



# London Borough of Waltham Forest Contaminated Land Strategy 2021



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# 1 Background

Britain has had a significant industrial history. Changes to industry and demographics, notably throughout the 20<sup>th</sup> Century, has seen an extensive restructuring of towns and cities. This restructuring has meant that polluting industries have moved away and/or vanished altogether. This has left an extensive legacy of polluted land in these vacant spaces. Historically developed land has now become termed 'brownfield' land/sites. With increased recognition of the risks associated with contaminated land, there have been changes in legislation, notably the Environmental Act 1995.

## 1.1 Regulatory and Policy Context

The principal driver for establishing a Contaminated Land Strategy lies within the statutory framework. The overarching legislation is Part 2A (Part 2A hereafter) of the Environmental Protection Act 1990, introduced by the Environment Act 1995 (Part 2A hereafter). This is supported by other key legislation, namely the Contaminated Land (England) Regulations 2006/2012. The Government has issued statutory guidance under the Part 2A legislation, the most recent version of which is the Contaminated Land Statutory Guidance 2012. Another key piece of guidance is the now updated Land Contamination Risk Management (LCRM). This builds on the previous CLR11 which sets out a detailed, risk-based approach for dealing with contaminated land.

Part 2A ensures that contaminated land is made suitable for its current use. The legislation and guidance stipulate that every Local Authority should cause their areas to be inspected from time to time, with a view to identifying contaminated land. This should be a strategic approach, in the form of developing and implementing a written contaminated land strategy. This will be kept under periodic review, with the aim to review every 5 years. This strategy, therefore, provides an update to the previous strategy.

Part 2A places responsibilities on local authorities and the Environment Agency, the latter having particular responsibility for contamination of water resources as well as other issues such as radioactive contamination.

The Council's corporate Public Service Strategy has 'Safe and Healthy Lives' as one of its four priorities. Ensuring that contaminated land is managed effectively is central to this objective, and this work also supports the fourth objective of 'Confidence in Our Future, by contributing to the commitment that development takes place in a more sustainable and greener way.

## 1.2 The Planning Regime and Contaminated Land

The overarching principle of Part 2A is to deal with land that has been contaminated as a result of historical land use and ensuring that such land is appropriately remediated, in line with its current use. Brownfield land that is to be redeveloped has the potential for contamination but is instead primarily managed through the planning regime. The majority of contaminated sites in the UK are dealt with via the planning process. As a consultee to the local planning authority, the Council's Contaminated Land Officer (CLO) considers all applications for the potential for contamination. This is to keep in line with its duties set out in the National Planning Policy Framework (NPPF), as well as the Council's local planning policy and guidance.

Planning applications for sites of potential contamination are assessed using a phased planning condition approach. Conditions are set to address each stage of the investigation process and to ensure sites are verified as free of risk before occupation. The NPPF places the onus on the developer to ensure that development is undertaken in a safe manner and that risks from contamination are adequately abated. Developers are also directed to a guidance document titled *Guidance for Developing on Land Affected by Contamination*. This was developed by the East London Contaminated Land Group and is intended to serve as an informative source of advice for developers seeking to redevelop potentially contaminated land. The document can be downloaded from the Council's website.

The Town and Country Planning (Brownfield Land Register) Regulations 2017 has provided, through the NPPF, a requirement for the Council to develop a Brownfield Land Register, which identifies the brownfield sites in the borough that the Council considers suitable for housing and other uses. The register can be found on the Council's website [here](#).

### **1.3 Other Relevant Regulations**

There are other regulatory systems available for dealing with contaminated land. The statutory guidance states that Part 2A should be exercised when no appropriate alternative solution exists. In addition to the planning regime, land contamination can also be addressed through the regimes for waste, water, and environmental permitting; and The Environmental Damage (Prevention and Remediation) (England) Regulations 2015. The Regulations apply to both imminent threats and actual cases of damage and give the Council statutory powers to carry out action against operators to prevent damage or further damage.

### **1.4 Building Regulations**

The Building Regulations also play a role in managing contaminated land. There are provisions in the regulations to ensure that developers incorporate defence measures in the way of ground gas protection to abate the ingress of ground gas and volatile organic compounds. The Council's building control department inspect such sites and assess the integrity of the mitigation measures.

### **1.5 Local Policy**

This strategy will tie in with and provide a vehicle for the effective implementation of the aims and objectives of the Council's local policies. Policy DM24 of the Development Management Policies DPD 2013 and Policy 92 of the Local Plan 2020 - 2035 both contain significant commitments to addressing contaminated land and the overall improvement of the health and wellbeing of residents. Please see appendix A for details.

## 1.6 The Definition of Contaminated Land

The legal definition of contaminated land, as defined in Section 78A of the Environmental Protection Act 1990, is:

“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;

Where ‘*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.

The legal definition of contaminated land is slightly different if harm is due to radioactivity, as defined in Regulation 5 of The Radioactive Contaminated Land (England) Regulations 2006:

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

a) harm is being caused; or

b) there is a significant possibility of harm being caused.’

With regard to radioactivity, ‘harm’ means lasting exposure to any human being resulting from the aftereffects of a radiological emergency, past practice or past work activity.

## 1.7 Determination of Land as ‘Contaminated Land’

Given the above legal definitions, land can only be formally determined as contaminated land for one or more of the following:

- Significant harm is being caused.
- There is a significant possibility that significant harm could be caused.
- Significant pollution of controlled waters is being caused.
- Significant pollution of controlled waters is likely to be caused.
- Harm attributable to radioactivity is being caused.
- There is a significant possibility that harm attributable to radioactivity could be caused.

## 1.8 The Principle of Pollutant Linkages

The existence and magnitude of harm is determined via a risk-based approach. In order for a risk to be present from land (or water) contamination, there needs to be an associated source – pathway – receptor linkage, which effectively links a contaminant to a receptor. This entails that a pollutant needs to be present in a relevant quantity and form to cause harm and in a



locale that makes it possible to come into contact via a practicable pathway (e.g. air, land, water) with a receptor i.e. humans, the environment and/or property. Table 1 details each component and figure 1 details a cross sectional view of component linkages and interactions.

Table 1: Source Pathway and Receptor components

Component	Definition
Contaminant	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.
Pathway	A route by which a receptor is or might be affected by a contaminant
Receptor	Something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters

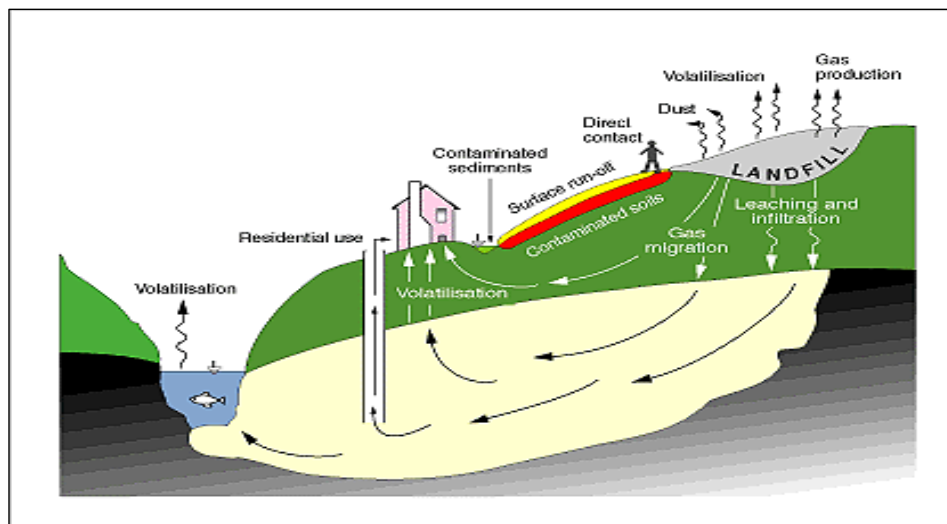


Figure 1: Conceptual Site Model details various source, pathway and receptor linkages

## 1.9 Consultation Procedure

The Council is required to consult on the revised strategy with colleagues across regulatory organisations and services, both internally and externally. The Council will consult:

Table 2: List of consultees

External Consultees	Internal Consultees
Environment Agency	Building Control
Natural England	Parks & Open Spaces
DEFRA	Planning
Public Health England	Housing Dept
	Regeneration

## **2 Strategy Aims & Objectives**

The Council will seek to work within the requirements of Part 2A by prioritising sites of interest for detailed inspection, however, given the sheer number of sites, and the now predominant role of the planning regime, the planning process will be the principal avenue for assessing sites within the borough. This will be carried out in line with the below:

- To fulfil the Councils statutory obligations to generate a formal strategy under Part 2A
- To advance and assist in the redevelopment of brownfield sites.
- To encourage voluntary remediation to reduce the burden on taxpayers, businesses and individuals.
- To undertake a prioritisation process to support detailed investigation.
- To guarantee that a strategic and systematic approach is employed for addressing contaminated land and that development within the borough effectively deals with contamination.
- To seek to ensure that remedial action is rational, practicable, effective, and durable.

## **3 Characteristics of London Borough of Waltham Forest**

The London Borough of Waltham Forest borders onto six other local authorities, namely Epping Forest District to the North, London Borough of Enfield and London Borough of Haringey to the West, London Borough of Hackney to the South West, London Borough of Newham to the South and London Borough of Redbridge to the East. The location of LBWF is illustrated below in Figure 2.



Figure 2: Map of borough location in London



### **3.1 Housing and Regeneration**

As highlighted in the Local Plan 2020 - 2035, the Council seeks to contribute to the increasing housing supply in London by delivering a minimum of 27,000 homes by 2035. Policy 12 states that development and regeneration activity should be delivered principally through the use of brownfield land and buildings. The ongoing development of the Council's Brownfield Land Register will assist in the efficiency of this. This strategy will therefore play an essential role in developing the register as well as the safe and effective accomplishment of housing provisions.

### **3.2 Conservation**

Waltham Forest is topographically diverse with Metropolitan Green Belt and Metropolitan Open Space accounting for 27% of its area. The Council manages an array of international (Ramsar and Special Protection Area (SPA), national (SSSI) and local (SINC) designations. See the Council's Waltham Forest Green and Blue Infrastructure Strategy on the Council's webpage for further details on these. It is therefore imperative that such sites are kept in consideration when addressing contaminated land in the borough, as they can be affected by offsite contaminants. It is consequently important to consider investigation and remediation techniques when addressing potentially or determined contaminated land. The CLO will maintain communication with relevant colleagues should the requirement for investigation occur.

### **3.3 Geology**

When identifying contaminated land, it is essential to have knowledge of the underlying geology as this can dictate contaminant behaviour and severity. Factors such as soil and rock type, permeability and chemical composition can influence how contaminants migrate into the strata below. Hydrology, hydrogeology and drift geology are also important as ground water can become polluted as well as transport contaminants to other areas. Physical, anthropogenic alterations to the geology, such as the removal of the top strata during development can also impact on how contaminants behave in the underlying strata.

### **3.4 Solid Geology**

The London Borough of Waltham Forest lies on the north eastern side of the Thames basin, an elongated basin composed of chalk. The chalk that forms the Chiltern and South Cambridgeshire Hills passes under central London and Essex and surfaces as the North Downs of Surrey and Kent. Overlying the chalk is a variety of sediments of sand, clay and shell beds, collectively known as the Lambeth group. The Lambeth group is predominant to the south of the borough, where the overlying clay beds reduce in thickness. The Thanet Formation is also present within the borough, and rests on the Chalk. It is a Secondary Aquifer A and can be in hydraulic continuity with the Chalk. Overlying the Lambeth Group is the London Clay. This blue/grey fossiliferous clay is of variable thickness and up to 125m thick in places, as well as absent in others and is predominant to the north of the borough and decreases in thickness to the south of the borough. Lying on top of the London Clay is a sandy clay called the Claygate Beds. The Claygate Beds are prevalent to the north of the borough.

The Chalk, Lambeth Group, London Clay and Claygate beds are referred to as the solid geology, being the rocks that underlie glacial and superficial deposits.

### **3.5 Drift Geology**

The drift deposits of the borough of Waltham Forest include deposits of glacial gravels. Superficial deposits are largely absent within the northern part of the borough, with some limited gravel deposits mapped on higher ground to the north east. Gravel deposits cover a significant area of the southern part of the borough. Alluvium is present as a narrow band within the vicinity of the River Lea, widening within the south western part of the borough.

### **3.6 Hydrogeology**

Hydrogeology is the process by which water moves through the soil profile, as well as the storage and movement of water through geological deposits. The type of geology in an area determines how water moves. On sites consisting of clay, water movement through the soil profile is expected to be poor. The composition of the London Clay Formation is characterised by clayey, poorly draining ground with limited potential for surface water to reach ground water aquifers. Unproductive strata such as the London Clay Formation forms an almost impervious layer to waterborne contaminants that prevent the transmission of groundwater. The risk for aquatic pollutant migration is highest in the south of the borough as the formation is thin to non-existent in this area. Excavations and boreholes may provide pathways for surface water and pollutants to penetrate the formation. The Claygate Member is a Secondary (A) Aquifer. Whilst it is moderately well drained surface, drainage waters cannot easily pass through it, so this assists in the isolation of waterborne contaminants. The River Terrace Gravels (also a Secondary (A) Aquifer) allow for the free water movement within them. Water is also able to percolate down through gravel layers, thus allowing waterborne contaminants to move easily through the soil profile. Lambeth, Thanet and Chalk can be in hydraulic continuity and, where this is the case are classified as Principal Aquifers (most sensitive designation). Groundwater can be present as laterally continuous but vertically separated "bodies" with the various aquifers present. For superficial deposits these may also be in continuity with surface water features. The water table is at or near the surface of the alluvium deposits and as such, the area is prone to flooding in the borough. This feature will be clearly identified on the Council's geographic information system (GIS) as it may assist the migration of contaminants.

### **3.7 Boreholes, Abstraction Points and Source Protection Zones (SPZ)**

There are approximately two hundred boreholes and approximately sixteen abstraction points in the borough. There are numerous Source Protection Zones (SPZ) located in LBWF. Some of these boreholes are used for a water source for use in manufacturing. The zones around the SPZ's show a 50 to 400 day migration time for a contaminant to reach the extraction point. The Environment Agency recommends that development should not occur in an inner SPZ-1 (50 day pollutant migration period) as there is unlikely to be enough time for dilution of contaminants in this area before they reach the aquifer, unless it is appropriate with regards to the sensitivity of groundwater or there are appropriate mitigation measures in place. Monitoring and control of the groundwater quality is to be undertaken when developing in close proximity to an outer SPZ-2 (400 day pollutant migration period).

### 3.8 Surface Waters

The drainage of LBWF is serviced by the drainage into the water bodies and reservoirs in the west of the borough. William Grilling, Banbury, Lockwood, Warwick reservoirs located in the upper to mid catchments provide potable water storage for the surrounding region. The Lea River then takes various forms through the Walthamstow Marshes and the Hackney Marshes before finally feeding into the Thames River. The Lea and its associated watercourses are the principal river system in Waltham Forest. Smaller streams such as The Ching and Dagenham Brook flow into the River Lea. The Chingford and Walthamstow reservoirs represent one of the largest expanses of open water in London. Epping Forest also contains a number of smaller waterbodies.

## 4 Identifying Sites of Potential Concern

### 4.1 Prioritisation

In order to carry out the inspection process, sites of potential concern must be identified. This involves prioritising sites, utilising a risk-based screening procedure. Sites will be screened based both on their historical, as well as present land use. The land use will be assessed in relation to potential source – pathway – receptor linkages.

The preliminary screening process will employ the use of the Council's GIS system, Statmap. The majority of sites with a potentially contaminative land use (historically and presently) in the borough have been earmarked within GIS Statmap. To keep in line with statutory guidance, the most urgent sites (i.e. those with the most contaminative uses in the closest proximity to the most sensitive receptors) will be prioritised for inspection first.

There are 4 categories of prioritisation, based on the level of risk to receptors. The categories have been summarised in the table 3 below.

Table 3: The categories of site prioritisation by level of severity

Category	Explanation
1	Sites where the LA considers 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, similar land or situations are known, or are strongly suspected on the basis of robust evidence, to have caused such harm before, 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
2	Sites where the LA considers pose a significant possibility of significant harm. 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 the authority considers 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
3	Sites where the LA considers a strong case does not exist, and the legal test for significant possibility of significant harm is not met. May include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted.
4	Sites where the LA considers there is no risk or that the level of risk posed is low. Sites can include land where no relevant contaminant linkage has been established, normal levels of contaminants in soil, exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway

The sites in category 1 will be those with the highest potential for contamination, in the closest proximity to the most sensitive receptors. This will form the basis for the detailed inspection process with those sites being the highest priority. Figure 2 illustrates this hierarchy.

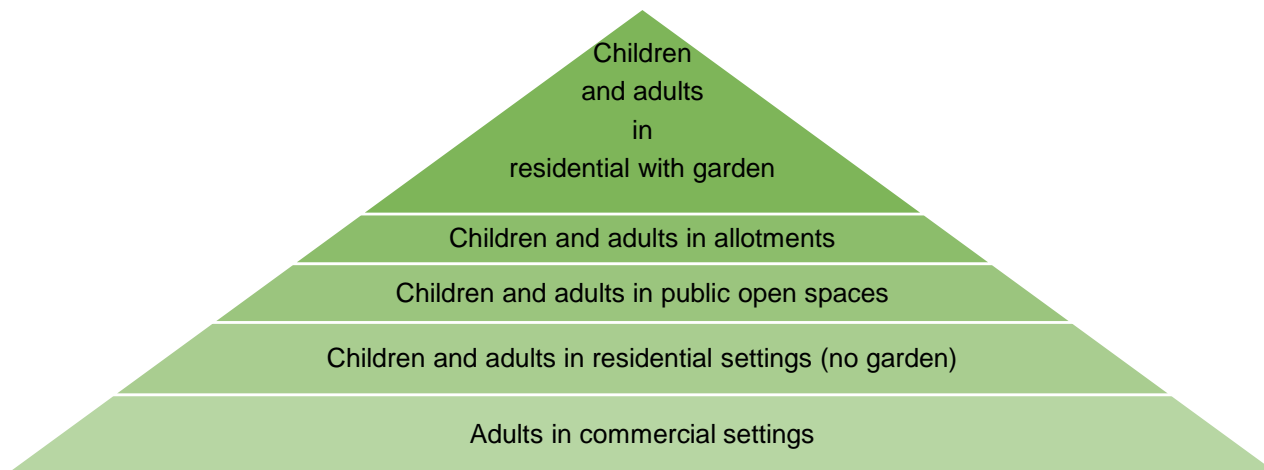


Figure 2: Hierarchy of land use and sensitivity of receptors

#### 4.2 Prioritisation Methodology

A simple methodology has been used to contribute to prioritising/screening the sites. This is based on the source – pathway – receptor model. Each component of the model will be awarded a numerical score, ranging from 1 to 10. See below.

Probability of Contaminants	Score
Improbable	1
Probable	5
Known to be present	10

Probability of linkage to receptors (pathway)	Score
Improbable	1
Probable	5
Known to be present	10

Overall Score	Inspection Priority
26 - 30	1
21 – 25	2
16 – 20	3
3 – 15	4

Receptors in relevant proximity	Score
Improbable	1
Probable	5
Known to be present	10

### 4.3 Detailed Inspection Process

If a plausible potential SPR linkage is identified after site prioritisation, the Council will move onto the next phase of the inspection process, the detailed inspection. These will be sites of most concern i.e. those sites falling into Category 1.



Figure 3: The Detailed Inspection and Investigation Process

There are a number of essential standards and procedures to adhere to during different phases of the detailed inspection process. These can be found below in table 4.

Table 4: Various standards and procedures relating to site investigation and analyses

Intrusive Investigation	Investigation Analyses	Gas and VOC Analyses
Environment Agency, Technical Aspects of Site Investigation	DEFRA Category 4 Screening Levels DEFRA SP1010 (2014)	CIEH 2008 Local Authority Guide to Ground Gas
Environment Agency - Land Contamination: Risk Management (2019)	LQM/CIEH S4ULs for Human Health Risk Assessment (2015)	CIRIA C682 2009 The VOCs Handbook
British Standard (BS) 10175:2011 + A2:2017 – The Investigation of Potentially Contaminated Sites – Code of Practice	AGS/EIC/CL:AIRE, Soil Generic Assessment Criteria for Health Risk Assessment (2009)	CIRIA C665 2007 Assessing Risks Posed by Hazardous Ground Gasses to Buildings
BS 5930: 2015 – Code of Practice for Ground Investigations	WHO Guidelines in Drinking Water Quality	CIRIA C735 2014 Good Practice on the Testing and Verification of Protection Systems for Buildings Against Ground Gas.
BS ISO 18400 – Soil Sampling	Drinking Water Regulations	British Standard (BS) 8485:2015 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings
CIRIA C665 (Assessing the Risks posed By Hazardous Ground Gases to Buildings)	Water Framework Directive Environmental Quality Standards	
BS ISO 5667-11 2009 (Water Quality. Sampling. Guidance on Sampling of Groundwaters)		
BS ISO 5667-22:2010 (Water Quality. Sampling. Guidance on the Design and Installation of Groundwater Monitoring Points)		



During the detailed inspection process, in line with this strategy's aims, as well as statutory guidance, the Council will seek to gain voluntary cooperation with the owner or occupier of the land. It is beneficial to establish this, particularly in the potential eventuality of further works and remediation. If, however, there is no cooperation or the owner cannot be found, the Council can consider using statutory powers of entry under section 108 of the Environment Act 1995.

#### **4.4 'Normal' Levels of Contamination**

It is important to note that Part 2A's primary function is to address land that presents an unacceptable risk. It is not to be used in circumstances where land with levels of contaminants in soil that are commonplace and widespread throughout England or parts of it. Waltham Forest is situated in East London, which has had a history of industrial use, therefore, whilst there may be areas of naturally occurring contaminants, the industrial history of London should remain considered when assessing soil contaminant levels. There is a DEFRA Technical Guidance Sheet on normal levels of contaminants in English soils 2012 which should be considered during the intrusive investigation phase of the detailed inspection process.

#### **4.5 Determination of Contaminated Land**

Once an appropriate detailed assessment has been carried out and the Council is satisfied that an unacceptable risk is present, due to an identified SPR linkage, the Council can then move to determining whether or not a site meets the legal definition of contaminated land, as defined in the legislation. Before making a formal determination, the Council will seek to inform the following interest parties:

- The owners of the land
- The occupiers of the land
- Any other person who appears to the authority to be liable to pay for remediation

At this stage the Council will also make consideration for whether to:

- (a) Give such persons time to make representations (for example to seek clarification of the grounds for determination, or to propose a solution that might avoid the need for formal determination) taking into account: the broad aims of regime; the urgency of the situation; any need to avoid unwarranted delay; and any other factor the authority considers to be appropriate.
- (b) Inform other interested parties as it considers necessary, for example owners and occupiers of neighbouring land.

## 4.6 Remediation

Once a risk assessment has been undertaken, following the ground investigation and land has been formal determined as contaminated, remediation will need to be undertaken. Remediation should seek to sever the pollution linkage, deeming a site safe and suitable for use. The site does not need to be returned to its natural state, nor be remediated to a standard for any potential future uses. In line with guidance, table 5 illustrates what the remediation should seek to achieve:

Table 5: Components of site remediation

Remedial Action	Example
Reduce or treat the contaminant	Physically remove the contaminant or soil, or treat the soil
Break, remove or disrupt the pathways	Sealing a site with a material such as clay or concrete, thus removing contact between source and receptor
Protect or remove the receptor	Change of the land use or restricting access to a site to reduce risks.

The Council will seek to ensure that any requirement for remediation is both practicable and effective. When evaluating whether a remedial scheme is practicable, the Council will consider a number of constraints which include the below:

Table 6: Typical Remedial Constraints

Constraints	Consideration
Technical Constraints	Do the technical capacity and resources exist, and could reasonably be made available?
Site Constraints	Access to the relevant land or waters, the presence of buildings or other structures in, on or under the land
Time constraints	Whether it would be possible to carry out the remediation within the required time period

## 4.7 Liability

At the stage of remediation, the Council will seek to identify those responsible for the contamination. In line with guidance and this strategy's objectives, the Council will, where possible, seek voluntary remediation of a site. Sites classified as Special Sites (Section 4.8 and appendix B will be managed by the Environment Agency.

In line with the “polluter pays principle” the party responsible for addressing land formally determined as contaminated land is termed the “Contaminant ” i.e. the individual(s) or corporate entity who caused or knowingly permitted the pollution. It is important to note that identifying the appropriate person can prove complex and lengthy; largely due to the at times extensive historic succession of ownership, meaning that different components of a contaminated site may be attributable to different polluters over different epochs in time. This also makes estimating and assigning respective remedial costs inherently difficult. The persons responsible for addressing the remediation are typically classified as one of the following:

Table 7: Classes of persons liable for addressing remediation

Class A person	Class B person
Typically, the person/corporation who have committed the polluting offence. Class A persons can also be those who knowingly permit pollution to occur.	Typically, the owner/occupier of the contaminated land. Class B persons are typically assigned liability if Class A persons cannot be identified.

If neither of the above can be identified, or if those who would otherwise be liable are exempted by one of the relevant statutory provisions, the significant linkage is thus considered an ‘orphan linkage’. The Council would then typically take remedial action and be responsible for the costs.

#### 4.8 Special Sites

Not all land identified as requiring determination as contaminated land will be managed by the Council. The Contaminated Land Regulations 2006 has set out a number of descriptions for a “Special Site” (See appendix B). Before any formal determination, the Council is required to consult with the Environment Agency. No formal determination will take place until detailed liaisons, advice and agreement from the Agency have taken place. Once a site has been designated as a “Special Site”, enforcement duties will be adopted by the Environment Agency.

### **5 Record of The Determination of Contaminated Land**

Once land has been formally determined as Contaminated Land under Part 2A, the Council will prepare a written record of this land. The record should clearly and accurately identify the location, boundaries and area of the land in question, making appropriate reference to Ordnance Survey grid references and/or global positioning co-ordinates. This record should explain why the site has been determined and include the following:

**a (i)** a relevant conceptual model comprising text, plans, cross sections, photographs and tables as necessary in the interests of making the description understandable to the layperson.

**(ii)** a summary of the relevant assessment of this evidence.

**(b)** A summary of why the authority considers that the requirements of relevant sections of the statutory guidance have been satisfied.

The local authority should 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.

## **5.1 The Public Register**

In line with Part 2A, the Council is required to keep a public register that will act as a full and permanent record of land of sites that have been formally determined as contaminated land. The Council currently does not have any sites formally determined as contaminated land under Part 2A, however, should this change, the register will be kept at the Council offices and be made available for public access. A copy of the register will be made available online. A list of the criteria required in the register is available in appendix C.

## **6 Costs Recovery**

Significant costs can be incurred during both the detailed inspection phase as well as the remediation of a site. Determining costs can be a complex, due to variation in the history and ownership of land, and liability for its remediation. The statutory guidance advises that the Council have regard to the circumstances of each individual case and consider the following principles:

(a) The authority 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.

(b) The “polluter pays” principle should be applied with a view that, where possible, the costs of remediating pollution should be borne by the polluter. The authority should therefore consider the degree and nature of responsibility of the relevant appropriate person(s) for the creation, or continued existence, of the circumstances which lead to the land in question being identified as contaminated land.

## Appendices

### Appendix A – Waltham Forest Local Plan 2020 – 2035: Policy 92

#### Policy 92 - Contaminated Land

We will manage contaminated land and prevent the spread of contamination by:

- A. Ensuring that site investigation and desk-based research is undertaken in line with current guidance for new developments proposed on contaminated or potentially contaminated land, and remediation proposals are agreed to deal with any identified contamination;
- B. Ensuring new development addresses the impacts of contaminated land on on/off-site sensitive receptors through proportionate action(s) during the construction phase and during the operation phase where appropriate, over the entire lifetime of the development; and
- C. Requiring development that has the potential to contaminate land, or which is situated in close proximity to sensitive receptors to include mitigation measures to prevent any adverse impacts on people and the environment, and to monitor any impacts where appropriate.

**18.14** Land that is seen to be affected by contamination will require thorough site visits and desk-based research, in addition to appropriate remediation strategies where new development is expected. In addition, this Local Plan will support developments which have proposed mitigation measures to reduce the impact of land contamination on people and the environment, whilst the impact of development on sensitive receptors will be also carefully managed.

## Appendix B - Special Sites Legal Definition

Please refer to the full legislation for the legal definition in its entirety. Contaminated land of the following descriptions is prescribed for the purposes of section 78C(8) as land required to be designated as a special site:

- (a)** land affecting controlled waters in the circumstances specified in regulation 3;
- (b)** land which is contaminated land by reason of waste acid tars in, on or under the land;
- (c)** land on which any of the following activities have been carried on at any time
  - (i)** the purification (including refining) of crude petroleum or of oil extracted from petroleum, shale or any other bituminous substance except coal; or
  - (ii)** the manufacture or processing of explosives;
- (d)** land on which a prescribed process designated for central control has been or is being carried on under an authorisation, where the process does not solely consist of things being done which are required by way of remediation;
- (e)** land on which an activity has been or is being carried on in a Part A(1) installation or by means of Part A(1) mobile plant under a permit, where the activity does not solely consist of things being done which are required by way of remediation;
- (f)** land within a nuclear site;
- (g)** land owned or occupied by or on behalf of—
  - (i)** the Secretary of State for Defence;
  - (ii)** the Defence Council,
  - (iii)** an international headquarters or defence organisation, or
  - (iv)** the service authority of a visiting force, being land used for naval, military or air force purposes;
- (h)** land on which the manufacture, production or disposal of:
  - (i)** chemical weapons,
  - (ii)** any biological agent or toxin which falls within section 1(1)(a) of the Biological Weapons Act 1974<sup>(6)</sup> (restriction on development of biological agents and toxins), or
  - (iii)** any weapon, equipment or means of delivery which falls within section 1(1)(b) of that Act (restriction on development of biological weapons), has been carried on at any time;



- (i)** land comprising premises which are or were designated by the Secretary of State by an order made under section 1(1) of the Atomic Weapons Establishment Act 1991(**Z**) (arrangements for development etc of nuclear devices);
- (j)** land to which section 30 of the Armed Forces Act 1996(**8**) (land held for the benefit of Greenwich Hospital) applies;
- (k)** land which is contaminated land wholly or partly by virtue of any radioactivity possessed by any substance in, on or under that land; and
- (l)** land which:

  - (i) is adjoining or adjacent to land of a description specified in any of sub-paragraphs (b) to (k); and
  - (ii) is contaminated land by virtue of substances which appear to have escaped from land of such a description.

## Appendix C – Public Register Requirements

The contents of the public register should contain the following:

- Remediation notices
- Appeals against remediation notices
- Remediation declarations
- Remediation statements
- Appeals against charging notices
- Designation of 'special sites'
- Notifications of claimed remediation
- Convictions for offences under section 78M of the Environmental Protection Act 1990
- Site specific guidance issued by the Environment Agency
- Other environmental controls

## Appendix D – Glossary of Terms

Appropriate Person	The person(s) or corporate entity responsible for addressing land determined as contaminated
Brownfield Land	Historically developed land with the potential for contamination
Conceptual Site Model	A diagrammatical illustration of source, pathway and receptor linkages
Contaminant	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.
Detailed Quantitative Risk Assessment (DQRA)	A detailed site-specific level of risk assessment that establishes whether there are unacceptable risks from established pollutant linkages.
GIS	Geographic Information System
Part 2A	Part 2A of the Environment Act 1995
Pathway	A route by which a receptor is or might be affected by a contaminant.
Prioritisation	The method of prioritising/ranking sites for detailed inspection
Public Register	A record of land of sites that have been formally determined as contaminated land
Receptor	Something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters
Remediation	The severance or distribution of pollution linkages, deeming a site safe and suitable for use
Suitable for use	The site is suitable for its current use i.e. there are no pollutant linkages associated with the site.

## Appendix E - List of Potentially Contaminative Land Uses

This list has been drawn up to provide a broad indication of the type of sites that are known to use or to have used in the past, materials that could promote the contamination of soil. The list is not exhaustive.

Adhesives manufacture	Metal sprayers and finishers
Anodisers	Mirror manufacture
Anti-corrosion treatment	Motor vehicle manufacture
Asbestos products	Oil fuel distributors and suppliers
Asphalt works	Oil merchants
Automotive engineering	Oil storage
Battery manufacture	Paint and varnish manufacture
Bearings manufacture	Paper works
Blacksmiths	Pesticides manufacture
Boiler makers	Petrol stations
Bookbinding	Photographic film works
Brass and copper tube manufacture	Photographic processing
Brass founders	Paper manufacture
Brewing	Plastics works
Carbon products manufacture	Plating works
Chemical manufacture and storage	Power stations
Chrome plating	Print works
Ceramics manufacture	Printed circuit board manufacture
Coal merchant	Radioactive materials processing
Coppersmiths	Railway land
Descaling contractors (chemical)	Railway locomotive manufacture
Detergent manufacture	Refiners of nickel and antimony
Distilleries	Resin manufacture
Dockyards	Rubber manufacture
Drum cleaning	Scrap metal dealers
Dry cleaners	Sealing compound manufacture
Dye works	Sewage works
Dyers and finishers	Sewage sludge disposal areas
Electricity generation	Sheet metal merchants and works
Electrical engineers	Ship breakers
Electro platers	Ship builders
Engineering works	Skein silk dyers
Explosives manufacture (including fireworks)	Small arms manufacture
Farms	Smokeless fuel manufacture
Fertiliser manufacture	Soap manufacture
Fellmongers	Solvent manufacture
Fibre glass works	Solvent recovery
Food processing	Steel manufacture
Foundries	Stove enamellers
Fuel manufacture	Synthetic fibre manufacture
Fuel storage	Tank cleaning
Garages and depots	Tanneries
Gas mantle manufacture	Tar and pitch distillers
Gas works	Textile manufacture
Glass works	Thermometer makers
Glue manufacture	Timber treatment
Gum and resin manufacture	Timber preservatives manufacture
Hatters	Tin plate works
Hide and skin processors	Transport depots
Ink manufacture	Tyre manufacture and retreading
Iron founder	Vehicle manufacture
Iron works	Vulcanite manufacture
Laquer manufacture	Vulcanisers
Laundries	Waste disposal
Leather manufacture	Waste recycling
Metal coating	Waste treatment
Metal manufacture	Zinc Works
Metal sprayers and finishers	
Mirror manufacture	