlying the estimate; and the level of uncertainty underlying the estimate.
- The estimated impact of the potential significant pollution if it did occur. This should include consideration of whether the pollution would be likely to cause a breach of European water legislation or make a major contribution to such a breach.
- The estimated timescale over which the significant pollution might become manifest.
- Our initial estimate of whether remediation is feasible, and if so what it would involve and the extent to which it might provide a solution to the problem; how long it would take; what benefit it would be likely to bring; and whether the benefits would outweigh the costs and any impacts on local society or the environment from taking action.

We will consider these factors in the context of the broad objectives of the regime. We will also consider how the factors interrelate (e.g., likelihood relative to impact). We will then decide which of the following categories the land falls into. Categories 1 and 2 would comprise cases where we consider that a significant possibility of significant pollution of controlled waters exists. Categories 3 and 4 would comprise cases where we will consider that a significant possibility of such pollution does not exist.

- **Category 1 (Water)** - there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution would occur if nothing were done to stop it.

- **Category 2 (Water)** - the strength of evidence to put the land into Category 1 does not exist but, on the basis of the available scientific evidence and expert opinion, we consider that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention).
- **Category 3 (Water)** - the tests set out in Categories 1 and 2 are not met, and therefore regulatory intervention under Part 2A is not warranted. This category will include land where we consider that it is very unlikely that serious pollution would occur.
- **Category 4 (Water)** - there is no risk, or that the level of risk posed is low. In particular, we will consider that this is the case where no contaminant linkage has been established, including water pollution similar to that which might be caused by “background” contamination.

Radioactive contamination of land



The regime was modified to include a duty to inspect for radioactive contaminated land (covered by separate [Radioactive Contaminated Land Statutory Guidance](#))

We are only required to inspect land for radioactive contamination where we have reasonable grounds (defined in the Statutory Guidance).

Once we determine a site as radioactive contaminated land it becomes a ‘special site’ and the Environment Agency takes over as the regulator.

Determination of contaminated land

Deciding that land is not contaminated land - written statements

Where we inspect land that we then consider is not contaminated land (i.e., little or no evidence), we will issue a written statement to that effect (rather than coming to no formal conclusion) to minimise unwarranted blight. The statement will make clear that on the basis of our assessment, we have concluded that the land does not meet the definition of contaminated land under Part 2A. We may choose to qualify our statement (e.g., given that our Part 2A risk assessment may only be relevant to the current use of the land).

The nature of soil contamination means it is never possible to know the exact contamination status of any land with absolute certainty, and that scientific understanding of risks may evolve over time. However, such a lack of certainty will not stop us from deciding that land is not contaminated land. The starting assumption of Part 2A is that land is not contaminated land unless there is reason to consider otherwise.

We will keep a record of our reasons for deciding that land is not contaminated land. We will inform the owners of the land of our conclusion and give them a copy of the written statement. We will also consider informing other interested parties (for example occupiers of the land and owners and occupiers of neighbouring land) and whether to publish the statement. The statement will be issued within a timescale that we consider to be reasonable, having regard to the need to minimise unwarranted burdens to persons likely to be directly affected, in particular the landowner, and occupiers or users of the land where relevant.

Determining that land is contaminated land

We have the sole responsibility for determining whether any land appears to be contaminated land. However, in making such decisions we may rely on information or advice provided by another body such as the Environment Agency, or a suitably qualified experienced practitioner appointed for that purpose.

Before making any determination, we will have identified one or more significant contaminant linkage(s), and carried out a robust, appropriate, scientific and technical assessment of all the relevant and available evidence. If we consider that conditions for considering land to be contaminated land do not exist we will not decide that the land is contaminated land.

In the case of any land which, following determination as contaminated land, would be likely to meet one or more of the descriptions of a “Special Site” set out in the Contaminated Land Regulations 2006, we will consult the Environment Agency before deciding whether or not to determine the land, providing the Agency with a draft record of the determination that we are required to prepare. We will take the Agency’s views into full consideration and will strive to ensure we have the Agency’s agreement to our decision (although the decision is for us to make subject to the provisions of Part 2A).

The Four Grounds for Determination (non-radioactive contaminated land)

- Significant harm is being caused to a human, or relevant non-human, receptor
- There is a significant possibility of significant harm being caused to a human, or relevant non-human, receptor
- Significant pollution of controlled waters is being caused
- There is a significant possibility of significant pollution of controlled waters being caused

For Radioactive Contaminated Land:

- Harm is being caused
- There is a significant possibility of harm being caused

Physical extent of land to be determined

It is for Colchester Borough Council to decide the physical extent of land that should be determined. It may not be clear precisely where the boundaries of the contamination lie. In such cases we will use our judgement on the extent of land we might reasonably consider to be contaminated land.

We will review our decision on the physical extent of the land to be determined (or that has been determined) if at a later date we become aware of relevant further information. For example, this may be the case if, during remediation, it becomes clear that the extent of contamination is significantly greater or less than was thought when the determination was made.

Sub-division of land for the purposes of determination

We may sub-divide the relevant land for the purposes of determination by issuing separate determinations for smaller areas of land which form part of a larger area of contaminated land. This will depend on the nature of the contamination, the degree of risk posed, and whether this varies across the land, the nature of the remediation which might be required, the ownership of the land and the likely identity of those who may bear responsibility for the remediation.

Making determinations in urgent cases

If we consider there is an urgent need to determine particular land, we will make the determination in a timescale we consider appropriate to the urgency of the situation.

Informing interested parties

Before making a determination, we will inform the owners and occupiers of the land and any other person who appears to us to be liable to pay for remediation of our intention to determine the land, unless we consider there is an overriding reason for not doing so.

If we determine land as contaminated land, we will give notice of that fact to

- The Environment Agency
- The owner of the land
- Any person who appears to be in occupation of any part of the land
- Each person who appears to be an appropriate person for the purpose of any remediation at the time the determination is made.

Postponing determination

We may postpone determination of contaminated land if the landowner or some other person undertakes to deal with the problem without determination, and we are satisfied that the remediation will happen to an appropriate standard and timescale. If we choose to do this, any agreement we enter into will not affect our ability to determine the land in future (e.g., if the person fails to carry out the remediation as agreed).

We may postpone determination of contaminated land if a significant contaminant linkage would only exist if the circumstances of the land were to change in the future within the bounds of the current use of the land e.g., if a more sensitive receptor were to move onto the land or a temporarily interrupted pathway were to be reactivated). If we choose to do this, we will keep the status of the land under review and take reasonable measures to ensure that the postponement does not create conditions under which significant risks could go unaddressed in future. Alternatively, we may decide to determine the land but postpone remediation.

Written record of the determination of contaminated land

We will prepare a written record of any determination that land is contaminated land. The record will identify the location, boundaries and area of the land in question and will be made publicly available.

The record will explain why the determination has been made, including:

- The risk summary - a relevant conceptual model comprising text, plans, cross sections, photographs and tables and a summary of the relevant assessment of this evidence.
- A summary of why we consider that the requirements of relevant sections of the Statutory Guidance have been satisfied.

We will seek to ensure (as far as reasonable) that all aspects of the record of determination are understandable to non-specialists, including affected members of the public.

Reconsideration, revocation and variation of determinations

We will reconsider any determination that land is contaminated land if we become aware of further information which we consider significantly alters the basis for our original decision. In such cases we will decide whether to retain, vary or revoke the determination.

We will reconsider any determination of contaminated land if remediation action has been taken which, in our view, stops the land being contaminated land. In such cases we will issue a statement to this effect.

If we vary or revoke a determination or issue a statement in accordance with the Statutory Guidance, we will record our reasons for doing so alongside the initial record of determination in a way that ensures the changed status of the land is made clear. If our reconsideration results in relevant documentation, such as a revised determination notice or a statement, copies of this documentation will also be recorded. We will ensure that interested parties are informed of our decisions and the reasons for them.

Remediation of contaminated land

Once land has been determined as contaminated land (and where Colchester Borough Council is the enforcing authority), we will consider how it should be remediated and, where appropriate, we will issue a remediation notice to require such remediation.



Relevant provisions of Part 2A include:

- Section 78A(7) - Defines “remediation”
- Section 78E(1) - Discusses service of a “remediation notice” on appropriate persons.
- Section 78E(4) – Discusses what can reasonably be required by way of a remediation notice, having regard to costs and seriousness of the harm or pollution of controlled waters in question.

Remediation techniques

The broad aims of remediation are:

- 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 an unacceptable level; and/or
- To take reasonable measures to remedy harm or pollution that has been caused by a significant contaminant linkage.

Remediation may involve a range of treatment, assessment and monitoring actions, sometimes with different remediation actions being used in combination or sequentially to secure the overall remediation of the land.

In cases where the aim of remediation is to remove or permanently disrupt significant contaminant linkages, remediation treatment should involve demonstrable disruption or removal of the significant contaminant linkage(s) that led to land being determined as contaminated land, in order to reduce or remove unacceptable risks to receptors. This might involve one or more of the following:

- Reducing or treating the **contaminant** part of the linkage (e.g., physically removing contaminants, treating the soil or water to reduce levels of contaminants, altering the chemical or physical form of the contaminants).
- Breaking, removing or disrupting the **pathway** parts of the linkage (e.g., removing or reducing the chance of exposure of receptor to contaminants, for

example by installing gas membranes, or by sealing land with clay or concrete).

- Protecting or removing the **receptor** (e.g., changing the land use or restricting access).

Assessment or monitoring actions may also be required as part of remediation.

Phased remediation

Remediation may require a phased approach, with different remediation actions being carried out at different times.

In some cases it may not be possible or reasonable for a single remediation notice to specify all the remediation actions which might eventually be needed. In such cases we will specify in the notice the remediation action(s) which we consider to be appropriate at the time, and further remediation notices may need to be issued later regarding further phases of action.

If a phased approach is taken to remediation, before serving any further remediation notice, we will be satisfied that previous action has not already achieved the remediation of the land (i.e., to a standard to which remediation can reasonably be required, having regard to the advice below), and that further action is still necessary to achieve the remediation of the land in question.

Remediation of multiple significant contaminant linkages

Where more than one significant contaminant linkage has been identified on the land, we will consider whether reasonable actions for addressing each linkage individually would result in the optimum approach for achieving the overall remediation of the land. If a combined approach would be more practicable and more cost effective whilst still delivering the same (or a better) overall standard of remediation we will generally favour this approach. However, in cases where more than one party has been found responsible for linkages, we will not impose an approach which is more costly for any responsible party than addressing the linkages separately.

Securing remediation without a remediation notice

We cannot serve a remediation notice if any of the following apply:

- There is nothing by way of remediation which could be specified in a remediation notice served on that person;
- We are satisfied that appropriate things are being, or will be, done by way of remediation without the service of a remediation notice on that person;
- The person on whom the notice would be served is Colchester Borough Council; or
- Colchester Borough Council has the power to undertake remediation itself.

We will assume that appropriate measures are being taken if:

- We are satisfied that steps are being taken that are likely to achieve a standard of remediation equal to, or better than, what we would otherwise have specified in a remediation notice.
- We are satisfied that the timescale in which remediation is planned to take place is appropriate.

We will actively consider the merits and likelihood of achieving remediation without recourse to a remediation notice before issuing a remediation notice.

Standard of remediation

We may only require (or undertake ourselves) actions in a remediation notice which are reasonable with regard to the cost and the seriousness of the pollution or harm. This requirement is in addition to the broader responsibility on us as a public regulator to act in a reasonable manner.

In cases where the aim of remediation is to remove or permanently to disrupt significant contaminant linkages, we will aim to ensure that remediation achieves a standard sufficient to ensure the land no longer poses sufficient risk to qualify as contaminated land. In using powers under Part 2A, we will not require a higher standard of remediation. The appropriate person or some other person might choose to carry out remediation to a higher standard (e.g., to increase the value or utility of the land, or to prepare it for redevelopment) but it will not be required by us.

Where we consider that it is not practicable or reasonable to remediate land to a degree where it stops being contaminated land, we will consider whether it would be reasonable to require remediation to a lesser standard. The broad aim will be to manage or remediate the land in such a way that risks are minimised as far as is reasonably practicable.

In cases where the purpose of remediation is to remedy harm or pollution that has already been caused, we will decide what is a suitable standard of remediation having regard to the guidance on reasonableness. In some cases it may be reasonable to require land or waters to be restored to their former state. In other cases it may not be practicable and/or reasonable to do this. In such cases we will consider whether it would be reasonable to require remediation to a lesser standard.

Reasonableness of remediation

We may only require remediation action in a remediation notice if we are satisfied that those actions are reasonable. In deciding this, we will consider various factors, having particular regard to:

- Practicability, effectiveness and durability
- Health and environmental impacts of the chosen remedial options
- Financial cost
- The benefits of remediation with regard to the seriousness of the harm or pollution of controlled waters in question

We will regard a remediation action as being reasonable if we are satisfied that the benefits of remediation are likely to outweigh the costs of remediation.

In some cases it might be that there is more than one potential approach to remediation that would be reasonable. In such cases we will choose what we consider to be the “best practicable technique” having regard to the factors above. Unless there are strong grounds to consider otherwise, the best practicable technique in such circumstances is likely to be the technique that achieves the required standard of remediation to the appropriate timescale, whilst imposing the least cost on the persons who will pay for the remediation.

Health and environmental impacts of remediation

In considering the costs of remediation and the seriousness of harm or pollution, we will also consider other costs and impacts that may, directly or indirectly, result from remediation. This will include consideration of potential health impacts and environmental impacts of remediation. In considering such impacts we will decide whether or not to describe such costs in terms of monetary value or whether to make a qualitative consideration.

Potential health impacts:

- Direct health effects, e.g., resulting from contaminants being mobilised during remediation, and worker safety
- Indirect health effects, e.g., stress-related effects that may be experienced by affected people, particularly local residents

In making this consideration we will also be mindful of the health benefits of remediation and the potential health impacts of not remediating the land.

Environmental impacts must not:

- Cause significant risk to water, air, soil and plants and animals
- Cause nuisance through noise or odours
- Adversely affect countryside, places of special interest, buildings of special architectural or historic interest

We will strive to minimise impacts of remediation on health and the environment (and comply with any relevant regimes that might require this, for example the health and safety, planning and environmental permitting regimes). If we consider that health or environmental impacts of a particular remediation approach are likely to outweigh the likely benefits of dealing with the risk posed by the contamination, we will consider whether an alternative approach to remediation is preferable, even if it may deliver a lower standard of remediation than other techniques.

Revision of remediation notices

We will consider revising a remediation notice if we consider it is reasonable to do so. In particular this would apply to cases where new information comes to light which calls into question the reasonableness of an existing remediation notice. For example, this might be the case where information that comes to light during

remediation shows that some remediation actions are no longer necessary, or that additional or alternative actions are necessary.

If we have issued a remediation notice but the person concerned later proposes an alternative remediation scheme, we will consider whether to amend or revoke the remediation notice. It is for us to decide the degree of consideration we give to such a proposal. If we decide to do this, we will be satisfied that the standard of remediation and the timescale in which it would take place are in line with the Statutory Guidance.

Verification

Any remedial treatment action should include appropriate verification measures. In arranging for such measures, we will ensure that the person responsible for verification is a suitably qualified experienced practitioner.

Liability

The main provisions for the establishment of liability are set out in Part 2A and the statutory guidance. To summarise:

Exclusion - Where two or more persons are liable to bear the responsibility for any particular thing by way of remediation, the Statutory Guidance deals with the questions of who should be excluded from liability, and how the cost of each remediation action should be apportioned between those who remain liable after any such exclusion (section 78F(6) and (7) of the 1990 Act).

Paying for remediation - We will identify persons responsible for paying for remediation actions. We first look for persons who caused or knowingly permitted each linkage ("Class A" persons). If no Class A persons can be found, we will identify the owners or occupiers of the land ("Class B" persons), although not for pollution of controlled waters where this is the only linkage.

Orphan linkage - If no Class A or Class B persons can be found liable for a linkage.

Financial circumstances and cost recovery decisions

The financial circumstances of those concerned have no bearing on the application of the procedures for exclusion, apportionment and attribution. The financial circumstances of those concerned are taken into account in the separate consideration under section 78P(2) on hardship and cost recovery.

We are prevented from serving a remediation notice if we have the power to carry out remediation ourselves. Instead, we would produce and publish a Remediation Statement. We may then either not seek to recover our costs or seek to recover only a part of our costs.

We will have regard to the Statutory Guidance when making any cost recovery decision and will have regard to the circumstances of each individual case. However, we will have regard to the following general principles:

- We will aim for an overall result which is as fair and equitable as possible to all who may have to meet the costs of remediation, including national and local taxpayers
- The “polluter pays” principle will be applied: where possible, the costs of remediating pollution will be borne by the polluter

In general, we will seek to recover all of our reasonable costs. However, we will waive or reduce the recovery of costs to the extent that we consider appropriate and reasonable, either:

- To avoid any undue hardship which the recovery may cause to the appropriate person
- To reflect one or more of the specific considerations set out in the statutory guidance

In making such decisions, we will bear in mind that recovery is not necessarily an “all or nothing” matter (i.e., where reasonable, appropriate persons will be made to pay part of our costs even if they cannot reasonably be made to pay all of the costs).

In deciding how much of our costs we will recover, we will consider whether we could recover more of the costs by deferring recovery and securing them by a charge on the land in question. Such deferral may lead to payment from the appropriate person either in instalments or when the land is next sold.

In general, we will expect anyone who is seeking a waiver or reduction in the recovery of remediation costs to present any information needed to support such a request.

In making any cost recovery decision, we will consider any relevant information provided by the appropriate person(s). We will also seek to obtain such information as is reasonable, having regard to:

- Accessibility of the information
- The cost (for any of the parties involved) of obtaining the information
- The likely significance of the information for any decision

We will, in all cases, inform the appropriate person of any cost recovery decisions taken, explaining the reasons for those decisions.

The old (2006) Statutory Guidance suggests we could consider the Housing Renewal Grants Regulations 1996 in relation to hardship matters; however, this is not reflected in the 2012 guidance.

Bibliography

British Geological Survey, 2021. *Geology of Britain Viewer* [online]. Available at <<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>> [Accessed 06/08/21].

Colchester Borough Council, 2021. *Colchester Borough Council Emerging Local Plan 2017 - 2033* [online]. Available at <<https://www.colchester.gov.uk/local-plan/evidence-base-emerging-local-plan-2017-33/?page=evidence--base-----emerging--local--plan--2017-2033>> [Accessed 06/08/21].

Colchester Borough Council, 2021. *Colchester Borough Council Strategic Plan 2020-23* [online]. Available at <<https://www.colchester.gov.uk/strategic-plan/2020-23/>> [Accessed 06/08/21].

Contaminated Land: Applications in Real Environments (CL:AIRE), 2014. *SP1010 – Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Final Project Report (Revision 2)*. [online]. Available at <<http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18341>> [Accessed 06/08/21].

Department for Communities and Local Government (DCLG), 2012, revised 20/07/21. *National Planning Policy Framework (NPPF)* [online]. Available at <<https://www.gov.uk/government/publications/national-planning-policy-framework-2>> [Accessed 06/08/21].

Department of Environment (DoE), 1995, updated 2014. *Industry Profiles*. Available at <<https://www.clare.co.uk/useful-government-legislation-and-guidance-by-country/198-doe-industry-profiles>> [Accessed 06/08/21]:

- Airports
- Animal and animal products processing works
- Asbestos manufacturing works
- Ceramics, cement and asphalt manufacturing works
- Chemical works – coatings, paints and printing inks manufacturing works
- Chemical works – cosmetics and toiletries manufacturing works
- Chemical works – disinfectants manufacturing works
- Chemical works - explosives, propellants and pyrotechnics manufacturing works
- Chemical works – fertiliser manufacturing works
- Chemical works - fine chemicals manufacturing works
- Chemical works – inorganic chemicals manufacturing works
- Chemical works – linoleum, vinyl and bitumen-based floor covering manufacturing works
- Chemical works – mastics, sealants, adhesives and roofing felt manufacturing works
- Chemical works – organic chemicals manufacturing works
- Chemical works – pesticide manufacturing works
- Chemical works – pharmaceutical manufacturing works
- Chemical works – rubber processing works (including works manufacturing tyres or other rubber products)

- Chemical works – soap and detergent manufacturing works
- Dockyards and dockland
- Engineering works – aircraft manufacturing works
- Engineering works – electrical and electronic equipment manufacturing works (including works manufacturing equipment containing PCBs)
- Engineering works – mechanical engineering and ordnance works
- Engineering works – railway engineering works
- Engineering works - ship building repair and ship breaking including naval shipyards
- Engineering works – vehicle manufacturing works
- Gas works, coke works and other coal carbonisation plants
- Metal manufacturing, refining and finishing works – electroplating and other metal finishing works
- Metal manufacturing, refining and finishing works – iron and steel works
- Metal manufacturing, refining and finishing works – lead works
- Metal manufacturing, refining and finishing works – non-ferrous metal works (excluding lead works)
- Metal manufacturing, refining and finishing works – precious metal recovery works
- Oil refineries and bulk storage of crude oil and petroleum products
- Power stations excluding nuclear power stations
- Profile of miscellaneous industries incorporating: charcoal works, dry-cleaners, fibreglass resins manufacturing works, glass manufacturing works, photographic processing industry, printing and bookbinding works
- Pulp and paper manufacturing works
- Railway land
- Road vehicle fuelling, service and repair – garages and filling stations
- Road vehicle fuelling, service and repair – transport and haulage centres
- Sewage works and sewage farms
- Textile works and dye works
- Timber products manufacturing works
- Timber treatment works
- Waste recycling, treatment and disposal sites – hazardous waste treatment plants
- Waste recycling, treatment and disposal sites – landfills and other waste treatment or waste disposal sites
- Waste recycling, treatment and disposal sites – metal recycling sites
- Waste recycling, treatment and disposal sites – solvent recovery works

Department of Environment, Transport and the Regions (DETR), 1995.
Contaminated Land Research Report 6 (CLR 6), Prioritisation & Categorisation Procedure for sites which may be Contaminated.

EIC /AGS/CL:AIRE, 2010. *Soil Generic Assessment Criteria for Human Health Risk Assessment*. [online]. Available at <<https://www.claire.co.uk/projects-and-initiatives/39-generic-assessment-criteria-gac/108-generic-assessment-criteria-gac>> [Accessed 06/08/21].

Environment Agency, 2014, updated 2016 (includes SGVs and CLEA model). *Land contamination: technical guidance*. [online]. Available at <<https://www.gov.uk/government/collections/land-contamination-technical-guidance>> [Accessed 06/08/21].

Essex County Council, July 2014. *Essex Minerals Local Plan*. [pdf]. Available at: <<https://www.essex.gov.uk/minerals-waste-planning-policy/minerals-local-plan>> [Accessed 06/08/21].

HM Government, 2013. *Approved Document C - Site preparation and resistance to contaminants and moisture (2004 Edition incorporating 2010 amendments), Online Version* [online]. Available at <<https://www.gov.uk/government/publications/site-preparation-and-resistance-to-contaminates-and-moisture-approved-document-c>> [Accessed 06/08/21].

Nathanail, C.P.; McCaffrey, C.; Gillett, A.G.; Ogden, R.C. and Nathanail, J.F., 2015. *Suitable 4 Use Levels for Human Health Risk Assessment*. Nottingham: LQM/CIEH.

Office for National Statistics, 2015. *2011 Census Data*. [online]. Available at <<https://www.ons.gov.uk/census/2011census/2011censusdata>> [Accessed 06/08/21].

Syms, P.M., 1999. *Desk Reference Guide to Potentially Contaminative Land Uses*. London: ISVA/CIEH.

Appendices

Appendix 1

Development of the Strategy: Identification and Initial Prioritisation of Potential Sites ('Strategic Inspection')

The identification of contaminated land will be carried out in an ordered, rational and efficient manner, based firmly on the principles of risk assessment. Significant and imminent risks to human health will always be given the highest priority.

PRIORITISATION

Potentially contaminated land will be listed and categorised according to a **preliminary assessment** of risk, prior to any detailed investigation. The method used will be based on that described in CLR 6, DETR, 1995. This is to ensure that all further investigative work relates directly to seriousness of the potential risk.

Using work undertaken, and information gathered, by Essex County Council and the Contaminated Land Working Group (consisting of all local authorities in Essex), the following ranking system was developed, replacing the scores in CLR 6, but with the risk categories remaining the same.

Priority Categories (PCs):

| | |
|----------------------------|--|
| Priority Category 1 | Site likely not to be suitable for present use and environmental setting. Contaminants probably or certainly present and very likely to have an unacceptable impact on key targets. Urgent assessment action needed in the short term. |
| Priority Category 2 | Site may not be suitable for present use and environmental setting. Contaminants probably or certainly present and likely to have an unacceptable impact on key targets. Assessment action needed in the medium term. |
| Priority Category 3 | Site considered suitable for present use and environmental setting. Contaminants may be present but unlikely to have an unacceptable impact on key targets. Assessment action unlikely to be needed whilst the site remains in present use or otherwise remains undisturbed. |
| Priority Category 4 | Site considered suitable for present use and environmental setting. |

Contaminants may be present but very unlikely to have an unacceptable impact on key targets.

No assessment action needed while site remains in present use or undisturbed.

RATIONALE USED FOR PRIORITISATION

Potential sources of contamination were identified from:

- The Potentially Contaminated Land database (work started at Colchester Borough Council in connection with the now withdrawn “section 143 register” in relation to the Environmental Protection Act 1990) and the Local Plan. Ordnance Survey historical maps held by Essex County Council, dated:
 - 1872 – 1890;
 - 1897 – 1905;
 - 1920 – 1925; and
 - 1935 – 1953
- Old waste and minerals planning registers, held by Essex County Council.

These sources were then ranked, based on the *Desk Reference Guide to Potentially Contaminative Land Uses*, Syms, 1999 (see **Table 2.1**).

An “unknown fill” category required modification, as it encompassed both large mineral sites and small infilled farm ponds. As infilled ponds were considered generally to be of lower priority, the problem was addressed by splitting the category into two, based on the size of the site.

An Internet definition of ‘ponds’ was found that put them at <0.8 hectares; there was a natural split in the Essex data at 2.4 hectares. A decision was taken to place the split at 2 hectares. This would return approximately 11% of sites at a high priority rating:

- Landfill / mineral extraction 85
- Small ponds/infill 10

Potential receptors were identified from:

The Local Plan and from information provided by the Environment Agency for controlled waters (Special Protection Zones and surface water).

Receptors, including controlled waters, were collated by the Working Group and ranked according to sensitivity (see **Table 2.2**).

Proposed development indicated on the Local Plan was treated as existing.

Potential Pathways were accounted for:

By spatial correlation to the source (i.e., distance), in accordance with the guidance in CLR6 (see **Table 2.3**):

- co-location (on site);
- within 50m; and
- within 250m

The CLR6 scoring system was then adapted for use by all of the Essex Local Authorities, to produce a Provisional Priority Score (PPS). This was achieved by taking the relevant scores for:

- Sources, **S** (see Table 2.1);
- Receptors, **R** (see Table 2.2);
- Pathways (as a weighting factor), **W** (see Table 2.3)

And calculating a PPS score as follows:

$$PPS = (S + R) \times W$$

Where there is more than one identified receptor, the highest scoring receptor will be used in the calculation, with additional receptors added:

$$PPS = [(S + R_1) \times W] + R_2$$

A risk category is then allocated to each site as follows:

| PPS Score | Priority Category |
|-------------|-------------------|
| 1801 – 2000 | 1 |
| 1501 – 1800 | 2 |
| 1001 – 1500 | 3 |
| 0 – 1000 | 4 |

Relationship of PPS to Priority Category

Initial inspection of records may identify sites where there is only a potential source of contamination. As no pollutant linkage will have been identified (i.e., source, pathway *and* receptor), no further assessment will be undertaken. However, the situation will be kept under review.

Some examples of the use of the PPS system are shown in Appendix A6.

As Priority Category 1 sites are likely to be unsuitable for their present use, these will be investigated as soon as reasonably practicable after they have been identified.

2.4 CONCLUDING COMMENTS ON IDENTIFICATION AND PRIORITISATION

It must be understood that the assessments at this preliminary stage are made on a limited amount of incomplete basic data and information, such as old surveys, maps, geological information etc. As more knowledge of the site is obtained, these

assessments will be revised and their Priority Category may change. The assessment of a site as Priority Category 1 does not necessarily infer the existence of a significant risk to one of the specified receptors, but it does identify the need for priority assessment of risk potential.

Table 2.1 Prioritisation Risk Ranking for Sources (S)

| SOURCE | SCORE (S) |
|---|------------------|
| Asbestos | 100 |
| Organic/Inorganic chemical production | 93 |
| Domestic heating oil/Fuel spills | 90 |
| Radioactive process/Disposal | 88 |
| Gasworks/Cokeworks/Coal carbonisation | 85 |
| Waste disposal (known fill) | 85 |
| Oil refinery/Petrochemical production/Storage | 84 |
| Petrol stations/Pumps | 83 |
| Pesticides manufacturing | 83 |
| Pharmaceutical | 82 |
| Fine chemicals/Dyestuffs | 82 |
| Paint/Varnish/Ink manufacture | 79 |
| Animal slaughter/By-products | 78 |
| Tanning/Leatherworks | 77 |
| Scrapyards | 75 |
| Metal smelting/Refining | 74 |
| Iron and steelworks/Foundry/Blacksmiths | 74 |
| Explosives/Ordnance/Fireworks making/storage | 73 |
| Engineering | 66 |
| Gravel/Clay Pits/Moats (unknown fill) | 66 |
| Rubber manufacture | 65 |
| Tar/Bitumen/Lino/Vinyl/Asphalt manufacture | 65 |
| Concrete/Ceramics/Cement/Plaster works | 65 |
| Mining/Extraction | 65 |
| Electricity generation (excl. nuclear power) | 64 |
| Film/Photographic processing | 63 |
| Disinfectant manufacture | 62 |
| Paper/Printworks | 60 |
| Glass/Brick/Tile manufacture | 58 |
| Fertiliser manufacture | 58 |
| Timber treatment works | 58 |
| Sewage treatment | 54 |
| Repair garages, workshops/ USTs/ASTs | 53 |
| Transport depots/Haulage yards | 53 |
| Railway yards/Sidings/Tracks | 53 |
| Agricultural/Farm | 53 |
| Military establishments/Barracks | 53 |
| Electrical/Electronics manufacture | 48 |
| Textiles manufacture/Dyeing | 48 |
| Laundry/Dry cleaning (large-scale) | 48 |
| Dockyards/Wharves | 48 |
| Food processing/Breweries | 45 |
| Airports | 45 |

| | |
|--------------------|----|
| Warehouses | 10 |
| Small Ponds/infill | 10 |
| Hospitals | 10 |

For multiple activities, the highest scoring activity will be used.

Table 2.2 Receptor Sensitivity Scores (R)

| RECEPTOR | | SENSITIVITY SCORE (R) |
|--------------------|--|-----------------------|
| Human | Allotments | 100 |
| | Residential (with gardens) | 100 |
| | Residential (no gardens) | 100 |
| | Recreation/Parks/Playing Fields/Open Spaces | 95 |
| | Commercial/Industry | 80 |
| Controlled Waters | Inner Source Protection Zones | 100 |
| | Groundwater (Private extraction) | 90 |
| | Groundwater (Major extraction) | 85 |
| | Surface & Ground Waters (non-ex/abstraction) | 70 |
| Ecological Systems | European Designated Sites SAC/SPA/RAMSAR | 50 |
| | SSSI/NNR/MNR | 45 |
| | County wildlife sites/SINC | 30 |
| | Local Nature Reserve | 30 |
| Property | Agricultural Land | 10 |
| | Forestry | 8 |
| | Ancient monuments/Listed buildings | 5 |

Table 2.3 Pathways – Suggested Buffer Distances & Weighting (CLR 6)

| BUFFER DISTANCE (m) | WEIGHTING (W) | DESCRIPTION |
|---------------------|---------------|--------------------------|
| Co-located | 10 | |
| 50 | 9 | Development |
| 250 | 2 | Landfill and Development |
| 500 | 1 | Surface water |

Appendix 2

Significant harm and significant possibility of such harm (non-human receptors): Tables 1 & 2 from the Statutory Guidance

Table 1: Ecological system effects

| Relevant types of receptor | Significant harm | Significant possibility of significant harm |
|--|---|--|
| <p>Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> • a site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981) • a national nature reserve (under s.35 of the 1981 Act) • a marine nature reserve (under s.36 of the 1981 Act) • an area of special protection for birds (under s.3 of the 1981 Act) • a “European site” within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 • any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e., candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949. | <p>The following types of harm should be considered to be significant harm:</p> <ul style="list-style-type: none"> • harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. <p>In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.</p> | <p>Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that:</p> <ul style="list-style-type: none"> • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. <p>Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p> |

Table 2: Property effects

| Relevant types of receptor | Significant harm | Significant possibility of significant harm |
|---|--|---|
| <p>Property in the form of:</p> <ul style="list-style-type: none"> • crops, including timber; • produce grown domestically, or on allotments, for consumption; • livestock; • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights. | <p>For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.</p> <p>The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>In this section, this description of significant harm is referred to as an “animal or crop effect”.</p> | <p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p> |
| <p>Property in the form of buildings. For this purpose, “building” means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.</p> | <p>Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended.</p> | <p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking</p> |

| | | |
|--|--|--|
| | <p>In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.</p> <p>In this Section, this description of significant harm is referred to as a “building effect”.</p> | <p>into account relevant information for that type of contaminant linkage.</p> |
|--|--|--|

