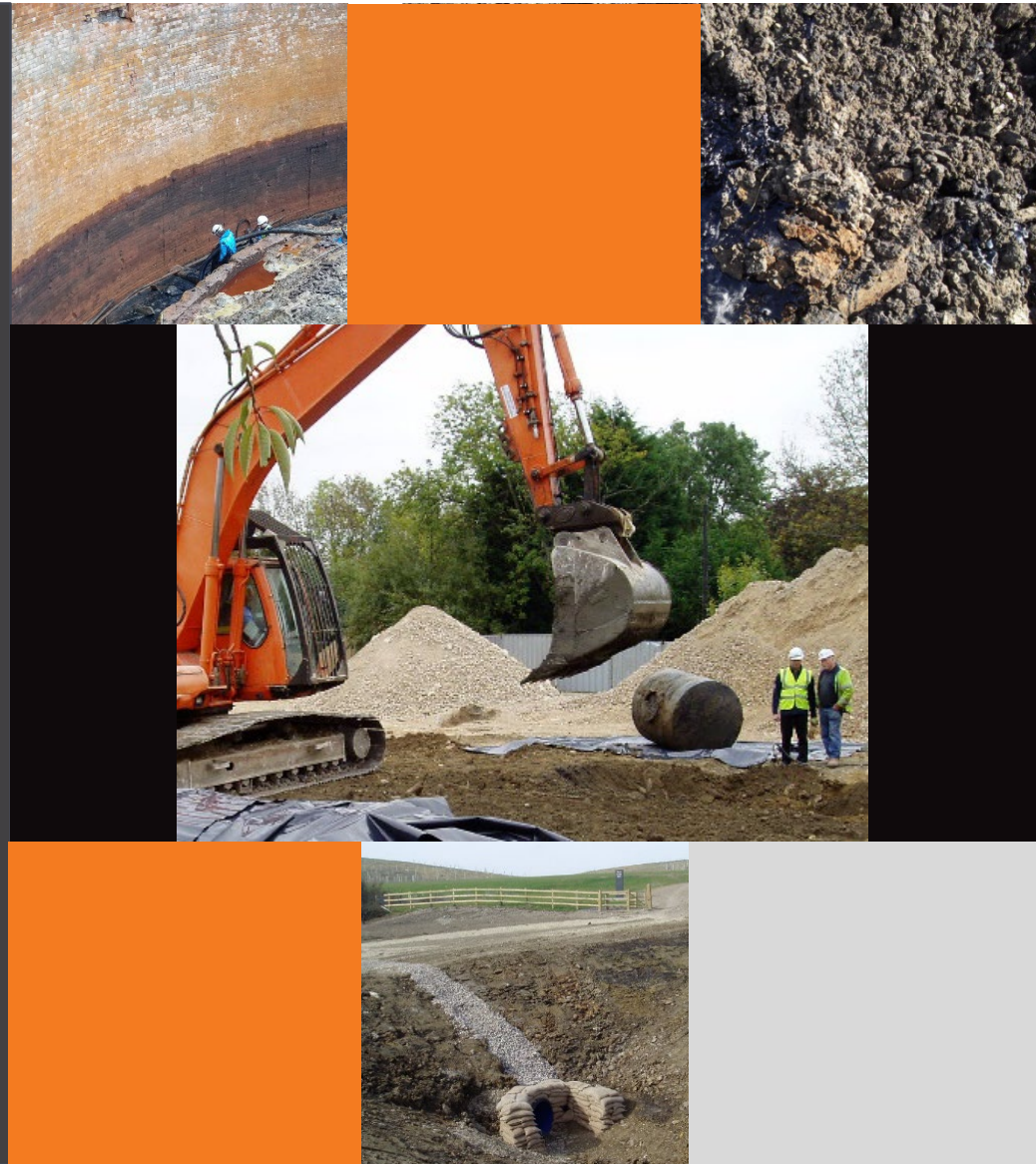


Swindon Borough Council

Contaminated Land Strategy

2023



Swindon Borough Council CONTAMINATED LAND STRATEGY

This Strategy has been through a process of consultation and approval by Full Council. This version was formally adopted on the date shown below and as such, it replaces the previous version from 2011.

Document History

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TABLE OF CONTENTS

	Summary	1			
1	Introduction	2			
1.1	Background	2			
1.2	General Policy of Swindon Borough Council	2			
1.3	Document Status	3			
2	Legislative Background	4			
2.1	General Principles	4			
2.2	Part 2A Objectives	4			
2.3	The Requirement for a Strategic Approach	4			
2.4	Definition of Contaminated Land	5			
2.5	Contaminant Linkages	5			
2.6	Risk Assessment	6			
2.7	Categorisation of Contaminated Land	6			
2.8	Overlapping Regulatory Functions	8			
2.9	Other Contaminated Land Activities	10			
2.10	Responsibilities	11			
3	Characteristics of Swindon Borough	12			
3.1	Introduction	12			
3.2	Size, Layout and Population Distribution	12			
3.3	Regional Geology	12			
3.4	Hydrogeology	13			
3.5	Hydrology	13			
3.6	Protected Locations	14			
3.7	Key Water Resource/Protection Issues	15			
3.8	Known Information on Contamination	15			
3.9	Current and Past Industrial History	16			
3.10	Known Local Conditions	16			
3.11	Land Owned by the Council	17			
4	The Council Strategy: Overall Aims	18			
4.1	Aims of the Strategy	18			
4.2	Objectives, Milestones and Inspections	18			
4.3	Noteworthy Progress since the Last Strategy	20			
5	Implementing the Strategy	22			
5.1	Inspection Process	22			
5.2	Inspection Stages	23			
5.3	Inspection Programme	24			
5.4	Reactive Investigation	24			
5.5	Information Requests and the Public Register	25			
5.6	Strategy Review	25			
6.	Remediation	26			
6.1	Objectives of Remediation	26			
6.2	Definition of Remediation	26			
6.3	Remediation Notices	27			
6.4	Reasonable Remediation	27			
6.5	Voluntary Remediation	28			
6.6	Financial Considerations	28			
6.7	Appeal Procedure	29			
6.8	Offences	29			
6.9	Remediation by the Council	29			
7	Determining Liability	30			
7.1	Principles of Assigning Liability	30			
7.2	Step 1 - Potential appropriate persons and Liable Groups	30			
7.3	Step 2 - Characterising remediation actions	30			
7.4	Step 3 Attributing Responsibility between Liability Groups	31			
7.5	Step 4 Excluding members of liability groups	31			
7.6	Step 5 - Apportionment of Liability and Costs	31			
7.7	Special Sites	32			
8	Liaison and Communication	33			
8.1	Internal Communication	33			
8.2	Communication with other Statutory Bodies	33			
8.3	Communication with Stakeholders	33			
8.4	Risk Communication	34			
8.5	Maintaining a Public Register of Contaminated Land	34			
8.6	Data Storage and Requests for Access to Information	34			
8.7	Access to the Public Register	35			
8.8	Restrictions and Information to be withheld from the Public Register	35			
8.9	Response to enquiries	35			
8.10	Environmental Information Regulations	35			
8.11	Complaints about contamination	36			
	References	38			
	Appendices	41			

Summary

Swindon Borough Council (the Council), in common with all other local authorities in the UK, is responsible for enacting Part 2A of the Environmental Protection Act 1990 in its locality. This specifically concerns the identification and management of contaminated land.

Each local authority is required to inspect its area to identify contaminated land and to prepare and publish a strategy setting out how this will be done. The strategy describes the procedure by which contaminated sites are identified and assessed, including procedures for their inspection and for securing remediation, where required.

Since its initial publication in 2002, the Swindon Borough Council Contaminated Land Strategy (the Strategy) has been updated to record progress with implementation and to take into account changes in legislation and statutory guidance. The Council's previous review and update of the Strategy was undertaken in 2011. This latest version of the Strategy has been written in accordance with the 2012 DEFRA guidance and other amended legislation.

Contaminated Land is defined in Section 78A (2) of the Environmental Protection Act 1990 as:

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, either: Significant harm is being caused or there is significant possibility of such harm being caused; or Pollution of controlled waters is being, or is likely to be, caused.

The assessment of sites considers whether they are suitable for use by the application of risk assessment principles. The presence alone of contamination at a site does not make it contaminated; there must be present a *receptor*, such as a person or environmental feature that might be harmed or polluted by the contamination, plus a *pathway*, a means by which the contaminant and receptor come together. Completed *contaminant-pathway-receptor* relationships are known as **Contaminant Linkages**.

Inspection of land is undertaken and comprises reviews of records to determine the likelihood of contamination followed by a prioritisation of sites for more detailed inspection. The prioritisation process is risk-based and follows a defined detailed methodology.

On occasion, the Council may use powers to enforce this inspection procedure, in particular to obtain information on contaminant linkages such as by carrying out invasive investigation.

There will be circumstances where, because of the specific nature of the site, it becomes a "Special Site" with regulation transferring to the Environment Agency. The Environment Agency has particular responsibilities under Part 2A such as contamination of water resources as well as other issues such as military land.

Considerable progress has been made enacting this strategy, with prioritisation, inspection and decision-making. To date, no sites in the Borough of Swindon have been determined to be Contaminated Land. By contrast, many sites have been remediated as a result of voluntary action by site owners and other responsible persons. Some of these sites may otherwise have been determined as contaminated land.

1 Introduction

1.1 Background

In the United Kingdom, there is a substantial legacy of land that is affected by contamination arising from a diverse industrial history and historically poor management of waste disposal activities. Although there are now various regimes in place to prevent new contamination occurring, the historic contamination which remains in the environment retains the potential to adversely affect people's health, damage quality of our waters, ecological systems and property.

Where land is identified as unsuitable for its current use on the basis of actual harm or significant risk from contamination, the local authority has a responsibility to intervene and ensure that those risks are properly reduced to an acceptable level. The Swindon Borough Council Contaminated Land Strategy (the Strategy) explains how Swindon Borough Council ("the Council") will go about doing this within the Borough, as required by legislation - Part 2A of the Environmental Protection Act 1990 (Part 2a).

The Government has issued statutory guidance under Part 2A which sets out overarching objectives of the government's policy on contaminated land and the Part 2A regime, the most recent version of which is the Contaminated Land Statutory Guidance of 2012 ('the Statutory Guidance').

1.2 General Policy of Swindon Borough Council

The Council has regulatory responsibility for carrying out duties and functions as set out in the Statutory Guidance in relation to contaminated land. The Council must inspect the Borough for land that could be contaminated and, if legally determined as contaminated

land according to the criteria specified, the Council is duty-bound to require its remediation.

The Council recognises the national policy and legal framework aimed at managing contaminated land as outlined above. It has planning policies aimed at encouraging the redevelopment of previously used land, some of which may be contaminated.

The Council manages its own portfolio of brownfield land and where brownfield land is owned by others, it encourages this to be brought back into beneficial use where appropriate and sustainable.

In the context of sustainable development, environmental, social and economic policy areas are key considerations in developing this Strategy because they:

- ensure unacceptable risks to human health and the environment are evaluated and addressed as necessary, thus ensuring a cleaner and healthier environment for local people and wildlife;
- encourage the efficient use of land and social resources; and
- ensure that the cost burdens of undertaking remediation are proportionate, manageable and economically sustainable.

Land contamination can take a number of forms and occur in a variety of places. Many different people and organisations are, therefore, likely to take an interest in a contaminated site, whether contamination has been proven or is suspected.



FIGURE 1 Removal of disused underground fuel tanks

The Council recognises that decisions about contaminated land are not made on a purely technical basis. There will be a variety of regulatory, commercial, financial, legal and societal factors, which also affect how particular contaminated land issues should be addressed. The Council also recognises that, as with its approach to local government in general, it is important that decisions about contaminated land are defensible and transparent.

The Council is dealing with contaminated land on an ongoing daily basis to assist the general principle of bringing land back into beneficial use in the most sustainable manner, whilst reducing risks associated with land contamination to an acceptable level.

Subsequent chapters of this Strategy set out the legislative context in more detail, the characteristics of land within the Borough and the means by which it will be assessed.

1.3 Document Status

The first edition of this strategy was drawn up in accordance with DEFRA technical guidance and was circulated internally and externally to solicit comments (2002).

Consultation on the previous 'Swindon Borough Council Contaminated Land Strategy (2011)' occurred with Council members, other Council departments and relevant organisations. This included the Contaminated Land Officers from the neighbouring authorities, the Environment Agency, English Heritage, and the Health Protection Agency (now the UK Health Security Agency).

This revised strategy has also been subject to consultation (Appendix A) and formally adopted by Full Council in December 2022.

2 Legislative Background

2.1 General Principles

Legislation relating to contaminated land has existed in England since April 2000, when the Statutory Guidance came into force. This is the statutory basis of the regime and local authorities were required to publish a strategy that sets out how they will deal with contaminated land and keep this under periodic review.

This Strategy replaces the previous Swindon Borough Council Contaminated Land Strategy 2011 and explains how the Council will continue to implement the contaminated land regime going forward, in accordance with the revised statutory guidance.

2.2 Part 2A Objectives

Part 2A should only be used where no appropriate alternative to address land contamination is available. This includes dealing with land contamination as part of the development control process (planning and building control), voluntary action, or other proactive regimes such as environmental permitting. The majority of contaminated sites in the UK are dealt with via the planning process.

The Government's main policy statement on contaminated land is now contained within a DEFRA guidance document: Environmental Protection Act 1990, Part 2A: Contaminated Land Statutory Guidance, April 2012 ('the Statutory Guidance'). The principles of this have also been incorporated into the Communities and Local Government document "National Planning Policy Framework" (NPPF) as published, and most recently revised in July 2021.

UK policy on land contamination in the planning regime as set out in the NPPF, emphasises the government's commitment to the environmental principles of "sustainable development" and "the polluter pays". It also requires that existing contamination that poses a threat to health or the environment is controlled and treated by the "suitable for use" approach.

The overarching objectives of the Government's policy on contaminated land are set out at para 1.4 of the Statutory Guidance:

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

2.3 The Requirement for a Strategic Approach

All local authorities are required to take a strategic approach to the identification of land in their area that merits detailed individual inspection. The Statutory Guidance requires that the approach adopted should be rational, ordered and efficient and it should reflect local circumstances. The local authority should set out its approach as a written strategy, which it should formally adopt and publish and which should be reviewed periodically. The Statutory Guidance details the six elements that should be included in the strategy and the following chapters of this document covers them all.

2.4 Definition of Contaminated Land

Section 78A(2) of the Environmental Protection Act as amended by the Water Act 2003, defines contaminated land as:

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, either: Significant harm is being caused or there is significant possibility of such harm being caused; or Pollution of controlled waters is being, or is likely to be, caused.

The second limb of the definition was subject to the 2003 amendment. This change in the legislation became effective as of 6th April 2012.

The local authority has the sole responsibility for determining whether any land appears to be contaminated land within its area although it will consult with other bodies, especially the Environment Agency.

Since the enactment of the contaminated land legislation, significant progress has been made in many technical areas of assessment and remediation of contaminated land.

2.5 Contaminant Linkages

The presence of a contaminant in land does not of itself mean that it is contaminated land within the meaning of Part 2A. The Statutory Guidance refers to Contaminant Linkages.

A **contaminant linkage** is a connection between a source of contamination and a receptor by means of a pathway. Prior to

determining that any land appears to be contaminated land on the basis that significant harm is being caused, or that there is a significant possibility of such harm being caused, the Council will identify at least one significant contaminant linkage comprising each of the following:

- a 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);
- a relevant **receptor** (something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters); and
- a **pathway** (a route by which a receptor is or might be affected by a contaminant)

Contaminant > pathway > receptor

Detailed definitions of the types of receptors are set out in Section 4 of the Statutory Guidance. The Statutory Guidance also refers to “significant contaminant linkages”, referring to those that give rise to a level of risk sufficient to justify a piece of land being determined as contaminated land. In determining what is significant, the Council will have regard to statutory guidance issued by the Secretary of State.

Contaminant linkages should be represented by a conceptual model for the site, which can either be in a diagrammatic form or tabulated and showing the possible relationships between contaminants, pathways and receptors.

The conceptual model is important throughout the whole process of risk assessment, and should be refined as more information is gathered about a site.

The Council will also act in accordance with statutory guidance issued by the Secretary of State in determining whether significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused. Prior to determining that any land appears to be contaminated on the basis that pollution of controlled waters is being, or is likely to be, caused, the Council will have identified at least one significant pollutant linkage where controlled waters constitute the receptor.

2.6 Risk Assessment

To determine whether there is the possibility of significant harm being caused, the Council must consider the nature, extent and duration of contamination and assess the susceptibility of nearby receptors. It will do this by carrying out an appropriate scientific and technical assessment, following the methodology set out in the Environment Agency’s publication - Land contamination: risk management (2020). This is a technical framework for structured decision-making, and reflects the Government’s policy on how risks from land contamination should be managed. Other peer-reviewed scientific and technical guidance will be applied as appropriate.

In essence, the approach to risk assessment requires all the hazards (contaminant sources) to be identified, then assessing the possible contaminant linkages and consequences of the risk becoming reality. Following this an estimate of the magnitude and probability of those possible consequences is made.

There are three tiers in the risk assessment process:

- **Preliminary Risk Assessment** comprising site history, setting, conceptual site model, qualitative risk assessment
- **Generic Quantitative Risk Assessment** intrusive investigation, comparison of site data to generic assessment criteria, refining the risk assessment
- **Detailed Quantitative Risk Assessment** deriving site specific assessment criteria for key contaminant linkages, refining risk assessment further to determine suitable mitigation measures

2.7 Categorisation of Contaminated Land

The Council will follow the system of categorisation in the Statutory Guidance when considering whether a significant possibility of significant harm (SPOSH) exists at a site.

For each receptor, the guidance details four categories:

Category 1	Category 2	Category 3	Category 4
Capable of being determined as contaminated land		Not capable of being determined as contaminated land	

Category 1	Site probably or certainly not suitable for present use and environmental setting. Contaminants probably or certainly present and likely to have unacceptable impact on key receptors. Urgent action needed in the short term.
Category 2	Site may not be suitable for present use and environmental setting. Contaminants probably or certainly present and likely to have unacceptable impact on key receptors. Action may be needed in the medium term.
Category 3	Site considered suitable for present use and environmental setting. Contaminants may be present but are unlikely to have unacceptable impact on key receptors. Action unlikely to be needed while the site remains in present use or otherwise remains undisturbed.
Category 4	Site considered suitable for present use and environmental setting. Contaminants may be present but are very unlikely to have unacceptable impact on key targets. No action likely to be needed while the site remains in present use or otherwise remains undisturbed.

Table 1. Application of Categories to sites in the Borough

Categories 1 & 2 encompass land that is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health. Categories 3 & 4 encompass land that is not capable of being determined on such grounds. A further description is given in the Statutory Guidance Chapter 4, with a summary of how each category will be applied in practice given in Table 1.

Uncertainties arise in allocating land to Categories 2 and 3. The Government recognised that regulatory authorities may have difficulties in assigning land to Categories 2 and 3 and, for a time, appointed through DEFRA a panel of experts from industry and local authorities to assist in making decisions with regard to these uncertainties. That panel is now disbanded, but detailed decisions made by the panel in cases submitted to it have been made available.

Category 4 Screening Levels (C4SLs) for soils were first published in 2014. These were developed to help decide when land is suitable for use in relation to human health and definitely not statutory contaminated land. Current published Soil Guideline Values (SGVs) and other soil Generic Assessment Criteria (GACs) are well within Category 4 and present minimal risk. The C4SLs are set at the top of Category 4 and although they would still be precautionary, their purpose is to speed up the decision making process for regulators. They are also very likely to act as a suitable remediation target for the development of brownfield land.

When considering whether significant harm is being caused, or there is a significant possibility of such harm being caused, to non-human receptors, local authorities should pay regard to Tables 1 and 2 of the Statutory Guidance. These address ecological system effects and property effects.

2.8 Overlapping Regulatory Functions

2.8.1 Appropriate use of Part 2A

Part 2A should only be used to secure remediation of contaminated land where no appropriate alternative solution exists. There are several regulatory functions that provide local authorities with legislative powers to deal with land contamination including planning, building control and the Environmental Damage Regulations. Action under Part 2A may be precluded where action under these regimes results in a desirable outcome, however, these should be assessed on a case by case basis.

The threshold for land to qualify as Part 2a land is high – in accordance with the spirit of the legislation the Council considers that land is not contaminated land unless there is reason to consider otherwise.

2.8.2 Inspection and remediation via the Planning Process

In July 2021 the Government published the latest version of the National Planning Policy Framework (NPPF). The latest planning policy makes some reference to brownfield and contaminated land (opposite).

It is important therefore that the Council’s Contaminated Land Officer (CLO) maintains close liaison with the local planning authority to ensure that, where land affected by contamination is put forward for development, site investigation and, where necessary, remediation, is carried out to the appropriate standard. Within the Council, the CLO is embedded and operates within the local planning authority and provides technical assistance in assessing planning applications and site investigation reports presented by developers.

The Council seeks to use the planning process where appropriate, to bring previously developed land into use as part of its sustainable development objectives.

“Planning policies and decisions should:

...give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land...” *Para 120*

“contribute to and enhance the natural and local environment by: remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.” *Para 174*

“...ensure that:

a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);

b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and

c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.” *Para 183*

“Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.” *Para 184*

At the time of writing, a number of sites which had the potential to be contaminated land under the Part 2A legislation, have been or are being dealt with by the action of developers through the planning process, including the following:

- Voluntary clean-up of two former gas works sites in central Swindon
- Residential development of former garage sites in various locations in and around Swindon, including removal of buried fuel tanks
- Residential development of two Council-owned sites to provide housing on disused urban brownfield land
- Commercial development of a filling station site in West Swindon and another at Greenbridge
- Development of several former railway works sites for residential and commercial use; and
- Remedial works at closed former landfill sites

Over 500 site investigation and remediation reports have been received and reviewed by the Council in connection with planning and building control applications within the last five years.

2.8.3 Building Control

Part C1 of Schedule 1 of the Building Regulations (2010, updated 2013) introduced the requirement for reasonable precautions to be taken to avoid danger to health and safety caused by contaminants on or in the ground covered, or to be covered by the building and any land associated with the building.

Technical guidance issued by the HM Government in the form of The Building Regulations 2010 Approved Document C – Site preparation and resistance to contaminants and moisture (2010, updated 2013) provides advice on site preparation and resistance to contaminants in order to mitigate the effects of contaminants, whilst recognising the connection between building control, planning and environmental protection.

The responsibility for securing a safe development rests with the developer and/or landowner, who should be made aware that actions or omissions on their part could lead to liability being incurred under Part 2A.

The building control function has an increasingly important role in securing a safe development with the rising number of developments being constructed using permitted development rights. Where contamination potential exists, restrictions on building approvals should be used to ensure developers undertake appropriate site assessments and address any unacceptable risk to human health and safety as part of the development.

2.8.4 Environmental Damage Regulations

The Environmental Damage (Prevention and Remediation) Regulations 2009 ('EDR Regulations') (S.I. 2009/153) as amended in 2015 and 2017 provide a mechanism to deal with environmental damage to land, water or ecosystems where has occurred after March 2009. They rely on the polluter pays principle requiring operators of commercial activity to have in place measures to prevent environmental damage and take remedial action if it does occur.

The term ‘environmental damage’ has a specific meaning in the regulations and is damage that adversely affects land, surface or groundwater, marine waters, protected species or natural habitats or a site of special scientific interest. The Council has enforcement responsibilities in relation to damage to land where this results in a significant risk of adverse effects on human health. Enforcement responsibility for damage to water is held by the Environment Agency, whilst damage to natural habitats or protected species or sites of special scientific interest is enforced by Natural England.

2.8.5 Environmental Permitting

The Environmental Permitting Regulations (England and Wales) 2016 (as amended) were introduced on 11th December 2016 replacing the 2010 regulations. These regulations cover industrial processes, waste operations, water discharges, groundwater activities and radioactive substances and give the enforcing authority the ability to apply conditions to permits to control activities and discharges to land, air and water.

Operators holding an environmental permit are liable for the prevention and remediation of environmental damage under the EDR Regulations.

2.8.6 Other regulatory functions

The examples of overlapping regulatory functions provided above may not be exhaustive and environmental legislation and regulatory responsibilities do not remain static. The Council will ensure the impact of any new legislation implemented following publication of this strategy is taken into consideration when implementing the contaminated land regime.

2.9 Other Contaminated Land Activities

Regular liaison takes place with a number of other bodies including the Environment Agency, UK Health Security Agency and Health and Safety Executive.

A close working relationship is maintained with other Council Departments, including Planning, Building Control, Property, Legal Services, Environmental Health, Transport and IT/GIS. Also with those responsible for managing significant areas of local land such as Parish Councils.

A large number of land quality enquiries have been received since the original Strategy was produced, mainly by land search consultants and conveyancing solicitors. Many of these required a detailed written response. In addition, enquiries from the general public and local businesses have also been regularly received, requesting advice and information. Work has been undertaken in response to several urgent incidents including: major fires at Brindley Close in 2013 and at Marshgate in 2014.

Guidance relating to general contaminated land matters has been produced – “Development of Potentially Contaminated Land: Guidance Note for Developers, Agents and Consultants” 2016 edition.

This is available for public download on the Council’s website: www.swindon.gov.uk

2.10 Responsibilities

This strategy has been reviewed with particular reference to the 2012 DEFRA guidance and the Council has adopted the following approach:

The PLACEmaking Team is the lead service within the Council for the purpose of the Strategy. The designated officer responsible for contaminated land is the Contaminated Land Officer (CLO) who will continue to work with and consult other services including Development Management, Planning Policy, Building Control, Land & Property and Legal Services, as appropriate.

The CLO also has responsibility for liaising with, and providing information to, the Environment Agency, Natural England, DEFRA, land owners, agents and members of the public in accordance with the Environmental Information Regulations and the Freedom of Information Regulations taking into consideration the General Data Protection Regulations.

A draft of the Strategy was considered by the Cabinet Member for the Environment, before being released for external consultation, including the Environment Agency, UK Health Security Agency, neighbouring Local Authorities.

The CLO will ensure that, as far as possible, land contamination is dealt with through the planning system or by voluntary remediation on the part of the current landowner. To date all sites within the Borough have been dealt with in this way.

The CLO will respond to requests for service and enquiries from members of the public regarding defined and potential contaminated land sites or issues.



FIGURE 2 Soil testing

3 Characteristics of Swindon Borough

3.1 Introduction

Swindon Borough Council is a Unitary Authority in southern England located in the Thames Valley within the historic county of Wiltshire between the Marlborough Downs and the Cotswolds. Swindon Borough has a population of 233,400 (2021, from the Office for National Statistics).



FIGURE 3 Swindon Borough Unitary Authority

The Borough comprises only around 6% of Wiltshire’s land area, but is home to about 30% of the county’s residents.

3.2 Size, Layout and Population Distribution

The Borough of Swindon covers an area of approximately 230 square kilometres or 89 square miles.

The vast majority (90%) of the Borough’s population is located in urban areas, within the town of Swindon itself or within the adjoining town of Highworth.

The Borough will be a major focus for housing development in the coming years. To complement development in the existing urban area, additional housing is under construction on green field sites at Tadpole Garden Village (approx.1800 homes), Badbury Park (1200 homes), Wichelstowe (4,500 homes) and the new Eastern Villages (8000 units). Additionally the current Local Plan sets out expectations for growth within the existing urban area of 3,500 dwellings and 90,000m² of office space within the plan period (2016-2026).

3.3 Regional Geology

The Borough of Swindon is underlain by Cretaceous and Jurassic deposits. The landscape is dominated by the chalk escarpment at the extreme south of the Borough – forming the Wiltshire Downs to the south and east. The Old Town stands on a hill of Purbeck and Portland stone; this was quarried from Roman times until the 1950s. The area that was known as “New Swindon” is made up of mostly Kimmeridge clay with outcrops of Corallian clay in the areas of Penhill and Pinehurst. Highworth is located on the northern scarp slope of an outcrop of the Jurassic Corallian Limestone. Oxford clay makes up the rest of the Borough.

3.4 Hydrogeology

An aquifer is a geological stratum or formation able to hold or transmit exploitable quantities of groundwater. Groundwater from aquifers can be abstracted to provide water for potable uses, miscellaneous industrial uses and/ or agricultural uses.

The Environment Agency (EA) divides the underlying strata in England into Principal Aquifer, Secondary Aquifers, secondary undifferentiated and Unproductive Strata in line with the Environment Agency's approach to groundwater protection and the Water Framework Directive (WFD). This replaces the former designation of Major, Minor and Non Aquifers.

Highly permeable chalk deposits are present across the southern extent of the Borough, south of a line approximately between Wroughton, Chiseldon, Wanborough and Bishopstone. The chalk strata dip gently southward. At the foot of the chalk scarp, groundwater emerges in a series of northward flowing springs. These form the headwaters of the River Cole and the River Ray. The Chalk is classified by EA as a Principal Aquifer and is the most significant aquifer in southern England.

Secondary Aquifers within the Swindon Borough comprise the formations of Lower Greensand, Purbeck Beds, Portland Beds, sands within the Ampthill Clay Formation and the Corallian Group (except clays). Lower strata of the Kellaway Beds, Cornbrash Formation, Forest Marble Formation and 'Middle Lias' are also Secondary Aquifers. Consequently, Secondary Aquifers are present under Kingshill, the Old Town, Coate, Eldene and Dorcan in southern Swindon and under Haydon Wick through Stratton and Blunsdon to Highworth and Hannington.

3.5 Hydrology

The River Ray rises at Wroughton to the south of Swindon and forms much of the Borough's western boundary, joining the River Thames, which defines the northern boundary. The source of the Thames is located at nearby Kemble, Gloucestershire. The River Cole and its tributaries flow north-eastward from Swindon and form the north-eastern boundary of the Borough.

The historic line of the Wilts & Berks Canal runs to the south of the urban area and on to Abingdon in Oxfordshire, whilst the historic line of the North Wilts Canal forms a spur linking the Wilts & Berks to the Thames and the River Severn north of Cricklade. Some sections of the canal network have been restored under the auspices of the Canal Trust, and are currently 'in water'.



FIGURE 4 Wilts and Berks Canal

3.6 Protected Locations

3.6.1 Areas of Special Interest and Ecology

The Borough contains important wildlife habitats, sites of special scientific interest, areas of special archaeological significance and locally designated sites. These are described below.

3.6.2 Areas of National Importance

The **North Wessex Downs Area of Outstanding Natural Beauty** is located on the southern fringe of Swindon Borough and is a local chalkland resource, with habitat for chalk-loving flowers, insects and rare butterflies. This area has been designated as an Area of Outstanding Natural Beauty (AONB) under the National Parks and Access to the Countryside Act 1949.

Located within the AONB is the former Royal Naval Aircraft Yard, this being the residue of the former RAF Wroughton Airfield complex that was constructed and developed in 1939-40. The airfield and six hangars are now used as a storage facility for the largest objects of the Science Museum and the former runways for solar power generation. A go-kart arena is located in one hangar.

Lydiard House is Grade I listed and the associated **Lydiard Park** is listed as Grade II by English Heritage. The boundary of this designation is the extent of the historic layout of the site that retains sufficient historical integrity. The county park currently extends for 110 hectares.

3.6.3 Sites of Special Scientific Interest (SSSI's)

Under the amended Wildlife and Countryside Act (1981), Natural England may designate land as being of special nature conservation interest.



FIGURE 5 Lydiard House Grade I Listed Building Grade II Listed Park

The best examples of wildlife habitats, biological and geological features and natural landforms are designated as Sites of Special Scientific Interest (SSSI's). There are nine SSSI's within the Swindon Borough:

- Burderop Wood
- Okus Quarry
- Old Town Railway Cutting
- Coate Water
- Great Quarry
- Bincknoll Dip Woods
- Clouts Wood
- Haydon Meadow
- The Coombs, Hinton Parva

3.6.4 Locally designated sites

SSSI's by themselves are not sufficient to conserve nature conservation resources. It is also important to conserve areas containing semi-natural habitats of recognised local nature conservation significance. Policies in place to provide such protection within Swindon include:

- **Local Nature Reserves** – these sites are also designated under the National Parks and Access to the Countryside Act (1949). There are seven within Swindon Borough. These are Coate Water, Sevenfields, Radnor Street Cemetery, Rushey Platt Park, Quarry Wildlife Garden, Barbury Castle and Stanton Park.
- **County Wildlife Sites (CWS)** - This is a non-statutory designation for sites of county significance for wildlife or geology. Within the Swindon urban area there are 24 CWS sites designated as being of substantive biodiversity importance. These cover a number of habitats including Neutral grassland (6), Broadleaved Woodland (9), Calcareous grassland (1), Fens, marsh and swamp (1), River (1), Standing open water (3), Wet woodland (2) and a mosaic of habitats (1).

3.7 Key Water Resource/Protection Issues

The water company that supplies the majority of the Borough's drinking water is Thames Water.

A private drinking water supply is a water supply which is not provided by the statutory water undertaker, and is thus the responsibility of its owner. The Council is required to regularly inspect the quality of 12 private drinking water supplies in its area, to ensure appropriate quality.



FIGURE 6 Views from Clouts Wood

3.8 Known Information on Contamination

The Council holds some information on contamination in the Borough, primarily submitted as part of the planning application process. If development is proposed on an area of land where past site use may have resulted in contamination, the Council will usually request a site investigation as part of a planning condition. If after any required site investigations, development proceeds on these sites, remedial works will be required as necessary to improve the site conditions to an acceptable level. Planning records form a valuable resource during the investigation process.

The Council currently holds information on hundreds of site investigation and remediation cases. Many of these are in hardcopy form only. However, in recent years the Council has made electronic copies of all reports submitted to it. Those submitted to support planning applications are available for viewing via the Council's planning pages on its website.

The majority of information relating to the location of suspected land contamination is stored on a dedicated land condition database that is linked to the Council's mapping system. Hence, sites that are subject to planning and building control applications are now screened for potential land contamination issues.

The Council has acquired appropriate GIS mapping layers from various sources. This comprises modern and historic mapping. All available information has been considered during development of the Strategy and when compiling the list of sites for prioritisation.

A public register of all regulatory action taken by the Council, in respect of remediation of contaminated land, has been set up. At the time of writing, there are no sites that have been formally determined as statutory contaminated land.

When the public register has entries, it will be made available to view at the Council's main office at Wat Tyler House, Swindon, or online via the Council's website.

3.9 Current and Past Industrial History

Swindon itself is a large industrial town, with a railway heritage dating back to 1840. However industrial activity in Swindon and its environs

dates back to the Roman era 2000 years ago when Portland limestone was quarried.

For around 150 years the railway industry dominated Swindon's activities. In later years Swindon has continued to be a major engineering town, in particular the manufacturing of cars and components. Swindon is also a financial and administrative centre.

In 2016, the largest employment sectors in Swindon were:

- Engineering and manufacturing, notably automotive and aerospace
- Distribution and Logistics
- Finance
- Digital Technology
- Medicine and Pharmaceuticals

3.10 Known Local Conditions

From assessment of submitted investigation reports, the Swindon area can be seen to have naturally elevated heavy metal concentrations in various areas, notably arsenic.

Arsenic is considered to be naturally occurring in the area and although arsenic compounds are generally considered to be toxic, naturally occurring arsenic is likely to have limited bioavailability, which is the fraction of the substance that can be absorbed by the body. Therefore, in most areas, naturally occurring arsenic is unlikely to pose significant health concerns.

3.11 Land Owned by the Council

The Council is a major landowner within the Borough. Much of this land is let to tenants. Where the Council is responsible for brownfield sites it operates a proactive approach to their management. For example, Shaw Forest Park is owned and managed by Swindon Borough Council. Over the past 25 years this 49.4 hectare former landfill site has been transformed into an urban forest as part of the Great Western Community Forest.

The Council has embarked on a programme of house building itself and this has utilised its own brownfield land, such as Euclid Terrace (Figure 7) on the site of a disused community building within an existing established residential district. A separate development is The Hawthorns, a 24 unit specialist housing scheme for assisted living on the former isolation hospital, completed 2018 (Figure 8).



FIGURE 7 Euclid Terrace, Swindon



FIGURE 8 The Hawthorns, Swindon

4 The Council Strategy: Overall Aims

This section sets out the Council's future aims and objectives.

4.1 Aims of the Strategy

In accordance with the requirements of a strategic approach as set out above, and in order to assist decision-making in a cost effective manner, the Council has devised a list of priorities for dealing with contaminated land as follows:

- protect human health;
- protect controlled waters;
- protect designated ecosystems;
- prevent damage to property; livestock and crops, etc.;
- prevent further contamination of land;
- encourage voluntary remediation; and
- encourage the re-use of brownfield land.

Wherever possible, the strategy will look to achieve these priorities through voluntary remediation and the redevelopment or regeneration of sites.

4.2 Objectives, Milestones and Inspections

The Council has considered the following in determining its approach to complying with its obligations within the Contaminated Land Regime:

- *Some of the most likely polluting sites (based on information from the DOE Industry Profiles) have already been remediated or redeveloped, or are still in active industrial use. Others of the remaining sites have been, or are due to be, coming forward for development and are included in the Local Plan.*
- *The Council has compiled the Brownfield Land Register, which provides information on all known brownfield sites in the Borough which are 0.25 hectares or larger, are available for development and are suitable for housing.*
- *Currently (as of 2023) the number of potential Part 2A sites to be investigated is estimated to be at 420. The majority of these are probable low risk sites where potentially polluting but responsible businesses have operated on small to medium areas of ground that have been in-filled with inert or unknown material over time. The information in the database is regularly updated as new information becomes available or sites are redeveloped and remediated e.g. through the planning system. It is likely that most of the sites on the priority list will ultimately NIT be considered as "Contaminated Land".*
- *Only 2 sites have been identified where the Authority considers that there is a reasonable possibility that a significant contamination linkage exists (as defined in the 2012 DEFRA guidance). These are both Council owned and remedial works have been completed at each.*

If the Council becomes aware of land that should be inspected, the inspection strategy will use the contaminant-pathway-receptor model as an indication of significant contaminant linkages.

A land categorisation and prioritisation method using a risk model has been employed to enable the identification of minimum information requirements. These requirements are:

- current land use plans;
- locations of current and former landfills and other areas of filled ground;
- locations of groundwater abstraction wells, both public and private;
- current surface water classification by the Environment Agency under the EU's Water Framework Directive (WFD)
- current processes authorised by the Environment Agency or local authority under the Environmental Permitting regulations.
- location of statutory and non-statutory sites of ecological importance;
- potential sources of contamination based on the industries listed in the DOE Industry Profiles (ref 5); and
- the current and historical locations of these industries.

The detailed procedures contained in the Statutory Guidance will be followed in all respects.



FIGURE 9 Gasholder Sludge removal

4.3 Noteworthy Progress since the Last Strategy

Further inspection and related activity (i.e planning-led development or voluntary remediation) has resulted in the remediation of many sites identified at the time of preparation of the previous Contaminated Land Strategy (2011). These are some of the highlights.

- **The top scoring 25 sites** of the Part 2A shortlist have been designated high priority, and an initial inspection and assessment has been made of each of these. Detailed investigation involving sampling has been carried out on 13 of these sites. Of the remainder, no immediate concerns have been identified.
- **Peatmoor Landfill site**, West Swindon. Works were undertaken to address issues at this former landfill site, which was mainly filled in the 1960s and 1970s, although waste was deposited in the 1980s. Major remedial works were completed between 2009-2012 to manage contaminated emissions generated from wastes deposited there. In particular, a constructed wetlands has been installed that combines treatment of contaminated water (leachate) with habitat creation to enhance biodiversity at this Great Western Community Forest facility. The whole landfill is now landscaped and open to the public as Shaw Forest Park.
- **Landfill site west of Brindley Close**. This landfill site is located to the north of the Swindon to Gloucester railway line. It was filled with municipal and other waste from immediately after the Second World War to 1960. Investigations were carried out that identified some areas of elevated near surface contamination. Subsequently the area has been densely planted with trees, a through walking route removed and some soil cover installed to reduce potential for exposure to contamination.



FIGURE 10 Peatmoor Landfill Site New perimeter drainage by SBC

- **Shaw Farm Landfill.** Restoration works to this Council-owned landfill site were carried out in phases from 2009-2012, then in 2015-16. A solar power generation facility is now located here.

Key development-led sites include significant areas of brownfield where some contamination has been appropriately addressed during the development process. For example measures to address spilt fuels have been completed at several filling station forecourts during routine renewal of the petrol storage infrastructure. Redundant fuel tanks and associated contamination have been removed at other filling stations that have closed. Decontamination of the former gasworks at Gypsy Lane was carried out in 2015-16.

Part 2A-related site investigation. Three phases of site investigation have been carried out at Spring Gardens recreation ground, owned by the Council. This identified infilled ground. A remedial plan was prepared, with earthworks and landscaping completed during 2022.



FIGURE 11 Shaw Landfill Site Restoration works by SBC

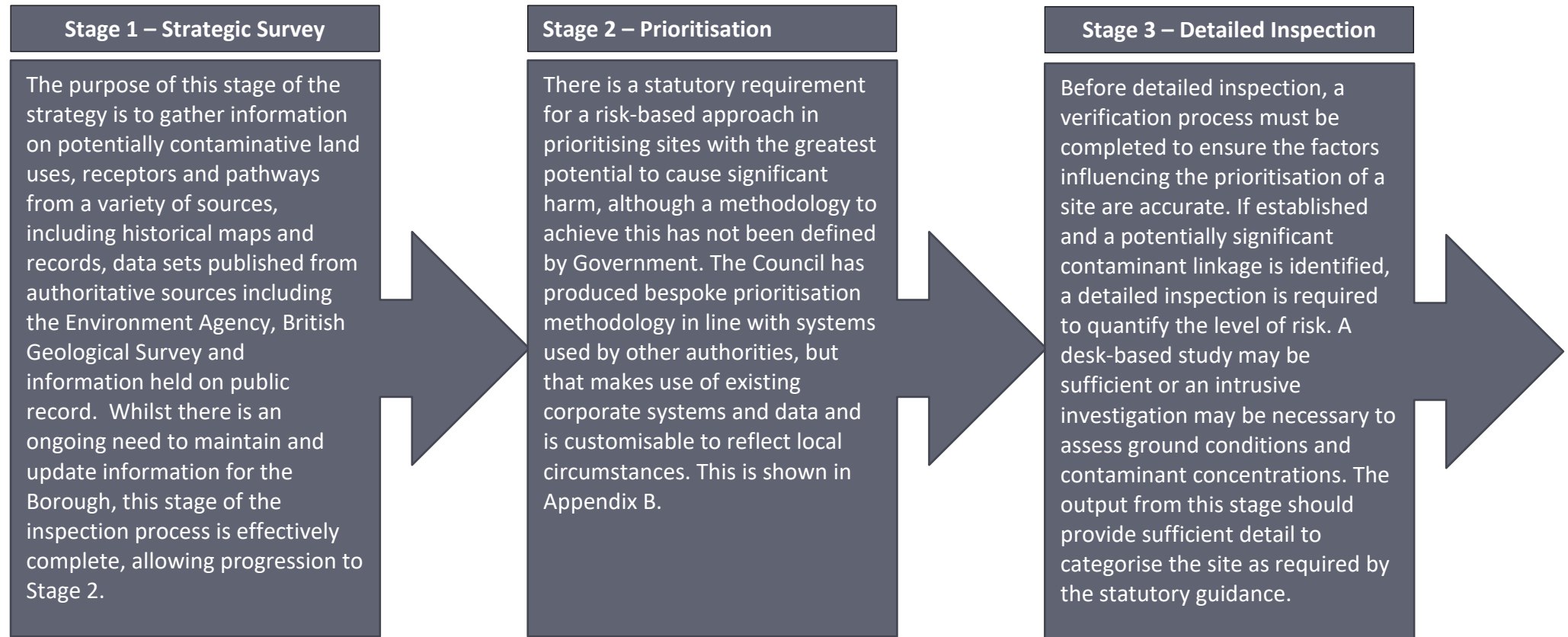
5 Implementing the Strategy

5.1 Inspection Process

This chapter will set out how the Council will meet its objectives.

The inspection process thus far carried out by the Council has identified sites for urgent action. These sites have been researched, where appropriate inspected and at the most important, necessary remedial works have been carried out.

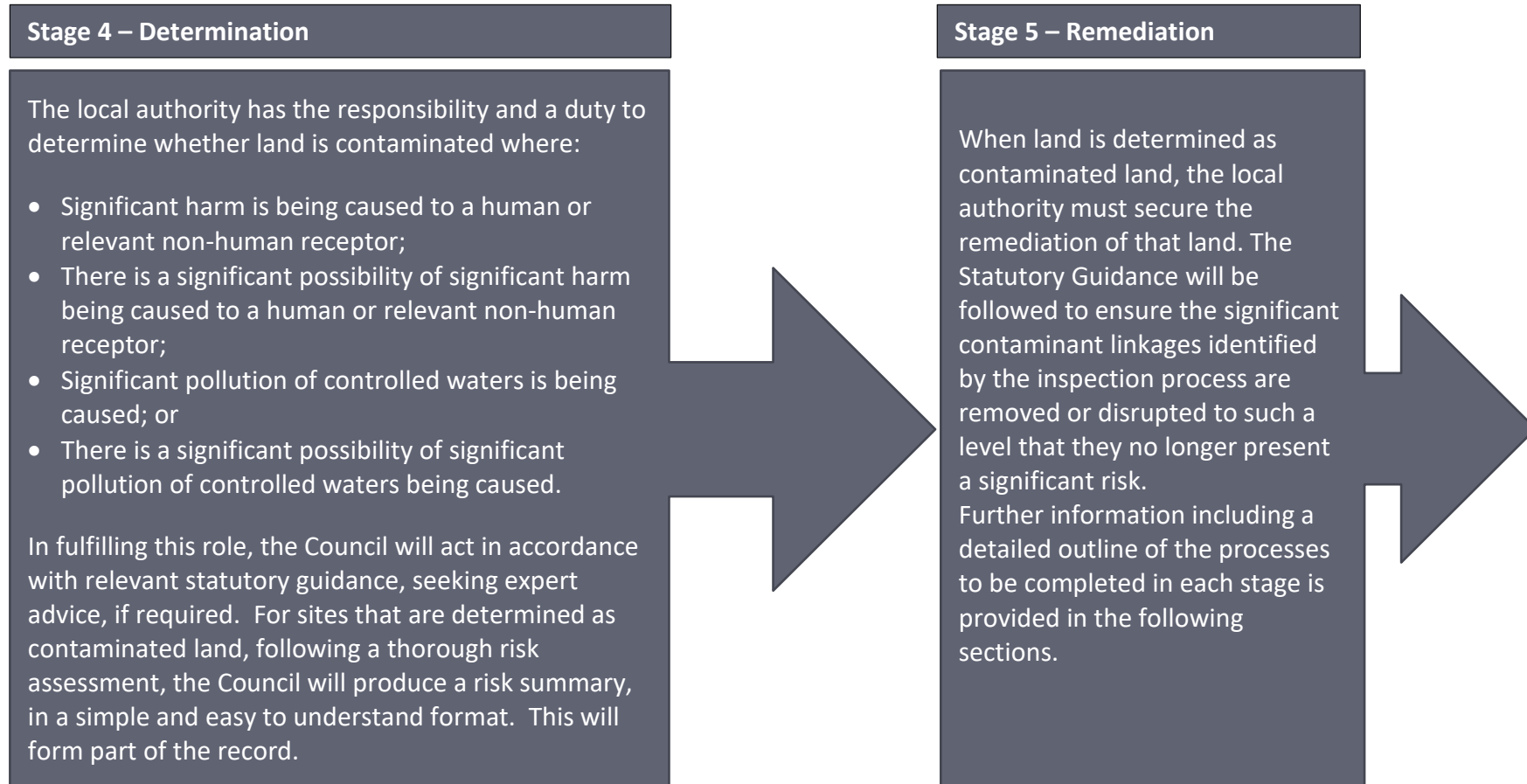
Other potentially contaminated sites have been and are being inspected and remediated through the planning process. In many cases, this has been carried out by developers where the use of the site has been changed to introduce a more sensitive receptor, as in the case of a change of use of land from industrial to residential dwellings with gardens, for example.



The inspection process in all cases must reflect the requirements of primary legislation and relevant statutory guidance and be capable of identifying contaminated land.

5.2 Inspection Stages

The Council has adopted a strategic approach to inspection as required by Government. This is broken down into five process stages as set out across pages 22 and 23:



5.3 Inspection Programme

The legislation and statutory guidance is not prescriptive in terms of how quickly the work on contaminated land needs to be completed, however, each local authority is required to set out in its strategy the timescales for the inspection process. Table 2 sets out the anticipated timetable for completion of each stage of the inspection process. Prioritisation is reviewed and updated as new information arises.

Table 2. Timetable for each Stage		
STAGE	TASK	COMPLETION TARGET
1	Strategic Survey	Completed
2	Prioritisation	Completed.
3	Detailed Inspection	As the need for inspection arises
4	Determination	As required, immediately following detailed inspection
5	Remediation	Within 12 months of Stage 4

5.4 Reactive Investigation

If the Council is made aware of any site not already listed on the database of potentially contaminated land that has the potential to be contaminated land under the Part 2A definition, then a process of investigation will be carried out from Stage 2 onwards. This would follow the Stages identified above in the same way as those sites already on the council's database of potentially contaminated land. The site would be subjected to the same process of prioritisation (Stage 2) as sites already listed. If the risk based assessment of the site, based on available information, indicates urgent action should be taken, a detailed inspection (Stage 3) would follow along with determination and remediation (Stages 4 and 5) if necessary.

If the status of a known site should change, as in the case of the introduction of a new receptor for example, then the site would be reassessed in terms of risk to those receptors. If it seems to the Council that the risks now posed by the site are such that a detailed inspection should be carried out (Stage 3) by the Council then this will be done with due regard to current best practice and published guidance.

This has happened already over recent years, when a number of new sites come to light and others have been reassessed according to new information on their setting. This means that the prioritisation list is dynamic to reflect changes and is kept updated, with sites added, details modified or sites removed.

Once a detailed inspection of the land in question has been completed and sufficient information has been gathered to indicate that remediation action is necessary, because the land is likely to be in Category 1: *Human Health or Water* in the Statutory Guidance, then a

risk summary will be produced as required under Section 3 of the Statutory Guidance. This risk summary will be communicated to all identified stakeholders.

5.5 Information Requests and the Public Register

The Council receives a steady flow of requests for information on contaminated land from consultants undertaking environmental assessments, to property vendors and purchasers and their solicitors. It is important, therefore, to maintain the database of sites so that responses can be made to these queries on the basis of up to date information.

The council is required under Section 78R of Part 2A to maintain a register containing prescribed particulars of actions taken by the Council in relation to the determination of contaminated land. Further information on access to data will be found in Chapter 8.

5.6 Strategy Review

This strategy will apply until reviewed, or if there is a significant change in legislation, statutory guidance or other factors dictate that the strategy should be reviewed at an earlier date.



FIGURE 12 Oil Contamination of groundwater

6. Remediation

6.1 Objectives of Remediation

Once the land has been assessed and identified as contaminated land, the land may be determined as contaminated land. Before making a determination, the Council will inform the owners and occupiers of the land and any other person who appears to the Council to be liable to pay for remediation of its intention to determine the land.

Once the relevant persons have been notified, a process of consultation begins to determine what remediation is required on that land.

The aim of remediation is take measures to remove or reduce unacceptable risks to human health and the environment. This is achieved by addressing the identified significant contaminant linkages, either by eliminating them or by reducing or permanently disrupting them to ensure they are no longer significant and that risks are reduced to an acceptable level. At this point the land would no longer qualify as contaminated land. Where this is not achievable, consideration should be given to remediation to a lesser standard to minimise risks as far as possible.

6.2 Definition of Remediation

Remediation is defined in s78A of the Environmental Protection Act 1990 as:

- a The doing of anything for the purpose of assessing the condition of –
 - i. The contaminated land in question;
 - ii. Any controlled waters affected by that land; or
 - iii. Any land adjoining or adjacent to that land;
- b. The doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or waters for the purpose-
 - i. Of preventing, or minimising, or remedying or mitigating the effects of, any significant harm, or any pollution of controlled waters, by reason of which the contaminated land is such land; or
 - ii. Of restoring the land or waters to their former state; or
- c. The making of subsequent inspections from time to time for the purpose of keeping under review the condition of the land or waters.

6.3 Remediation Notices

Following determination of contaminated land the Council has a duty to serve a remediation notice on the appropriate person(s) after a three-month consultation period. If there are viable remedial options, voluntary remediation is being or will be undertaken then there may be no need for a notice. If there is a need for urgent action where there is imminent risk of serious harm a different approach needs to be taken.

The need for urgent remediation action may occur at any time during an investigation and may be necessary where the Council considers there is imminent danger of significant harm or significant pollution of controlled waters. Under such circumstances, a remediation notice will be served as soon as practical — there is no requirement for prior consultation and the usual three-month interval between notification and service of the notice does not apply.

6.4 Reasonable Remediation

When considering whether the requirement to undertake the remediation is reasonable, the Council will consider:

- The practicability, effectiveness and durability of remediation including whether it is feasible for the appropriate person to complete the remediation specified within the timescale given, and whether this will remain a robust and effective solution for a sufficient length of time;
- The benefits of undertaking remediation compared to the health and environmental impacts of the chosen remedial options, including whether there are any direct or indirect health effects to workers or people affected by the works, or potential for damage to

the countryside, protected building and other sites of importance caused by the work;

- The financial cost which is likely to be involved at all stages of the process including preparation, remediation, monitoring, maintenance and value of the land; and
- The benefits of remediation with regard to the seriousness of the harm or pollution of controlled waters in question including increased land value following remediation and the likelihood of an occurrence or recurrence of pollution.

A remediation notice must specify what remediation is required and the timescales in which this must be done. When considering what remedial action is required, the Council will consult other regulatory bodies and have due regard for relevant technical guidance provided by regulatory, professional or technical organisations or act on the advice of a suitably qualified practitioner employed for that purpose.

A remediation declaration must be prepared in situations where the Council itself has caused or knowingly permitted the land to become contaminated land and is responsible for its remediation.

In accordance with the requirements of s78R of the Environmental Protection Act 1990, a copy of any remediation notices or remediation declarations prepared will be placed on the public register.

In the event that new information comes to light that alters the extent of the remediation required, or an alternative remediation scheme is proposed by the responsible person, it is possible to revise or revoke all or part of the notice.

6.5 Voluntary Remediation

The Council actively encourages voluntary remediation and will work with the appropriate person(s) during the consultation period to secure the informal remediation of contaminated land without the need for a formal notice.

When requiring remediation of a contaminated site, the regulations provide an incentive for voluntary action. Voluntary remediation is also often more likely to achieve a higher level of improvement in comparison to the minimum that can be statutorily required. It is often in the land owner/occupier's interest to carry out their remedial works.

The Council will, therefore, seek voluntary action wherever possible, only considering subsequent enforcement action if voluntary action is refused or considered unlikely to satisfactorily remediate the site.

Where voluntary remediation is considered appropriate, a remediation statement will be used in place of a notice to record the nature and extent of remediation required, the person responsible for the remediation and the delivery timescales. In accordance with the requirements of s78R of the Environmental Protection Act 1990, a copy of the remediation statement will be placed on a public register.

6.6 Financial Considerations

The cost of remediation of contaminated land can be considerable. The cost of remediation must be reasonable and proportionate to the seriousness of the harm or pollution to controlled waters. When considering the reasonableness of costs, the Council will take into consideration:

- Preparation costs including feasibility studies, remedial design and management
- Remediation costs including making good afterwards
- Land management costs including on-going monitoring and maintenance
- Relevant disruption costs
- Financial value and utility of the land as a result of remediation and who this affects.

The identity or financial standing of the appropriate person is not relevant when considering the remediation actions, although they may be relevant in deciding whether the cost of remediation can be imposed on such persons.

In making any cost recovery decision, the Council will have regard to the following principles, as set out in Section 8.5 of the Statutory Guidance:

- The Council should 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; and
- The 'polluter pays' principle, by which the costs of remediating pollution are to be borne by the polluter. The local authority should therefore consider the degree and nature of responsibility of the Appropriate Person for the creation, or continued existence, of the circumstances, which lead to the land in question being identified as contaminated land.

In general, means that the Council will seek to recover, in full, its reasonable costs unless it waives or reduces the recovery of costs to:

- Avoid any hardship which the recovery may cause to the appropriate person; or
- To reflect one or more of the specific considerations set out in the Statutory Guidance.

The apportionment of costs between multiple liable parties responsible for contaminated land is set out in the following chapter.

6.7 Appeal Procedure

A person served with a remediation notice under the Environmental Protection Act 1990 has a statutory right of appeal against the notice. Remediation notices served by the Council will contain information on the right to appeal. The appeal period is 21 days from service of the notice and any appeals must be made to the Secretary of State who can quash the notice, or confirm it with or without modification. Appeals are rare with only 2 having been made to the Secretary of State, to date.

6.8 Offences

If a remediation notice is served by a local authority or the Environment Agency it must be complied with by the owner or occupier of the land. Any person failing to comply with the requirements of a remediation notice is guilty of an offence and may be fined following successful prosecution.

6.9 Remediation by the Council

If the Council considers that serving a remediation notice would not result in the remediation happening soon enough, it may decide to carry out the remediation itself. This may happen where:

- urgent action is required
- no appropriate person can be found (“orphan sites”, see 7.6)
- where persons are excluded on the grounds of hardship
- where persons responsible are in default of a remediation notice
- where an arrangement has been made whereby the council carries out the remediation on behalf of appropriate persons.

Urgent remediation will occur where the Council is satisfied that there is imminent danger of serious harm or serious pollution of controlled waters or serious harm attributable to radioactivity being caused as a result of a significant pollutant linkage that has been identified. In all appropriate cases the Council will seek to recover costs of remediation works it has completed.

7 Determining Liability

7.1 Principles of Assigning Liability

The Part 2A legislation is based on the assumption that the appropriate person, ideally the ‘polluter’, pays for the cost of remediation as a result of voluntary or formal action.

Land may be declared contaminated land upon the identification of one significant contaminant linkage. Full liability therefore, cannot be decided until all significant contaminant linkages have been identified. Only then can the procedure relating to the apportionment of liability commence. The apportionment of liability has five distinct steps as follows:

1	Identifying potential appropriate persons and liability groups
2	Characterising remediation actions
3	Attributing responsibility between liability groups
4	Excluding members of liability groups
5	Apportioning liability between members of liability group

These procedures are complex and cumbersome and will be undertaken in accordance with the statutory guidance.

7.2 Step 1 - Potential appropriate persons and Liable Groups

The Council will carry out inspections and assessments as set out in the previous Chapters. It will then decide whether the land is statutory contaminated land and decide whose responsibility it is for managing the contamination.

The legal liability for remediating contaminated land follows a hierarchy:

In the first instance the person that caused the contamination would be liable. This might include, for example, the original operator of a factory on the land or a subsequent developer who built houses in its place. If these parties cannot be found or no longer exist then liability passes to the current landowner. In some cases this might be the owner-resident of the site. All appropriate persons for any one linkage are a ‘liability group’. These may be Class A or Class B persons, as set out on page 31.



7.3 Step 2 - Characterising remediation actions

Remediation means the ‘clean up’ of contaminated land. This essentially is concerned with removing a contaminant source or reducing the risk posed to receptors to an acceptable level. The Council shall identify suitable objectives that will achieve this goal.



7.4 Step 3 Attributing Responsibility between Liability Groups

Where significant contaminant linkages are found the Council will decide who will pay for any remedial action and will decide whether actions will be carried out individually or together as a package of actions.

If there is only one significant linkage, the liability group for that linkage will bear the full cost of carrying out that remediation work, unless it is an orphan linkage, where the Council will carry out this work.

Where there are multiple linkages and multiple liability groups the situation is more complex. The Statutory Guidance sets out in detail how liability is to be apportioned between liable groups (Section 7 of the Statutory Guidance).



7.5 Step 4 Excluding members of liability groups

Having identified liability groups as above, the Council may decide that one or more members of a liability group can be excluded from liability for remediation of contaminated land. In this case “excluded” means any decision by the Council that a person is not an appropriate person in accordance with section 78F(6) of Part 2A. Those who are excluded would not be responsible for the remedial action necessary for the linkage.



7.6 Step 5 - Apportionment of Liability and Costs

Following Steps 1 to 4 there should remain the identification of an appropriate Liability Group. The council will then consider the degree of responsibility of the appropriate person(s) for the creation, or continued existence of the contamination.

Usually the members of a liability group will have the total costs falling on the group as a whole, apportioned between them. It may also be necessary to determine how to apportion the costs between liability groups. The Council will have regard to the Statutory Guidance Section 7 in the application of the exclusion and apportionment tests.

Appropriate Persons – Class A

Class A persons are generally the polluters who caused the contamination in the first place, but also include persons who ‘knowingly permitted’ the contamination. This can include developers who leave contamination on a site that subsequently results in the land being determined as contaminated.

Appropriate Persons – Class B

Where no Class A person has been identified, liability reverts to the owner or occupier of the land. These are Class B persons, who were not responsible for causing the original pollution. Class B parties are only liable for remediation of contamination within the boundaries of their property and cannot be held liable for any pollution of controlled waters.

The Council will make all reasonable enquiries to identify the Class A persons before liability reverts to the current owner or occupier.

The appropriate person must be assigned for each significant pollutant linkage. This means that for a site that has had a series of contaminative uses over the years, each significant contaminant linkage will be identified separately and liability considered for each. This Step can result in multiple *Appropriate Persons* being identified.

Thus, for each pollutant linkage that may be identified, either a Class A liability group comprising persons who caused or knowingly permitted the pollutant to be present, or a Class B liability group comprising persons who are the current owners or occupiers of the land, could take on liability for that pollution linkage.

Orphan Sites and Orphan Linkages

A situation may arise where there is at least one significant contaminant linkage at a site and there is no Class A or Class B person found. This site would be considered as an *Orphan Site* and the enforcing authority would bear responsibility for that site in carrying out remediation and bearing the cost of remediation.

7.7 Special Sites

The Council must designate certain types of contaminated land as “Special Sites”. Once designated, the Environment Agency becomes the enforcing authority (rather than the Council) and assumes responsibility for requiring remediation to be carried out.

Special Sites include those that have been used for certain industrial activities such as oil refining, disposal of acid tars, used by the Ministry of Defence, contaminated by radioactivity or having a significant effect on water resources.

Once the Council is satisfied that a site has been determined as Contaminated Land and designated a Special Site, it will notify the Environment Agency of this in writing. If the Agency disagrees on the designation, it must notify the Council in writing within 21 days. If the Agency agrees or fails to inform the Council within 21 days, then the land will be designated a Special Site. The Council will notify the owner, occupier and appropriate person with respect to that land.

8 Liaison and Communication

8.1 Internal Communication

Before any site is determined as contaminated land, relevant departments within the Council will be consulted for their views and a brief will be produced to inform senior management and Law & Democratic Services. Elected Ward Members, in whose area the site is located, and the relevant Cabinet Member will also be informed of the statutory determination.

Colleagues in Property and Finance as well as Members of the Cabinet will also be informed at the earliest opportunity of any plans to determine Council-owned land where the Council might be considered the Appropriate Person and liable for remediation costs.

8.2 Communication with other Statutory Bodies

The Council will contact the Environment Agency on designation of a site as contaminated land and whenever a remediation notice, statement or declaration is issued or agreed.

The Environment Agency is required to report from time to time to the Secretary of State on the position relating to contaminated land in England. This includes:

- A summary of local authority inspection strategies, including progress and effectiveness;
- The amount of identified contaminated land and the nature of contamination; and
- Measures taken to remediate contaminated land.

The Council will provide information, upon request, to the Environment Agency to allow it to fulfil its reporting obligations to the Secretary of State.

When considering determination of a potentially contaminated site, the Council will engage in consultation with any other organisations that might have an interest in the site or that might be able to provide help and assistance. Such organisations include but are not limited to other local authorities, UK Health Security Agency, the Foods Standards Agency (FSA), the HSE and DEFRA.

8.3 Communication with Stakeholders

The Council aims to proceed with the process of investigating sites in a transparent and open manner. It will act to keep interested parties informed and updated regarding progress with the site inspection, as required by the statutory guidance.

The Council is obliged to follow the procedures detailed in the statutory guidance when considering determination of a site as contaminated land, whilst adhering to the Statement of Community Involvement. When requiring remediation of a contaminated site, the regulations provide an incentive for voluntary action. Voluntary remediation is also often more likely to achieve a higher level of improvement in comparison to the minimum that can be statutorily required. It is often in the land owner/occupier's interest to carry out their remedial works.

8.4 Risk Communication

The Council will be involved in the assessment of risks associated with contaminated land and ensuring that unacceptable risks from contamination are appropriately managed. Communication of the risks assessed and any risk-based conclusions will be made with reference to guidance (eg *SNIFFER* 2010, ref 3).

The Council recognises that it must anticipate and respond to the concerns, anxieties and expectations that may arise in response to land contamination and the emotive terms and descriptions this produces. It is not possible nor practical to eliminate each and every risk, meaning that it is not realistic nor financially viable to remove all risks due to contamination and in some cases it is not technically possible to do so (for example there are naturally occurring concentrations of some contaminants present in the soil). However, public perception and concerns are very real and should be taken seriously and addressed with sensitivity as part of the risk management programme.

Managing the potential conflict around the risk issues requires attention to the content of risk information, and to the appropriate procedures at relevant stages in the decision making process. The approach taken by the Council aims to address the following:

- The need for two-way communication;
- Transparency to create trust in the regulatory role; and
- Openness to enhance the legitimacy of the overall process to the stakeholder.

Risk communication should include the overall rationale and methods behind the assessment and management process. Risk communication

for a site should be flexible in terms of procedures and reflect the content and history around a particular contaminated site.

8.5 Maintaining a Public Register of Contaminated Land

The Council maintains a Public Register of Contaminated Land. This is a written record of any determination that particular land is contaminated and is to include relevant information after determination of the land as statutory Contaminated Land. At time of preparation of this Strategy, there are no entries on the Council's public register as no sites are identified as contaminated land as defined.

8.6 Data Storage and Requests for Access to Information

Information obtained and collated under this strategy is stored in both spreadsheet and GIS-based software form.

The Council regularly receives requests for information on contaminated land. Most of these requests are in relation to land and property purchase and transfer. Requests for information from the Council's records are also made by other agencies, commercial concerns and private individuals in this respect.

The Council is subject to the requirements of the Environmental Information Regulations 2004, the Freedom of Information Act 2000, the Data Protection Act 2018, the General Data Protection Regulations and several other pieces of legislation governing the storing and provision of information, such as the requirements of the Town and Country Planning Acts and related legislation.

The Council is aware that information on land contamination is a sensitive issue, as it can often contain terms and descriptions that are

emotive, which if incorrectly handled would give rise to concern and blight. The Contaminated Land Officer can provide advice and assistance in relation to all information on contamination.

The Council may make a reasonable charge for the supply of information, and for significant efforts to retrieve data.

8.7 Access to the Public Register

The public register will be made available free of charge at the main offices of the Council during office hours. Whilst it is not a requirement that an appointment is made, the availability of staff competent to answer any matters that may arise from inspection of the register cannot be guaranteed without prior notification.

8.8 Restrictions and Information to be withheld from the Public Register

The majority of information held by the Council relating to potentially contaminated land will be available in the public domain, unless there is a good and legally valid reason not to.

Note that while records will be made freely available for inspection, it may not always be possible to provide or allow copies of this information as a result of copyright restrictions, or further copyright restrictions might apply to documents made available. There are occasional circumstances where information pertaining to land condition may be deemed commercially confidential (such as under the regulations governing environmental permitting - Environmental Permitting Regulations (England and Wales) Regulations 2016), and thus not made generally available. Information that if available would be prejudicial to national security, or where disclosure might prejudice future legal proceedings, will also be restricted.

Under such circumstances the Council may not, or cannot place information on the public register (or release in response to other requests). Circumstances where information is withheld include:

- In the interests of national security;
- Commercially confidential information, or
- Data is subject to the Data Protection Act 2018 and the General Data Protection Regulations.

Where information has been excluded from the public register for reasons of commercial confidentiality, a statement will be included on the register to indicate this.

8.9 Response to enquiries

All enquiries relating to contaminated land will be directed to the Contaminated Land Officer at Swindon Borough Council. An initial response to the enquiry will normally be conveyed within 20 working days, except where pollution incidents are occurring during normal working hours, in which case it will be responded to on the same day.

8.10 Environmental Information Regulations

Environmental searches are routinely undertaken by solicitors through property conveyancing. Where searches require further assessment or “certificates” cannot be provided by the search company, the Contaminated Land Officer may provide additional information at an hourly rate stipulated in the Council’s fees and charges. The Council responds to specific written requests for information held by the authority on contamination, historic land uses and site investigation data. A disclaimer is added to the written response, making it clear that the information provided is to the best of the Councils knowledge, information and belief at that time.

This is consistent with the Environmental Information Regulations 2004. However, circumstances do exist where information is deemed confidential and will not be disclosed, (as described above).

8.11 Complaints about contamination

From time to time the Council may receive a complaint relating to land contamination from a member of the public, business or community group. This may be contamination that has been discovered or has been anticipated based on historic records.

Interested residents may also voluntarily supply information relating to the condition of land that is not directly affecting them, their families or their properties. These complaints or acts of information provision have the potential to impact on the Council's approach to inspection and so the procedures to be adopted are set out below.

A complaint regarding the quality of land will be dealt with as follows:

All complainants may expect:

- their complaint to be logged and recorded in the Council's database
- to be contacted by an officer regarding their complaint
- to be kept informed of progress towards resolution of the problem

Every effort will be made to resolve complaints quickly and efficiently. The legislative framework does however present a number of obstacles to the speedy resolution of problems:

- i. proof of a viable pollutant linkage before any formal designation as contaminated land is permissible, which might only be possible with detailed investigation.
- ii. prior consultation with interested parties before designation as contaminated land.
- iii. a minimum of a three month period between designation and serving of a remediation notice.
- iv. the requirement for the enforcing authority to make every effort to identify the original polluter of the land (or "Class A" person).

The regulations allow conditions ii) and iii) to be waived in extreme cases, but not conditions i) and iv).

All complainants will be asked to supply their names and addresses and, if appropriate, the site address that is the subject of the complaint. The identity of the complainant will remain confidential. The only circumstance in which this information might be made public would be in the case of a remediation notice being appealed in a court of law and an adverse effect on the complainant's health was an important reason for the original contaminated land determination. If a person or organisation provides information relating to land quality, which is not directly affecting their own health, the health of their families or their property, this will not be treated as a complaint.

The information supplied will be recorded in the Council's database, allowing officers to exercise professional judgement as to which

legislative regime or regulatory actions are best placed to facilitate resolution of the issue.

Complaints and enquiries relating to contaminated land or land affected by contamination will normally be considered by the Contaminated Land Officer located within the PLACEmaking Team. There is no statutory obligation for the Council to keep the person or organisation informed of progress towards resolution, although it may choose to do so as a matter of good practice.

Enquiries:

Please address any enquiries on this Strategy to:

The Contaminated Land Officer
PLACEmaking Team
Swindon Borough Council
Wat Tyler House
Beckhampton Street
Swindon
SN1 2JH
email: design&masterplanning@swindon.gov.uk



FIGURE 13 Oil contamination of stream

References

1. Department for Environment, Food and Rural Affairs (DEFRA), Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012.
2. Joint Strategic Needs Assessment for Swindon (source: the 2017 mid-year estimate from the Office for National Statistics (ONS) which was released on 28th June 2018).
3. Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) Project UKLQ13 Communicating Understanding of Contaminated Land Risks, May 2010.
4. Environment Agency, Land contamination risk management, April 2021 (Environment Agency's guidance on how to assess and manage the risks from land contamination).
5. DoE Industry Profiles (the Department of Environment (DoE) Industry Profiles, published in 1995, provide information on the processes, materials and waste associated with individual industries with regard to land contamination).



FIGURE 14 Shaw Farm Landfill Solar installation

Glossary	
Appropriate Person	Defined in Section 78A(9) as ‘Any person who is an appropriate person, determined in accordance with Section 78F, to bear responsibility for any thing which is to be done by way of remediation in any particular case’.
Brownfield Site/Land	A site that has been generally abandoned or underused where redevelopment is complicated by actual or perceived environmental contamination. Only a small proportion of brownfield sites will meet the definition of ‘Contaminated Land’.
Contaminated Land	Any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reasons of substances in, on or under the land that: <p>significant harm is being caused or there is a significant possibility of significant harm being caused; or</p> <p>significant pollution of controlled waters is being or is likely to be caused.</p>

Controlled Waters	These include: <p>Inland waters (rivers, streams, underground streams, canals, lakes, reservoirs);</p> <p>Groundwaters (any water contained in underground strata, wells or boreholes);</p> <p>Territorial waters (the sea within three miles of a baseline); and</p> <p>Coastal waters (the sea within the baseline up to the line of highest tide, and tidal waters up to the fresh water limit).</p>
Environment Agency	A non-departmental public body, sponsored by the UK government's Department for Environment, Food and Rural Affairs (DEFRA), with responsibilities relating to the protection and enhancement of the environment in England.
GIS Geographic Information Systems	A system of hardware and software used for storage, retrieval, mapping, and analysis of geographic data.

Hardship	In relation to recovery of the Council's costs, hardness of fate or circumstance or severe privation.
Part 2A	Part 2A of the Environmental Protection Act 1990.
Public Register	A register is kept by the enforcing Authority relating to contaminated land and details contaminated land that has been remediated as well as any enforcement action undertaken by the Authority.
Radioactive	Elevated concentrations of radionuclides resulting in elevated Contaminated Land levels of radiation above a certain level.
Remediation Notice	Defined by Section 78E(1) of the EPA 1990 as a notice specifying what an appropriate person is to do by way of remediation and the periods within which he is required to do each of the things specified.
Risk Assessment	The study of the probability, or frequency, of a hazard occurring; and the magnitude of the consequences.

Site investigation	The process of undertaking investigation on land to determine the condition of that land. The staged approach usually includes a desk study including a review of historical data and a site reconnaissance, and an intrusive investigation which includes trial pitting or drilling works, soil sampling, risk assessment and remediation works.
SGV Soil Guideline Values (SGVs)	Are published by DEFRA and the EA and represent a minimal level of risk and depend on the current use of the land. They do not represent significant possibility of significant harm).
Source Protection Zone (SPZ)	SPZs are areas close to drinking water sources such as groundwater abstraction points where the risk associated with groundwater contamination is greatest
Special Site	Contaminated Land which meets one of the criteria laid out in the guidance for regulation by the EA.

Appendix A - Consultees

The following stakeholders were consulted on the draft of this Strategy.

Swindon Borough Council - members	Elected Members (all)
Swindon Borough Council - internal	Petroleum Officer Head of Property
Local Government	Parish and Town Councils within the Borough of Swindon
Local Government – regional	Cotswold District Council South Gloucestershire Council Vale of White Horse District Council West Oxfordshire District Council Wiltshire Council
Key partner organisations	Environment Agency UK Health Security Agency

Appendix B Prioritisation Methodology

Preliminary prioritisation was undertaken to assess sites for future inspection and was achieved through the use of a scoring system. The purpose is to apply the system to all identified sites to provide a hierarchy for more detailed assessment (where practicable). The site categorisation methodology is based upon an assessment of the *Contaminant-Pathway-Receptor* linkage and takes account of the following factors:

- Contaminant Severity
- Pathway Efficiency
- Receptor Sensitivity

The initial step is to assign a site to a contaminative use under the DOE classification such as “gas manufacture and distribution” for a gas works site. If a site has been under multiple uses, it is assigned to the highest risk class for which it qualifies. A generic score according to the risk class of the contaminative use (i.e. High, Medium or Low) is appointed. A further step in Contaminant Severity assessment is allocating a landfill gas potential dependent on whether any filling has occurred on-site.

The next step is assessment of Pathway Efficiency. Here the site’s artificial, drift and solid geology is considered and scored. The final element of the pathway assessment is against boreholes and wells acting as pathways through the geological strata.

The following step considers receptor sensitivity. As with Source Severity assessment, a site will be assigned against the criteria that it tallies to with the highest score. For example where a site is within 50m of allotment gardens and agricultural or amenity uses, the site is assigned to the allotment gardens group with a score of 10 points.

Table B.1 below sets out the complete criteria and scores against which Contaminant, Pathway and Receptor Severity will be assessed.



FIGURE 15 Potential Land Contamination

SS1	DOE contaminative use classification of feature	Risk Ranking Score	SS1	DOE contaminative use classification of feature	Risk Ranking Score
High Risk Classes			Moderate risk classes		
C2A	Mining of coal/lignite, coal storage, petroleum and gas refining	10	C2B	General quarrying, heaps, mineral railways	5
C3A	Gas manufacture and distribution		C5C	Clay bricks and tiles manufacture, cement	
C3E	Electricity production and distribution		C8	Factory/works (unspecified use)	
C4B	Metal casting/foundries		C12B	Natural/man-made textile manufacture and products	
C7B	Chemical manufacturing (general)		C14A	Railways	
C8A	Engineering and manufacturing processes		C14B	Transport support and cargo handling	
C8B	Military land		C14C	Road haulage	
C11A	Timber treatment		Low risk classes		
C14C	Dismantling of vehicles, scrapyards		C9	Food processing, meat processing, animal slaughtering	2
C14Ci	Retail sales of fuel		C11A	Sawmills	
C15A	Sewage treatment, outfalls		C16	Air shafts, cemeteries, hospitals	
C15C	Waste Disposal: Treating, keeping, depositing or disposing of waste, including scrap		C16B	Environmental testing and analysis, laboratories	
C15Ci	Unknown filled ground (eg pit, quarry etc)				
Medium risk classes			SS2	Landfill gas potential	
C3Ei	Electricity production and distribution (inc substations)	7		Filled ground – landfill (i.e. C15C)	4
C8Ai	Transport manufacture and repair			No filled ground	0

Table 3 Site Categorisation - Criteria and Scoring

PATHWAY EFFICIENCY (PE)			Score	RECEPTOR SENSITIVITY (RS)			Score
PE1	Artificial geology composition			RS2	Groundwater vulnerability		
	Made Ground (known fill)		8		SPZ1/SPZ2	10	
	Made Ground (unknown fill)		4		SPZ3/Principal (Major aquifer)	8	
PE2	Drift geology composition				Secondary A (Minor aquifer, High)	6	
	No drift		10		Secondary B (Minor aquifer, Intermediate)	4	
	Granular		8		Secondary undifferentiated (Minor aquifer, Low)	2	
	Mixed granular/ cohesive		4		Unproductive (Non-aquifer)	1	
	Cohesive		2		Highest chemical surface water quality (of any controlled waters on or within 50m of feature)		
PE3	Solid geology composition				RS3	A	10
	Coarse grained or permeable fine grained rocks		8			B	8
	Mixed sequences or unknown lithology		4	C		7	
	Fine grained rock excl. Chalk e.g. Basalt		2	D		6	
PE4	Mine entries, Boreholes and Wells			E		5	
	Within feature or 50m of boundary		8	F		4	
	50-250m of boundary		4	Unclassified		3	
	250m-1km		2	Ecological receptors *			
RECEPTOR SENSITIVITY (RS)				RS4		Ramsar/SAC/SPA/NNR/MNR	8
RS1	Human receptors (on or within 50m of contaminative feature)					SSSI (NB – geological SSSI's may be less vulnerable)	6
	Residential (with and without gardens)		10		SNCI/LNR	4	
	Allotment gardens		8		Site of Local Conservation Importance (SLCI)	2	
	Schools/nurseries		8		SLCI (proposed)	1	
	Agricultural/amenity		4		Heritage receptors *		
	Commercial/industrial		2		RS5	Ancient Monument	4
	Other		1	None		0	

* spatially coincident with contaminative feature

Table 4 Pathway Efficiency and Reception Sensitivity

Calculation of Risk Ranking Score

On completion of the assessment against the Source, Pathway and Receptor criteria, a Risk Ranking Score for the site is totalled.

There is a maximum score for each section and overall as a site can only be attributed to one criteria within each segment such as 'Human Receptors'. e.g.:

$$SS_{\max} = 14$$

$$PE_{\max} = 34$$

$$RS_{\max} = 44$$

$$\text{Total}_{\max} = 92$$

Normalised Scores

The score of each section must be normalised using the maximum score of that section to provide even weighting of each of the three sections. The methodology for this calculation is set out below:

$$SS_n = (SS1 + SS2) \times (92/3)/14 \quad \text{i.e. multiplying factor of 2.19}$$

$$PE_n = (PE1 + PE2 + PE3 + PE4) \times (92/3)/34 \quad \text{i.e. multiplying factor of 0.90}$$

$$RS_n = (RS1 + RS2 + RS3 + RS4 + RS5) \times (92/3)/44 \quad \text{i.e. multiplying factor of 0.70}$$

Appendix C Definitions of Harm

Type of Receptor	Description of Harm to that Type of Receptor that is to be Regarded as Significant Harm
<p>1 Human beings</p>	<p>Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.</p> <p>For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned. This description of significant harm is referred to as a "human health effect".</p>
<p>2 Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> • an area notified as an area of special scientific interest (commonly called a Site of Special Scientific Interest - SSSI) under section 28 of the Wildlife and Countryside Act 1981; • any land declared a national nature reserve under section 35 of that Act; • any area designated as a marine nature reserve under section 36 of that Act; • an Area of Special Protection for Birds, established under section 3 of that Act; • any European Site within the meaning of regulation 10 of the Conservation (Natural Habitats etc.) Regulations 1994 (i.e. Special Areas of Conservation and Special Protection Areas); • any candidate Special Areas of Conservation (see Scottish Office Circular 6/1995) or potential Special Protection Areas given equivalent protection; • any habitat or site afforded policy protection (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949; or • any National Park designated under the National Parks (Scotland) Act 2000. 	<p>For any protected location:</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 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 addition, in the case of a protected location which is a European Site (or a candidate Special Area of Conservation or a potential Special Protection Area), harm which is incompatible with the favourable conservation status of natural habitats at that location or species typically found there.</p> <p>In determining what constitutes such harm, the local authority should have regard to the advice of Scottish Natural Heritage and to the requirements of the Conservation (Natural Habitats etc.) Regulations 1994.</p> <p>This description of significant harm is referred to as an "ecological system effect".</p>

3	<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 pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>This description of significant harm is referred to as an "animal or crop effect".</p>
4	<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".</p>	<p>Structural failure, substantial damage or substantial interference with any right of occupation.</p> <p>For this purpose, 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>Additionally, in the case of a scheduled Ancient Monument, substantial damage should 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>This description of significant harm is referred to as a "building effect".</p>

Table 5 Categories of Significant Harm

Descriptions of Significant Harm (as Defined in Table 5)	Conditions for there Being a Significant Possibility of Significant Harm
<p>1 Human health effects arising from</p> <ul style="list-style-type: none"> • the intake of a contaminant, or • other direct bodily contact with a contaminant (exposure). 	<p>If the amount of the pollutant in the pollutant linkage in question:</p> <ul style="list-style-type: none"> • which a human receptor in that linkage might take in, <p>or</p> <ul style="list-style-type: none"> • to which such a human might otherwise be exposed, as a result of the pathway in that linkage, would represent an unacceptable intake or exposure, assessed on the basis of relevant information on the toxicological properties of that pollutant. <p>Such an assessment should take into account:</p> <ul style="list-style-type: none"> • the likely total intake of, or exposure to, the substance or substances which form the pollutant, from all sources including that from the pollutant linkage in question; • the relative contribution of the pollutant linkage in question to the likely aggregate intake of, or exposure to, the relevant substance or substances; and • the duration of intake or exposure resulting from the pollutant linkage in question. • The question of whether an intake or exposure is unacceptable is independent of the number of people who might experience or be affected by that intake or exposure. <p>Toxicological properties should be taken to include carcinogenic, mutagenic, teratogenic, pathogenic, endocrine-disrupting and other similar properties.</p>
<p>2 All other human health effects (particularly by way of explosion or fire).</p>	<p>If the probability, or frequency, of occurrence of significant harm of that description is unacceptable, assessed on the basis of relevant information concerning:</p> <ul style="list-style-type: none"> • that type of pollutant linkage, or • that type of significant harm arising from other causes. <p>Such an assessment should take into account the levels of risk that have been judged unacceptable in other similar contexts.</p>
<p>3 All ecological system effects.</p>	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question, taking into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
<p>4 All animal and crop effects.</p>	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question, taking into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
<p>5 All building effects</p>	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question during the expected economic life of the building (or, in the case of a scheduled Ancient Monument, the foreseeable future), taking into account relevant information for that type of pollutant linkage.</p>

Table 6 Conditions for Significant Possibility of Significant Harm