

# Wiltshire Council Inspection Strategy for Contaminated Land



## Executive summary

Part IIA of the Environmental Protection Act 1990 became law on 1 April 2000, providing for the first time a legal definition of **contaminated land** and a new regulatory regime for its identification and remediation.

The regime places a duty on Local Authorities (LAs) to inspect the land within their administrative area periodically for evidence of ground contamination that is causing, or has the potential to cause, significant harm to environmental receptors.

The role of the Local Authorities under the new legislation is to:

- ❑ cause their administrative areas to be inspected to identify **contaminated land**
- ❑ determine whether any particular site is **contaminated land**
- ❑ act as the enforcing authority for any site that is not designated as a 'Special Site' (for which the Environment Agency is the enforcing authority).
- ❑ establish who should bear responsibility for the remediation of the land
- ❑ decide what remediation is required and to ensure that the remediation takes place
- ❑ determine who should bear the costs of remediation work
- ❑ record certain prescribed information about their regulatory actions on a **Public Contaminated Land Register**.

The new regulations require each authority to prepare, adopt and publish, a formal written strategy for the inspection of its area setting out a rational, ordered and efficient approach to the identification of land which merits detailed individual inspection.

The inspection will consist of a receptor based approach, a comprehensive search of potentially contaminative historical use of land where it is known that environmental receptors exist. The following priority for inspection of environmental receptors is proposed:

1. Human receptors: areas where the receptors are present and where long exposure times to contaminants are possible; areas such as schools, hospitals, residential homes and domestic dwellings, and where near constant exposure to any contamination may be expected, will be the main priority.
2. Human receptors: areas where receptors are present, but where exposure times to contaminants are limited. These areas will include business and commercial premises, public open spaces, recreational grounds/premises
3. Potable water abstractions, including private water supplies and the associated source protection zones

4. Controlled bodies of water not included in the above
5. Livestock and designated ecosystems.

This information will be handled in the council's Geographical Information System (GIS), and a database of sites where receptors and sources co-locate will be generated.

These sites will then be subject to a process of prioritisation and categorisation based upon risk assessment criteria. This will itself be a staged process and will categorise sites based on the likelihood of harm and of pathways existing.

An initial assessment of priority sites to identify those requiring prompt action will be carried out towards the end of the first year, however any sites considered as requiring urgent action will be dealt with as they come to the council's attention.

Wiltshire Council's inspection strategy is detailed herein and is prioritised to identify the most serious ground contamination problems which may pose an actual or potential risk to human health and the drinking water.

The inspection strategy for contaminated land is subject to review every five years or as necessitated by changes in primary legislation and supporting guidance.

# Contents

Executive summary .....	2
Table of figures.....	6
<b>1.0 Introduction.....</b>	<b>7</b>
1.1 The historical legacy of land contamination .....	7
1.2 Legislative framework.....	7
1.3 Key components of the Wiltshire Contaminated Land Strategy .....	8
<b>2.0 Key concepts of the UK contaminated land regime .....</b>	<b>10</b>
2.1 Principles of Part IIA .....	10
2.2 Objectives of Part IIA.....	10
2.3 Roles and responsibilities under Part IIA.....	11
2.4 The definition of contaminated land and pollutant linkage .....	12
2.5 The definition of harm.....	12
2.6 Addition of radioactivity to the part IIA regime .....	13
2.7 Risk assessment .....	14
<b>3.0 Characteristics of the administrative area.....</b>	<b>16</b>
3.1 General.....	16
3.2 Industrial history .....	19
3.3 MoD activities .....	23
3.4 Geology.....	24
3.5 Hydro geology.....	29
3.6 Flooding .....	34
3.7 Biodiversity, geodiversity, land use and historic environment .....	35
3.8 Land in local authority ownership.....	35
3.9 Ancient Monuments, bisted Buildings and conservation areas.....	36
<b>4.0 Development of the inspection strategy.....</b>	<b>38</b>
4.1 Progress to date .....	38
4.2 Identified sites and sites subject to validated remediation .....	38
4.3 Declared contaminated land in Wiltshire.....	39
4.4 Objective of the contaminated land strategy .....	39
4.5 Key priorities for the contaminated land strategy .....	39
4.6 Consultation and liaison .....	40
<b>5.0 Wiltshire Council inspection strategy .....</b>	<b>41</b>
5.1 Statutory obligations .....	41
5.2 Roles and responsibilities.....	41
5.3 Amalgamation of contaminated land data .....	42
5.4 Information on potential receptors. ....	43
5.5 Inspection priorities .....	44
5.6 Integration with the planning process.....	45
<b>6.0 Procedures .....</b>	<b>46</b>
6.1 Internal management arrangements.....	46
6.2 Local Authority interests in land .....	46
6.3 Information collection.....	47
6.4 Identification of receptors .....	48
6.5 Identification of potential sources .....	49
6.6 Identification of pathways .....	51
6.7 Information evaluation .....	52
<b>7.0 Interaction with other regulatory regimes .....</b>	<b>54</b>

7.1	Development control .....	54
7.2	Environmental Permitting (England and Wales) Regulations 2007 .....	54
7.3	Waste management licensing.....	54
7.4	Water Resources Act 1991 as amended by the Water Act 2003.....	55
7.5	The Finance Act 1996 .....	55
8.0	Complaints and information requests.....	56
8.1	Requests from regulatory bodies.....	56
8.2	Requests for information from other sources.....	56
8.3	Receipt of new information.....	57
8.4	Public register availability.....	58
8.5	Complaints regarding land contamination. ....	58
9.0	Liaison and communication.....	59
9.1	Wiltshire council departments .....	59
9.2	The Environment Agency .....	60
9.3	Statutory Authorities .....	61
9.4	Property Owners and other interested parties.....	61
9.5	The wider community.....	62
9.6	Powers of entry .....	63
6	Programme for inspection .....	64
10.1	Compliance with statutory guidance on inspection.....	64
11.0	Methodology for detailed inspection .....	66
11.1	Obtaining additional information .....	66
11.2	Consultation.....	66
11.3	Contact with the land owner/occupier .....	66
11.4	Walkover survey .....	66
11.5	Continual risk assessment .....	67
11.6	Investigation through sampling.....	67
11.7	Determination of contaminated land .....	67
11.8	Designation of contaminated land.....	68
11.9	Investigation through sampling.....	68
11.10	Potential special sites .....	69
11.11	Information from detailed inspection .....	69
11.12	Urgent remediation .....	69
11.13	Details on additional policy related to contaminated land.....	69
12.0	Information Management.....	71
12.1	General.....	71
12.2	Details entered on public contaminated land register .....	74
12.3	Provision of information to the Environment Agency .....	75

## Table of figures

Figure 1 Core objective of strategy .....	9
Figure 2 Definition of contaminated land .....	12
Figure 3 Definition of the terms harm and significant .....	12
Figure 4 The definition of significant harm and SPOSH.....	13
Figure 5 Example of a pollutant linkage .....	14
Figure 6 Examples of common pathways.....	15
Figure 7 Building density.....	17
Figure 8 Map showing Area Board Locations .....	18
Figure 9 Four hubs in Wiltshire .....	22
Figure 10 Bedrock geology 1:625,000 source BGS.....	26
Figure 11 Superficial deposits 1:625,000 source BGS.....	28
Figure 12 Aquifer protection zone.....	31
Figure 13 Map showing river catchments.....	32
Figure 14 Water abstraction in Wiltshire.....	33
Figure 15 Maps of Wiltshire showing areas in flood zone 2 .....	34
Figure 16 Sensitive environmental areas.....	36
Figure 17 Sites of historic importance.....	37
Figure 18 Key priorities for the contaminated land strategy. ....	39
Figure 19 List of consultees .....	40
Figure 20 Statutory obligations.....	41
Figure 21 Data on potential sources of contamination.....	42
Figure 22 Table showing potential receptors data sources .....	43
Figure 23 Priority for inspection .....	44
Figure 24 Sources of historic information .....	51
Figure 25 Sources of pathway information .....	52
Figure 26 Categorisation of land for inspection .....	53
Figure 27 Requirements for intrusive investigation.....	65
Figure 28 Flowchart of remediation process.....	70
Figure 29 Example of database entry .....	74

## **1.0 Introduction**

### **1.1 The historical legacy of land contamination**

The United Kingdom's historical heritage has resulted in a substantial legacy of land contamination some of which has the potential to harm both human health and the environment.

Many historic processes and practices used substances which we now know to be harmful and often produced wastes and by-products which were disposed of inappropriately. There was little concern for the environment and often few efforts to prevent human exposure.

In the period between the end of World War Two and the present there has been an increasing realisation that this industrial heritage had left us with a legacy of contamination which requires careful consideration. This is particularly the case where the decline of some industries and the need to reuse the resulting 'Brownfield' land often results in contamination being uncovered and could lead to fresh environmental problems and human exposure.

There is no accurate figure for the amount of contaminated land in the UK and estimates vary from between 100,000 and 300,000 hectares.

### **1.2 Legislative framework**

The Environmental Protection Act 1990 (EPA) introduced a number of controls to protect the environment, including section 143 of the Act which attempted to introduce a register of land that was potentially subject to a contaminative use. The initial legislation caused great fear of land blight and this combined with unclear guidance resulted in the provisions never being implemented.

The Environment Act 1995 replaced these provisions with a more comprehensive regime which is commonly known as Part IIA.

The key priorities enshrined in the legislation are:

- i) to ensure that risks associated with land contamination are reduced to an acceptable level
- ii) to bring contaminated sites back into a beneficial use
- iii) to ensure the cost burdens are proportionate, manageable and economically sustainable.

The Wiltshire Contaminated Land Strategy is part of a wider regulatory and strategic framework which is intended to protect the environment from inappropriate development, pollution, environmental crime and inadequate waste management.

### **1.3 Key components of the Wiltshire Contaminated Land Strategy**

Part IIA of the Environmental Protection Act 1990 places a number of duties upon the local authority. These are to:

- inspect the district to identify areas of land where land contamination is likely to present
- determine which sites meet the statutory definition of contaminated land and if these sites need to be designated as special sites
- ensure that effective remediation of contaminated land occurs, by voluntary action if possible and by the use of enforcement powers should this become necessary
- determine who is responsible for causing the pollution and who should pay for the clean up (the 'polluter pays' principle applies)
- inform the public of the action taken and to maintain a public register of declared sites
- ensure that potential land contamination issues are considered in all strategic planning and developmental control decisions.

In addition to the statutory duties the strategy requires that a database of land owned by the authority, which may be subject to contamination, be compiled and risk assessed to ensure it is fit for purpose.

The delivery of the strategy will require partnership working, particularly with the Health Protection Agency and the Environment Agency which will be able to provide invaluable site specific assistance.

In April 2009, Wiltshire became a unitary authority, replacing the previous two tier structure. This required the merging of Wiltshire County Council, West Wiltshire District Council, Salisbury District Council, North Wiltshire District Council and Kennet District Council.

The four district councils have already made good progress in collating and evaluating historical data on past industrial and land uses that may have led to contamination and have identified sites of potential concern. The existing data needs to be combined into one data set and to be reprioritised to ensure that sites are correctly prioritised and that the



correct actions are taken by the appropriate authorities.

The strategy has been developed having regard to the legislative requirements, key national priorities, best practice and the characteristics (geographical, social and economic) of the local area.

The strategy sets out the council's approach to inspecting its area to identify contaminated sites and ensure proportionate, timely and effective action is taken to make them suitable for use. Its core objective is given in fig.1 below.

To protect human health and the environment by identification of potentially contaminated sites that require detailed individual inspection in a rational, ordered and efficient manner and to ensure a proportionate response to contamination and remediation using a risk based approach
---

**Figure 1 Core objective of strategy**

## 2.0 Key concepts of the UK contaminated land regime

### 2.1 Principles of Part IIA

Sections 78A to 78YC of the Environmental Protection Act 1990 contain the main legislation relating to contaminated land. This is accompanied by the Contaminated Land (England) Regulations 2000 ('the Regulations') and by a Department of the Environment Transport and the Regions (DETR) circular, Circular 02/2000 Contaminated Land: Implementation of Part IIA of the EPA 'the circular'), updated in September 2006 as Circular 01/2006.

The government has adopted a 'suitability of use' approach when considering land contamination and requires the use of risk assessment on a site by site basis. It is necessary to consider the extent of the contamination in relation to the current and adjacent land, local circumstances and a wide range of environmental impacts. There are three main elements to this approach.

- i) **Ensuring land is suitable for its current use.**  
Identifying land where the type and extent of any contamination causes an unacceptable risk to human health, and remediating the land to a condition where the risks are reduced to an acceptable level.
- ii) **Ensuring land is made suitable for any new use**  
Assess the potential risk from contamination on the basis of a proposed future use, before planning permission for that use is granted, and, where necessary, ensuring that land is remediated before the new use commences in partnership with the local planning authority, building control and other agencies as appropriate.
- iii) **Proportionate approach to remediation**  
Limit the requirements for remediation to works that are essential to prevent unacceptable risks to human health or the environment for uses that are permitted under the current planning permission.

### 2.2 Objectives of Part IIA

Circular 02/2000 outlined the primary objectives for introducing the Part IIA Regime.

- i) To improve the focus and transparency of the controls, ensuring authorities take a strategic approach to the problems of land contamination
- ii) To enable all problems resulting from contamination to be handled as part of the same process
- iii) To increase the consistency of approach taken by different authorities
- iv) To provide a more tailored regulatory mechanism, including liability rules, better able to reflect the complexity and range of circumstances found on individual sites.

## **2.3 Roles and responsibilities under Part IIA**

The Department of the Environment, Food and Rural Affairs (DEFRA) has the primary responsibility for the strategic management of the contaminated land regime and for implementing and reviewing the associated national policies.

The Local Authority (LA) takes the primary role in terms of regulation and local implementation. The duties are complimentary to the existing statutory nuisance and planning regimes for which the Local Authority was already responsible. The Environment Agency (EA) has responsibility where controlled waters may be affected and has additional powers within other enforcement regimes to complement the provisions of Part IIA. The duties are specified below:

### **The Local Authority**

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

### **The Environment Agency**

- i) To assist the Local Authority in identifying contaminated land, particularly if the pollution of controlled waters is involved
- ii) To provide site specific guidance to local authorities
- iii) To act as the enforcing authority on any site identified as a 'special site'
- iv) To publish periodic reports on contaminated land
- v) To carry out technical research and, in conjunction with DEFRA, publish scientific advice.

The Environment Agency is the primary enforcement authority in respect of the disposal of waste, discharge to and pollution of

controlled waters and more complex industrial processes regulated under the Environmental Permitting (England and Wales) Regulations 2007. Under these regulations the Environment Agency has the power to prevent further contamination of land and to secure remediation of and existing contamination.

## 2.4 The definition of contaminated land and pollutant linkage

'Contaminated land' has a specific legal meaning under section 78A(2) of part IIA of the EPA. The definition is given in figure 2 below.

<p>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 –</p> <p>Significant harm is being caused, or there is a significant possibility of such harm being caused; or</p> <p>Pollution of controlled waters is being, or is likely to be caused.</p>
<p>For land to be considered 'contaminated' the local authority must establish that each of the following exists, forming a pollutant linkage:</p> <p>a contaminant a relevant receptor a pathway by which means either:</p> <p>that the contaminant is causing significant harm to that receptor, or there is a significant possibility of such harm being caused by that contaminant to that receptor</p>

Figure 2 Definition of contaminated land

## 2.5 The definition of harm.

The above definition includes the term 'significant harm'. The EPA does not include a specific definition for this phrase but does define 'harm' in section 78A(4). The definitions are included in figure 3 below.

<p>'Harm to the health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property. (HMSO)</p> <p>The definition of significant is given in the Compact Oxford Dictionary as '1) extensive or important enough to merit attention. 2) having an unstated meaning; indicative of something.' (Oxford University Press)</p>
--

Figure 3 Definition of the terms harm and significant

Further clarification on the meaning of significant harm and the significant possibility of significant harm in terms of human health was given in Annex 3 to circular 01/2006. These extracts are included in figure 4.

'Significant harm to human health includes death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive functions. In this context disease means an unhealthy condition of the body or a part of it and can include for example cancer, liver dysfunction or extensive skin ailments.'

'Significant Possibility of Significant Harm (SPOSH) in relation to toxic effects on human health, would exist if the amount of the pollutant to which a person might be exposed would represent an "unacceptable" intake or "unacceptable" direct bodily contact, assessed on the basis of relevant information on the toxicological properties of that pollutant.'

**Figure 4 The definition of significant harm and SPOSH**

The guidance does not explain what significant/unacceptable means but instead relies on local authorities using a risk based approach to determine if SPOSH applies.

Further guidance on what would constitute significant harm or SPOSH in relation to non toxic effects on humans, property and the environment were provided in tables A and B of circular 01/2006 (Environmental Protection Act 1990: Part 2A Contaminated Land).

In practice SPOSH must be interpreted on a site specific basis and takes into account the probability or frequency of the occurrence or circumstances that would lead to significant harm being caused. The following factors apply:

- i) The nature and degree of possible harm
- ii) The susceptibility of receptors to such harm
- iii) The timescale within which the harm might occur.

## **2.6 Addition of radioactivity to the part IIA regime**

In its original form, Part IIA did not include the consideration of radioactive materials; however, in July 2005 the contaminated land regime was expanded to include radioactive contamination. This change was implemented by the Radioactive Contaminated Land (Enabling Powers) (England) Regulations 2005, coming into force in January 2006. Only the possible exposure of humans is considered and if land is determined to be contaminated within the meaning of the

act it will be dealt with by the Environment Agency as a special site.

## 2.7 Risk assessment

The determination of significant contamination is based on the use of a risk assessment. Risk is defined as a combination of:

- i) the probability, or frequency, of the occurrence of a defined hazard
- ii) the magnitude of the consequences.

A contaminant can only pose a risk to a receptor if there is a route for the receptor to be exposed to the source of the contaminant. This is known as a contaminant pathway.

If a source, pathway and receptor are present it is possible to establish that a pollutant linkage exists.



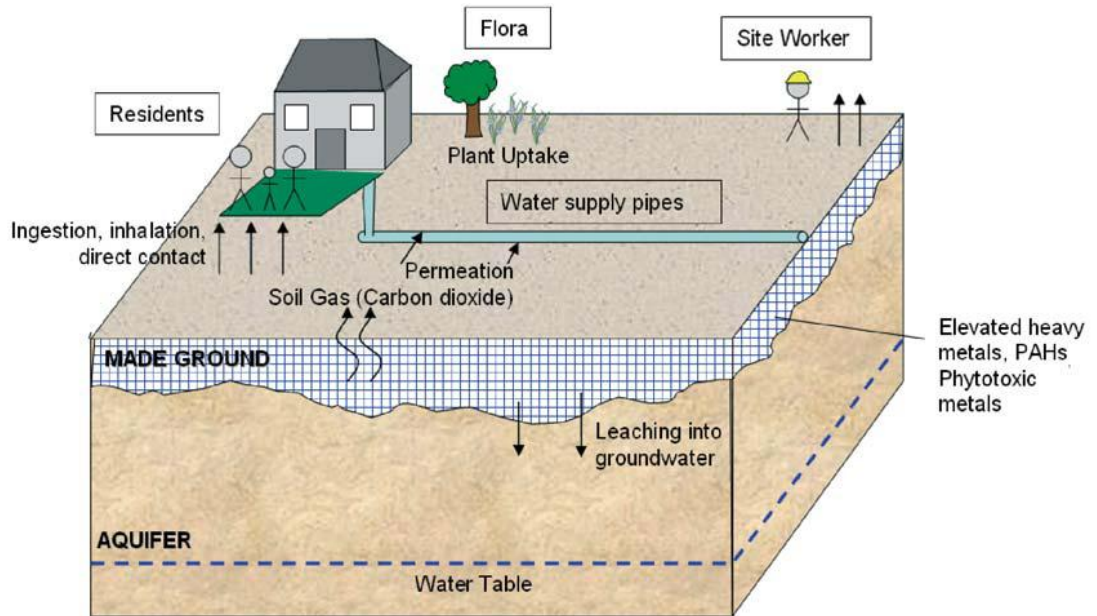
**Figure 5 Example of a pollutant linkage**

If any one of the three elements is missing a pollutant linkage can not be established and the land could not be defined as contaminated under part IIA as there would be no exposure and hence no risk.

The source of a particular substance will depend on the past uses of the site, the nature of the substance and the geology of the site. This can vary significantly depending on circumstances. Clearly there can be multiple sources and multiple contaminants on a given site.

The receptor is defined under part IIA and can include people, buildings, land, and controlled waters. The receptor will depend on the current use of the land under investigation or the adjacent sites. If groundwater impacted by the contamination is used for irrigation or drinking water the receptor could be a significant distance from the source of the contamination.

The pathway is the means by which the source of contamination may come into contact with the receptor. Figure 6 below illustrates a number of common pathways.



**Figure 6 Examples of common pathways**

More than one pollutant linkage may exist for any site and each contaminant may have multiple linkages to different receptors. Each and every linkage must be reviewed for the potential to cause harm.

## **3.0 Characteristics of the administrative area**

### **3.1 General**

Wiltshire is a diverse and largely rural council with a population of 448,700 (mid year pop' estimates 2006) and a land area of 325,533 Hectares. Wiltshire borders the countries of Hampshire, Dorset, Somerset, Gloucestershire, Oxfordshire, and Berkshire. The unitary authority of Swindon abuts Wiltshire to the North East.

Wiltshire is roughly rectangular in shape and extends to about 73 km from north to south and 53 km from east to west. The administrative headquarter of Wiltshire is situated in Trowbridge.

Population density varies significantly over the council area with areas such as Salisbury plain having very low occupancy.

There are many small settlements and town's across Wiltshire but the largest urban concentrations are in Salisbury, Trowbridge, Devizes, Chippenham, Malmesbury, Markham, Warminster and Westbury.

The administrative centre of Wiltshire is Trowbridge with other key towns being Salisbury to the South, Warminster, Westbury, Trowbridge, Melksham, Devizes, Bradford on Avon, Chippenham and Malmesbury to the North. The approximate address densities are given in figure 7.

The administration of the district is split into a number of area boards shown in figure 8.

There is a significant commercial and industrial presence in Wiltshire, predominantly focussed around the large towns. There are circa 180 permitted processes administered under the Environmental Permitting Regulations comprising of 14 A1 and 167 part B Processes.

The type and number of permitted processes can vary. Current details are available on the Wiltshire Council Website

[http://www.wiltshire.gov.uk/wiltshire\\_council\\_ppc\\_register\\_-\\_sept\\_09.pdf](http://www.wiltshire.gov.uk/wiltshire_council_ppc_register_-_sept_09.pdf)).



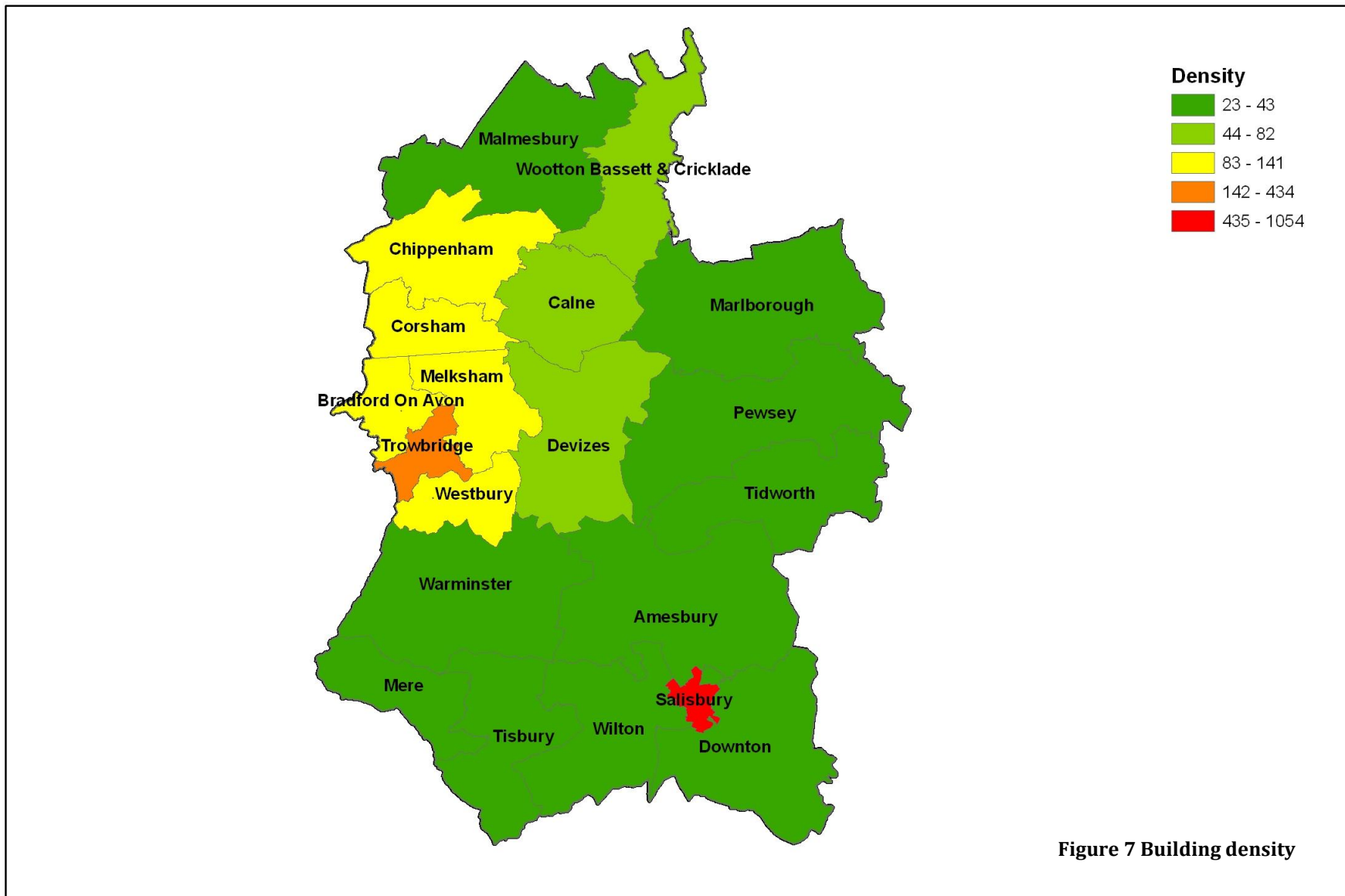
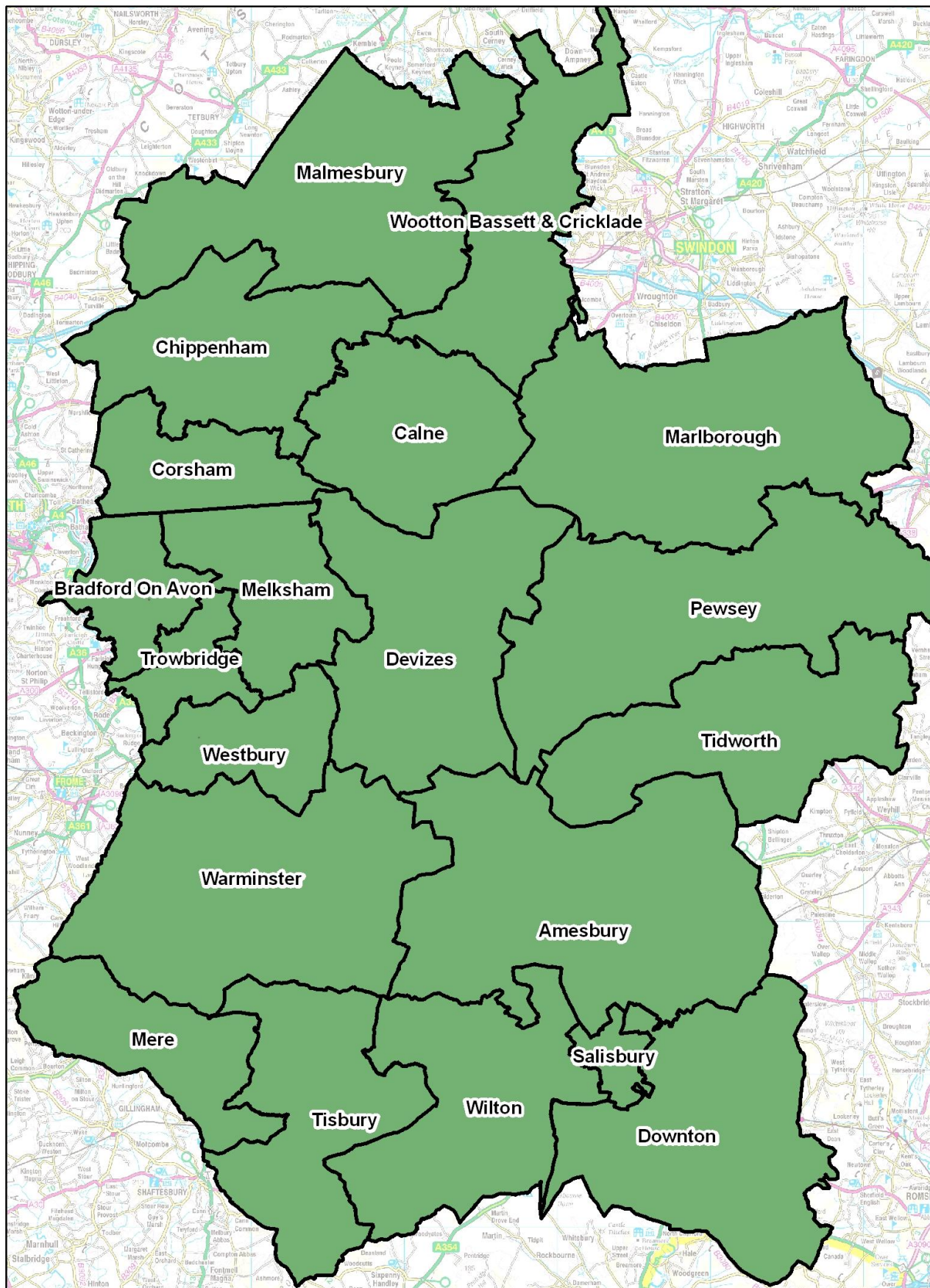


Figure 7 Building density



Reproduced from the Ordnance Survey mapping with permission of Her Majesty's Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. License number 100049050



Reproduced from the Ordnance Survey mapping with permission of Her Majesty's Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. License number 100049050

Figure 8 Map showing Area Board Locations

## **3.2 Industrial history**

Wiltshire Council is made up of four former authorities, these being North Wiltshire District Council, Kennet District Council, West Wiltshire District Council and Salisbury. These are incorporated as four hubs, North, South, East and West. A map showing the hubs location is included in Figure 9 and a summary of historical development is included for each hub.

### **North hub**

Historically, the market towns of Chippenham, Calne and Corsham were home to the flourishing woollen industry, however by the mid 19<sup>th</sup> century the industry was practically dead.

The advent of the Great Western Railway to Chippenham in 1841 could be said to be the most significant event in the development of the town, bringing extensive new industries, and new housing to accommodate the workers.

The major industry in Chippenham was the Westinghouse Brake and Signal Co, although this has now been replaced by light industry and commercial services.

Calne was a town in decline by the 1840's, with the cloth industry all but gone and diminishing market returns. Its fortunes were revived by the establishment of industrial-scale bacon curing in the town by the Harris family. This industry was to dominate the town's economy for over 150 years.

The town of Corsham and the surrounding locality has a long history of using the local limestone as a building material.

The stone industry boomed in the 19<sup>th</sup> Century through to mid 20<sup>th</sup> Century.

Dairy processing also prevailed in the area in the early to mid 19<sup>th</sup> Century.

### **Current industry**

North Wiltshire is home to a wide range of industrial operations ranging from large scale production, to miscellaneous light industries including the manufacture of; food, timber furniture, agricultural feeds, light engineering products, and provision of automotive services.

North Wiltshire retains a strong connection with defence establishments particularly RAF Lyneham.

## **East hub**

This area has relatively little industry. Small engineering workshops are distributed through the district to facilitate the agricultural infrastructure.

Historically, the market towns of Devizes and Marlborough were once home to Tanneries and Foundries, both associated with the regions agricultural heritage.

Breweries also used to abound in the towns with only the impressive Victorian home of Wadworths of Devizes, Bunces brewery in Netheravon and the Ramsbury brewery still in operation today.

## **West hub**

The early development of the west hub towns of Bradford on Avon, Trowbridge, Melksham and to a lesser extent Westbury was considerably influenced by the manufacture of woollen and worsted goods and the associated dyeing industries.

The woollen mills were note worthy as early users of steam powered machinery, in order to remain competitive with towns in other districts using water power to aid production. Associated with the woollen industry, the tanning of hides has also been practised at various locations throughout the west hub.

Upon the contraction of the woollen industry circa 1900 numerous of the former woollen mills were converted to other industrial uses, notably to service the emergent rubber industry, with rubber manufacturing centres growing up in Bradford on Avon and Melksham.

The town of Bradford an Avon and the surrounding locality has a long history of using the local lime stone as a building material, the stone being won from underground stone mines, some of which have been reused, notably during wartime for munitions stores and manufacturing facilities, and latterly for archive storage.

Westbury is noteworthy, as being partially situated on a strata of Jurassic iron stone and being actively involved in the production of pig iron and iron products in the period circa 1860s to 1930s. Locally won ironstone was used with coal brought from the Westbury Ironwork's collieries at Newbury and Vobster within the Somerset coal field.

Warminster has no particular industrial history existing chiefly as an agricultural market town. The town has had strong links to the British Army for a protracted period and the adjacent upland areas on the flanks of Salisbury Plain have a long history of being used for military encampments, training and firing grounds. The mechanisation of the army and weaponry has brought with it maintenance facilities for

weapons and vehicles, with the consequential associated land contamination issues.

All of the west hub area has been subject to the increasing intensity of resource usage in the period of since the Industrial Revolution with railway land, fuel storage (coal, oil and petrol), small landfill sites and scrap yards being located throughout the district.

The manufacture of town gas for lighting has been carried out at each of the five towns from the early 19<sup>th</sup> century for domestic consumption and for the woollen industry. The larger woollen mills have the potential to have had their own dedicated production plant for lighting purposes.

### **Current industry**

The west hub is home to a wide range of industrial operations ranging from large scale cement manufacture, the large scale production of rubber goods (notably tyres), to miscellaneous light industries including the manufacture of; food, timber furniture, agricultural feeds, light engineering products, and provision of automotive services. The range of premises employed encompasses structures from purpose built industrial units to converted military bases and former woollen mills.

There remains a strong connection with the British Army and is home to numerous barracks, military vehicle maintenance facilities and firing ranges.

### **South hub**

Historically, Salisbury District's two main industries have been farming and textiles.

In the 17<sup>th</sup> and 18<sup>th</sup> Centuries the Salisbury area had a flourishing textile industry, but by the 19<sup>th</sup> Century little was left of it despite a general growth in Wiltshire and a move to steam power. Most of the factories were by that time based in the North and West of the County, mainly in Trowbridge, Westbury, Bradford on Avon and Calne.

Most of the railway and motor car related industry that developed in modern times missed Salisbury, although the small manufacturing company Scout of Salisbury made cars early in the 20<sup>th</sup> Century, and then motor coaches.

A tannery existed in the village of Downton for about 400 years.

In the late 19<sup>th</sup> and early to mid 20<sup>th</sup> Centuries a major area of growth was in the activities of the armed forces to the North of the District, including the Porton Down facility, which historically researched chemical and biological weapons, RAF Chilmark and Boscombe Down airfield.



0 5,600 11,200 16,800 22,400  
Meters

Reproduced from the Ordnance Survey mapping with permission of Her Majesty's Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. License number 100049050

**Figure 9 Four hubs in Wiltshire**

### 3.3 MoD activities

Wiltshire is home to a wide range of military bases and associated research establishments which make a valuable contribution to the local economy. The presence of the MOD is concentrated around Salisbury Plain. The Salisbury Plain training area extends over 38,000 hectares, about a 1/9th of Wiltshire. Much of the land is designated as a Site of Special Scientific Interest (SSSI) and is let to farmers or grazed under licence. The strong military presence also creates opportunities for local businesses, many of whom benefit from contracts awarded to fulfil the need for services and products of personnel and estates. There are almost thirty different establishments in the area that provides a home base for some 10,000 soldiers increasing to 12,500 by 2012.

The military infrastructure in Wiltshire includes:

- RAF Lyneham - Currently the RAF's centre of excellence for tactical transport, RAF Lyneham has been the subject of a strategic review and will become surplus to requirements post 2012. However, the government has recently announced that Lyneham will not now become the main operating base for the medium and heavy lift helicopter fleets.
- Tidworth - A new super-garrison is proposed at Tidworth, which will bring a large number of new troops to the area. This will increase the amount of disposable income in the area and the multiplier effect of this will benefit the county and local businesses. A super garrison will also mean building contracts, and various other contract opportunities for local businesses;
- Azimghur Barrack, Colerne - The home of the 21 Signal Regiment, its role is to provide communications for the RAF Support Helicopter Force;
- Basil Hill Barracks development, Corsham - The headquarters for communication and information services for sites across the world, MoD Corsham is currently spread over 4 sites- Basil Hill, Copenacre, Hawthorn and Rudloe;
- Kemble Airfield - Located in the very north of the District, this former military site is now used as a private airfield;
- Hullavington Airfield - Home to Royal Logistics Corps (Army), this airfield also has a private flying training school onsite, while some of the hangars are allocated for business use;
- Army Training Estate - Salisbury Plain - A unique location that provides training for some aspects of military operations, particularly armoured vehicles, which are not available elsewhere in the UK. ATE SP is the

UK's largest training area and incorporates Larkhill and Westdown artillery impact areas, and Warminster live firing area, of particular training benefit for armoured vehicles, artillery, engineers, infantry and aircraft. The newest facility is the 'village' on Copehill Down used to train for operations in built-up areas;

- Military garrisons at Bulford and Warminster; and
- HQ Land Command based at Erskine Barracks in Wilton, and HQ Adjutant General, based at Upavon on the Salisbury Plain merged on 1st April 2008 to form the new HQ Land Forces. This combined HQ will be relocating to Andover in around 2010, with a reduction of around 240 civilian and 100 military posts. The Wilton site is expected to be released after the withdrawal of the personnel.

Potential options for the re-use of the site are being discussed, with the creation of a mixed use site with around 3-4ha of employment land and about 600 houses emerging as a likely option. The Upavon site is being retained as part of the military estate and will be used as a station in the Salisbury Plain Super Garrison

### **3.4 Geology.**

Wiltshire Council encompasses a large geographic area and consequently has a varied geology, and hydro geology. For simplicity the area will be considered using the four hubs.

#### **North hub**

The character and appearance of much of the landscape in the north hub are dominated by sedimentary rocks of the Jurassic period. Upper Jurassic clays and limestone from the Great Oolite series underlie the bulk of the region. The main exception to this is at the East side of the District where Jurassic Clays give way to Upper Cretaceous Gault, Upper Greensand and Chalk.

#### **East hub**

The character and appearance of much of the landscape in the former Kennet area is dominated by sedimentary rocks of the Cretaceous period. Chalk and Greensand rocks of this period underlie much of the district and are aligned as broad blocks or bands extending east west with the Vale of Pewsey dividing the two.

The main exception to this is at the western end of the District where the Upper and Lower Greensand give way to Jurassic clays and grits to create a distinct clay lowland landscape.



## **West hub**

Sedimentary units of the Jurassic, Cretaceous and Tertiary ages comprise the solid geological strata outcropping in the West Wiltshire area. These units dip gently towards the east and south. In the north of the district, a broad vale comprised of the steep escarpment of Cretaceous chalk in the east, with the Salisbury Plain uplands beyond. A low lying central vale of Jurassic Oxford clays and Cretaceous Greensands with Jurassic Oolitic limestone hills forming the North West.

In the south of the district the Cretaceous Chalk and Greensand units predominate in a series of rolling chalk uplands.

## **South hub**

In simplified terms, the District is mainly Upper Chalk, with Jurassic and Lower Cretaceous deposits to the West of Salisbury and Tertiary deposits to the East and South.

The Northern part of the District is dominated by Upper Chalk, with the river valleys of the Ebbles, Woodfords, Wylde, Bourne and Nadder having narrow bands of Alluvium within areas of Valley Gravel, and occasionally some Middle Chalk. The Nadder valley broadens out to the West to include the Jurassic areas of Upper Portland (limestone), Middle Purbeck (marl and limestone) and Lower Purbeck (marl and oolite) and Cretaceous Lower Chalk.

The Ebbles valley broadens out similarly to the West to include areas of Middle and Lower Chalk on its Southern edge.

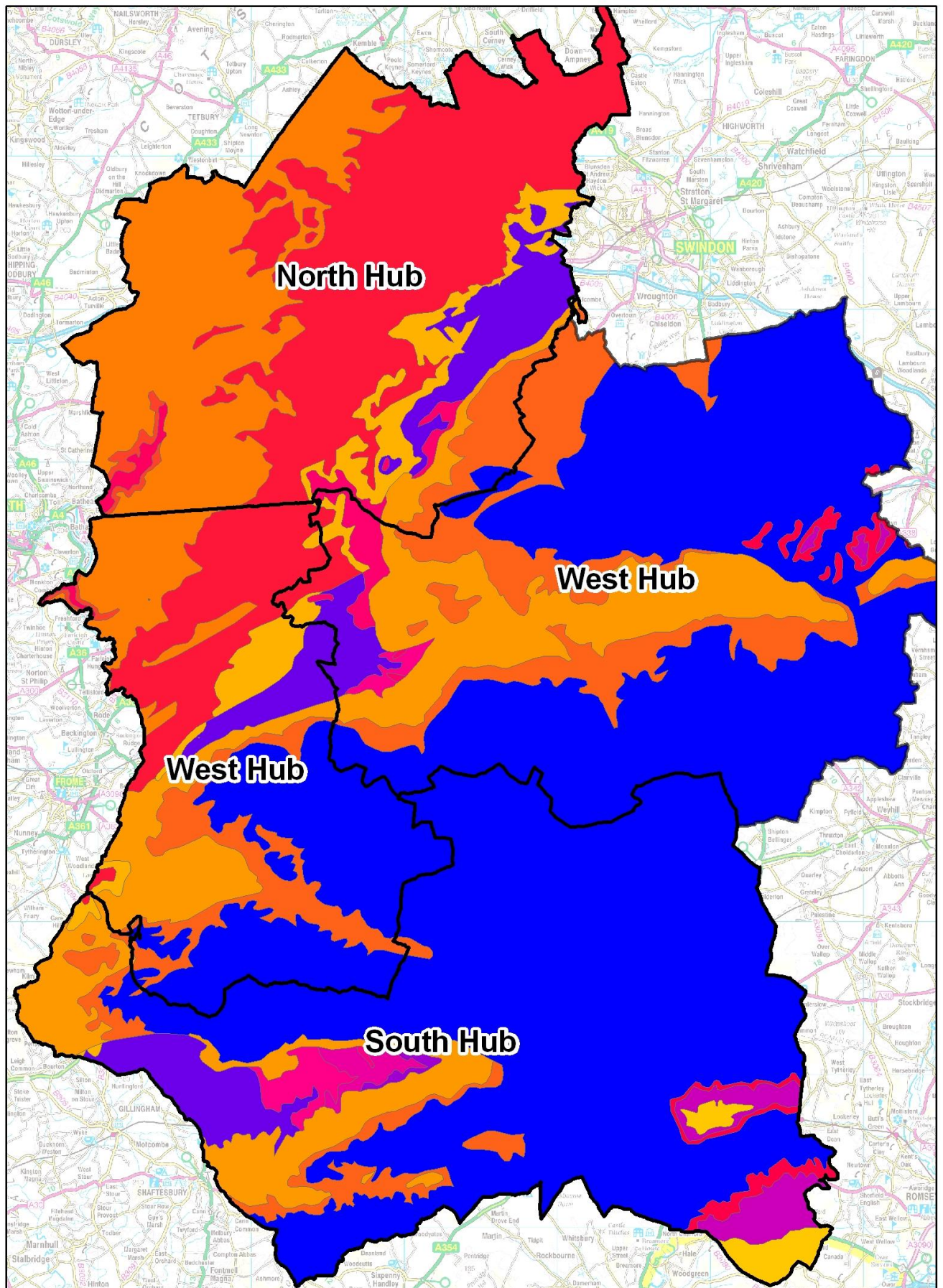
The river valleys converge on Salisbury, the Avon valley continuing south. The City itself sits largely on Alluvium, Brickearth or Valley Gravel but parts are on Upper Chalk.

Between the Wylde and Nadder valleys is a ridge of high ground (the Great Ridge) which presents itself as an outcrop of Clay with Flints.

There is an area to the South East of Salisbury showing plateau gravels surrounded by Bagshot Beds, then London Clay. This area is ringed by a narrow band of Reading Beds.

To the South of Salisbury, there is still a great deal of Upper Chalk, but this gives way to London Clay and Bagshot Sands. To the North East, the Whiteparish Landfill site on the A36 is on Upper Chalk, but Tertiary sands and clays appear about a kilometre to the South, with Whiteparish itself being on Tertiary deposits.

















Summary maps of the bedrock and sedimentary geology of Wiltshire are included below as figures 10 and 11 respectively.



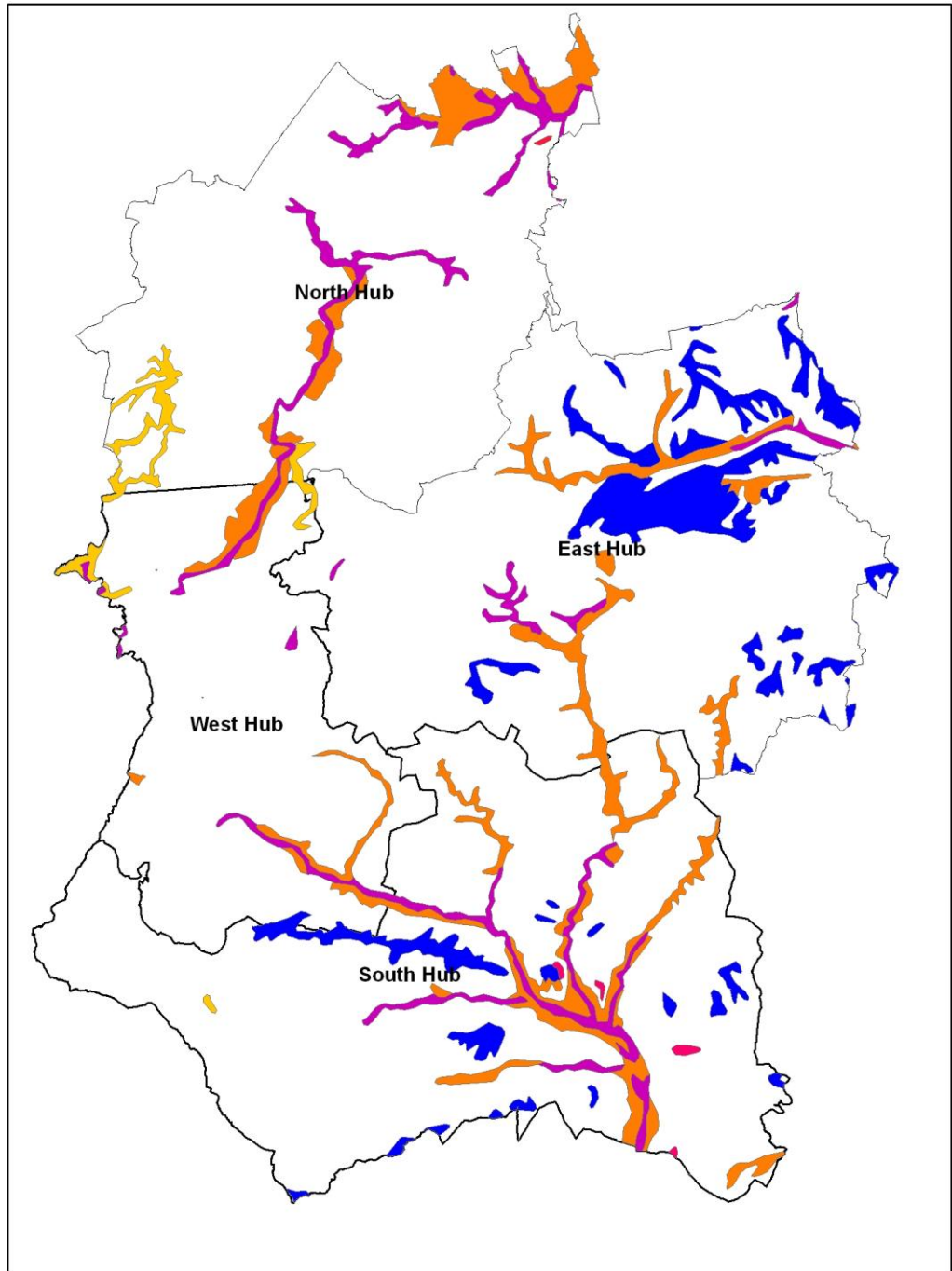
Reproduced from the Ordnance Survey mapping with permission of Her Majesty's Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. License number 100049050

Figure 10 Bedrock geology 1:625,000 source BGS

## Key to Bedrock Geology

	BRACKLESHAM GROUP AND BARTON GROUP (UNDIFFERENTIATED)
	CORALLIAN GROUP
	GAULT FORMATION AND UPPER GREENSAND FORMATION (UNDIFFERENTIATED)
	GREAT OOLITE GROUP
	GREY CHALK SUBGROUP
	INFERIOR OOLITE GROUP
	KELLAWAYS FORMATION AND OXFORD CLAY FORMATION (UNDIFFERENTIATED)
	LAMBETH GROUP
	LIAS GROUP
	LOWER GREENSAND GROUP
	PORTLAND GROUP
	PURBECK LIMESTONE GROUP
	THAMES GROUP
	WEALDEN GROUP
	WEST WALTON FORMATION, AMPHILL CLAY FORMATION AND KIMMERIDGE CLAY FORMATION (UNDIFFERENTIATED)
	WHITE CHALK SUBGROUP

**Key to bedrock geology**



0 4,250 8,500 12,750 17,000  
Meters

Reproduced from the Ordnance Survey mapping with permission of Her Majesty's Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. License number 100049050

**Figure 11 Superficial deposits 1:625,000 source BGS**

- ALLUVIUM
- CLAY-WITH-FLINTS
- LANDSLIP
- RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)
- SAND AND GRAVEL OF UNCERTAIN AGE AND ORIGIN
- TILL

### **3.5 Hydro geology.**

Geological strata which contain groundwater in exploitable quantities are termed aquifers. All ground waters are controlled waters, but it is convenient to subdivide permeable strata into two types; highly permeable (major aquifers) and variably permeable (minor aquifers). Non-aquifers have negligible permeability.

A large part of Wiltshire is a major aquifer of high vulnerability, with soil classes generally of high or intermediate leaching potential. Significant amounts of water are extracted for domestic, industrial and military use, particularly in the southern half of the county, meaning that ground contamination can have a significant impact on water quality.

The Environment Agency has recently released a document entitled GP3 - Groundwater Protection Policy and Practice. This document contains details of new definitions of what were previously referred to as major and minor aquifers. Major aquifers are now called Primary aquifers and minor aquifers and now called Secondary aquifers. Non aquifers and now called Unproductive strata. Further information is available via the following link: <http://www.environment-agency.gov.uk/homeandleisure/117020.aspx>

#### **North hub**

The hydrological characteristics of the area are mainly comprised of a combination of minor aquifers and non-aquifers.

Major aquifers are present to the Eastern and Western extremes of the District, associated with Upper cretaceous deposits and Great Oolite limestone respectively.

As well as having several public water supply abstraction points in the hub there are also 46 private water supplies which are tested when required.

#### **East hub**

Several watercourses cross the Area, defining two water catchment areas. The River Kennet dissects the chalkland landscape in the north part of the District, running eastward through Marlborough, with the tributary river Og flowing down through the chalk from the north.

Salisbury Plain is dissected on a north-south axis by the rivers Avon and Bourne, which flow southward from the Vale of Pewsey through the chalk block of the plain.

From sampling carried out by the Environment Agency, the river quality of the Bourne and the Avon is predominantly categorised as 'very

good' and the quality of the Kennet and the Og as 'good'. Maintaining these high standards of river quality through protection from contamination is a major objective of the inspection strategy.

The Environment Agency Groundwater Vulnerability maps for the Kennet district (numbers 37, 38, 43 and 44) classify almost the entire district as a major aquifer of high vulnerability. The exceptions are the Jurassic clay areas to the west of the district, which are non-aquifers. There are approximately 260 private water supplies located within the hub area. Reference will be made to the location of these when assessing the potential influence of land contamination.

### **West hub**

The hydrological characteristics of the west hub are comprised of a combination of major aquifers and non-aquifers with superimposed minor aquifers present in the drift strata.

Major aquifers of regional importance are present in the form of Cretaceous Chalk and Greensand units present in the east and south of the district, and within the Jurassic Oolitic lime stone present in the north and western areas. The central vale is formed of Oxford and Forest Marble clays, which are considered to be predominantly aquitards.

Minor aquifers are present in the tertiary drift strata associated with the surface water courses and within outcrops of Jurassic Corralian limestone strata outcropping in the northern and western areas of the district.

### **South hub**

The Environment Agency's groundwater vulnerability map no. 44 classifies almost the entire district as a major aquifer of high vulnerability, with soil classes generally of high or intermediate leaching potential.

Salisbury itself sits on a highly permeable major aquifer, soil leaching class high.

An area of non aquifer extends eastwards from Alderbury in a band 2-3 km wide, and another stretches west of Dinton. There is a similar band east of Redlynch, with a narrow band of minor aquifer to the north and a much larger area of minor aquifer to the south, stretching to the coast.

There are nineteen water abstraction sources within the south hub area with designated source protection zones.

Figures 12 and 13 show an extract from the Environment Agency data showing aquifer classification and river catchment areas.

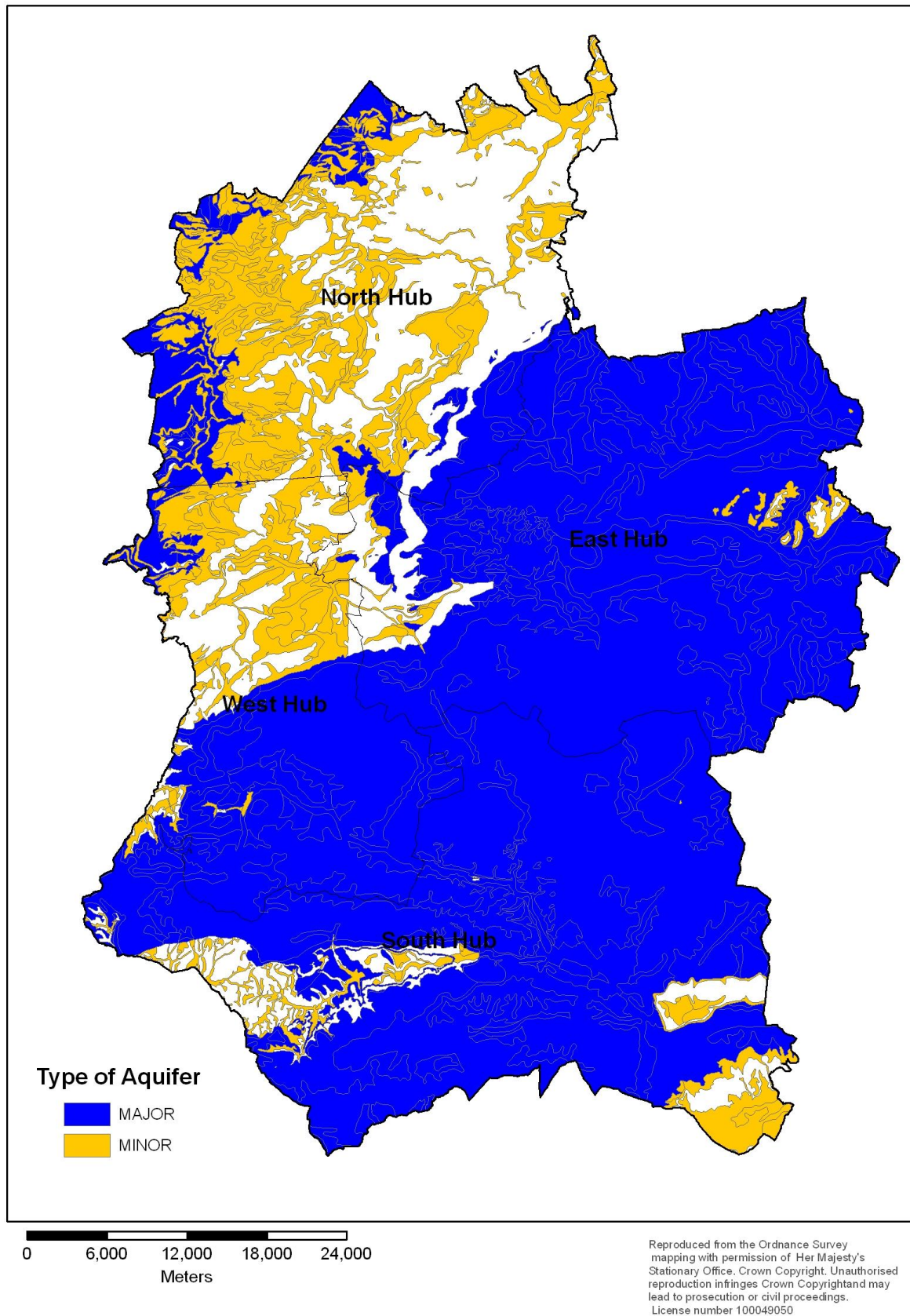
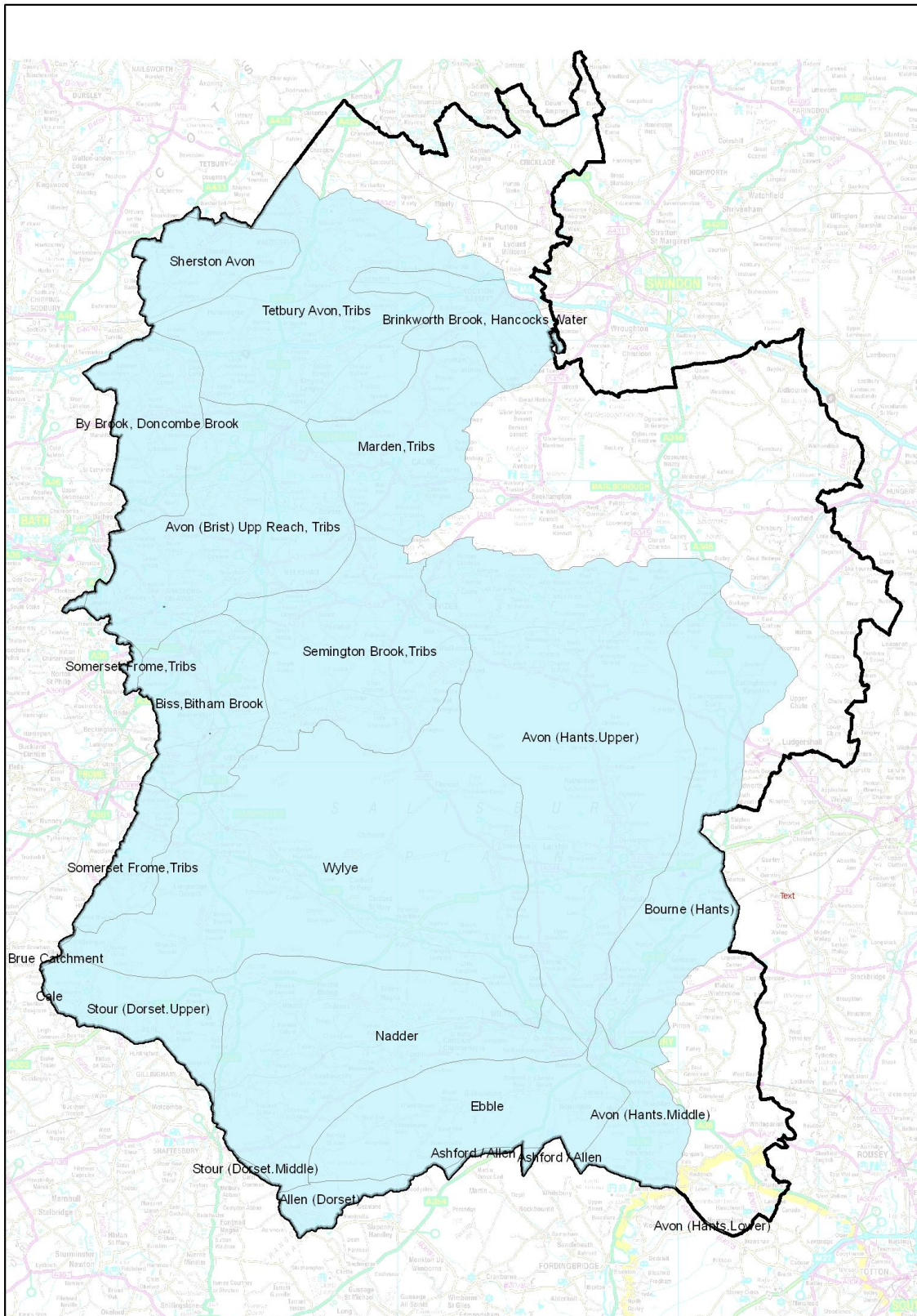


Figure 12 Aquifer protection zone

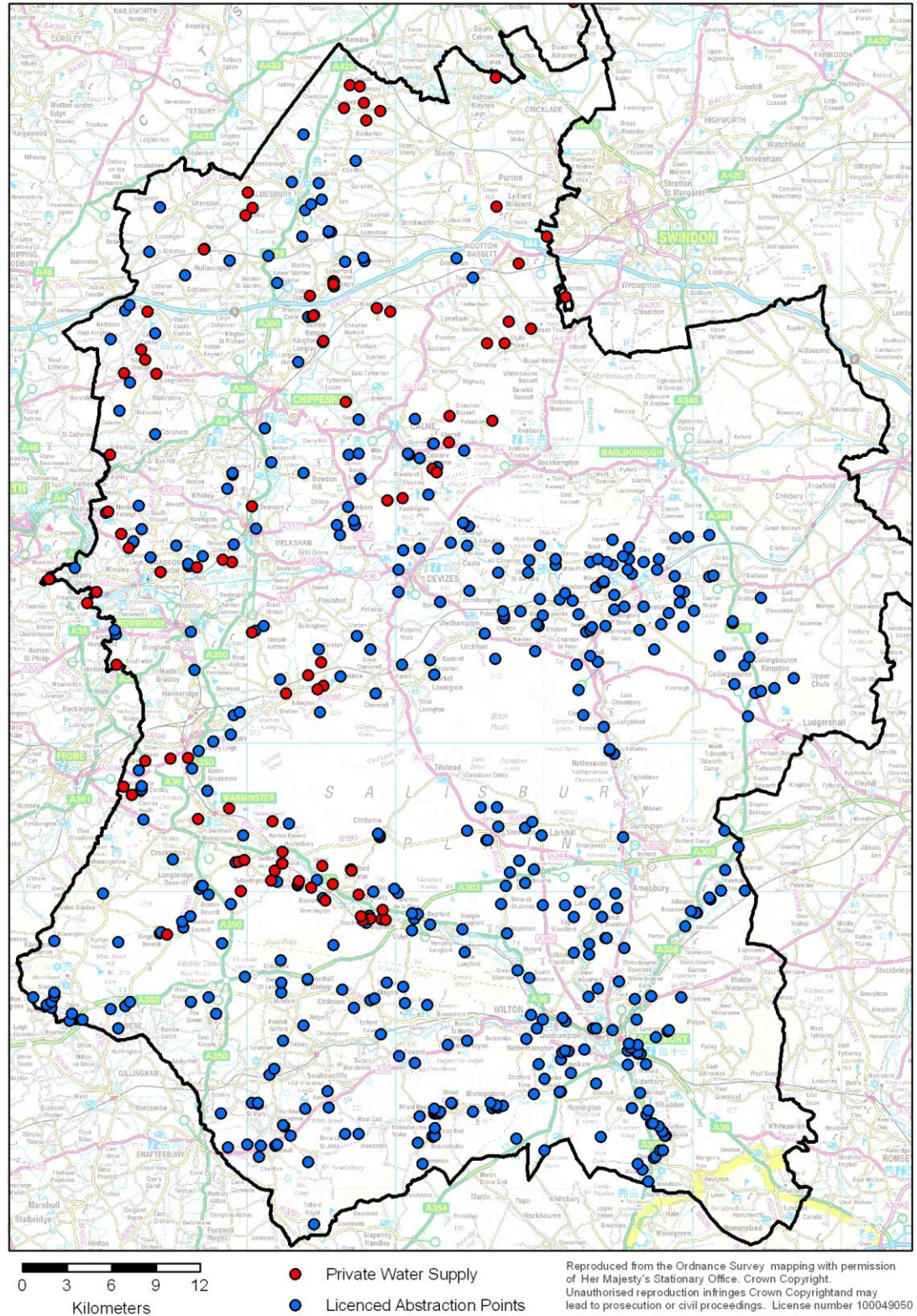


Reproduced from the Ordnance Survey mapping with permission of Her Stationary Office. Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil Proceedings. License number 100049050

**Figure 13 Map showing river catchments**



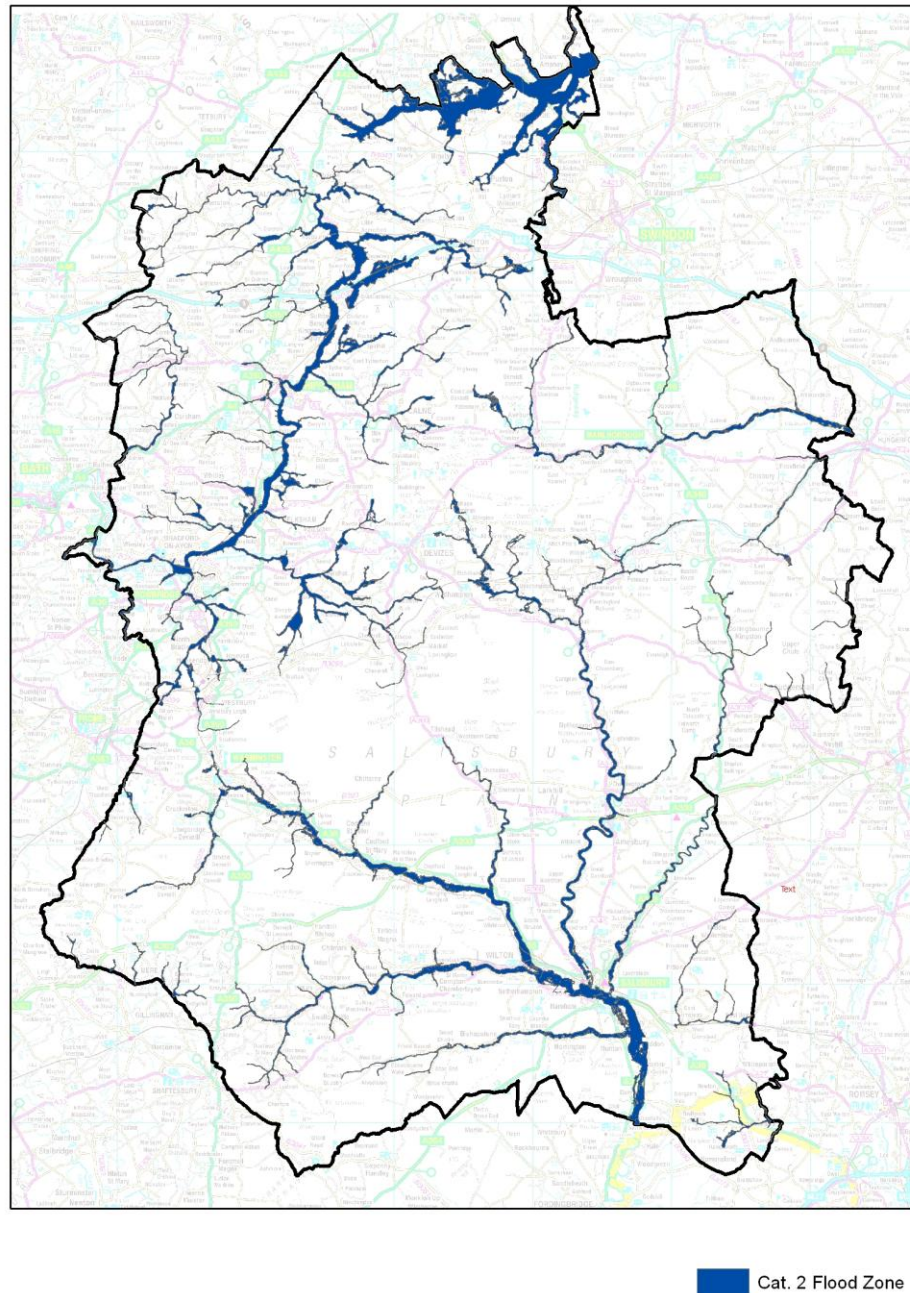
The nature of the geology across Wiltshire makes it suitable for large scale water extraction. There are several hundred water abstraction sources and private water supplies across Wiltshire. The approximate distribution of these water sources is shown in figure 14. The exact number of sources and supplies are currently under review.



**Figure 14 Water abstraction in Wiltshire**

### 3.6 Flooding

Certain Localities in Wiltshire are at risk from flooding. Development has encroached onto the historic flood plain meaning that there are approx 7500 residential and commercial premises at risk from flooding. A number of transport routes are also affected. Figure 15 below shows the areas of Wiltshire included in the predictive flood maps provided by the Environment Agency.



Reproduced from the Ordnance Survey mapping with permission of Her Stationary Office.  
Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil Proceedings. License number 100049050

**Figure 15 Maps of Wiltshire showing areas in flood zone 2**

### **3.7 Biodiversity, geodiversity, land use and historic environment.**

Wiltshire contains a wealth of archaeological and architectural treasures, including the combined World Heritage sites of Stonehenge and Avebury, Salisbury Cathedral, and more recent industrial features such as the Box railway tunnel, and the Kennet and Avon Canal. The County contains nearly 20,000 archaeological sites ranging from the prehistoric through to roman to medieval times.

Wiltshire also has one of England's 43 battlefields, the civil war battlefield at Roundway Down. There are also approximately 14,000 listed buildings, 37 historic parks and gardens, and more than 250 conservation areas.

The County's landscape is one of national importance. Three Areas of Outstanding Natural Beauty (AONB's) cover 43% of the County and the south tip of the County is included as part of the recently designated New Forest National Park.

Wiltshire is an important area for biodiversity and contains either in full or part, 10 Special Areas of Conservation and 2 Special Protection Areas, these being of European significance. There are 136 Sites of Special Scientific Interest, and 7 National Nature Reserves. (WiSB, 2007). See Figure 16 for an illustration of Environmentally Sensitive Areas.

### **3.8 Land in local authority ownership.**

Wiltshire Council owns an extensive portfolio, distributed across the county area. Property types include, not exclusively:

- shops
- commercial/industrial sites and premises
- car parks
- parks and recreation grounds
- miscellaneous spaces (predominantly play areas).
- council houses (south hub only)
- educational establishments

A comprehensive list of land in which the council has an interest has not yet been considered and the land has not been comprehensively assessed. As a consequence the full extent of possible environmental liabilities are currently unknown.

### 3.9 Ancient Monuments, listed Buildings and conservation areas

Wiltshire has a rich and varied archaeological heritage including sites and monuments from many different periods. There are approximately 12,000 Listed Buildings, over 1000 Scheduled Monuments, The Stonehenge and Avebury World Heritage Site, 41 historic parks and gardens and one historic battlefield. Figure 17 illustrates the distribution of these sites around Wiltshire.

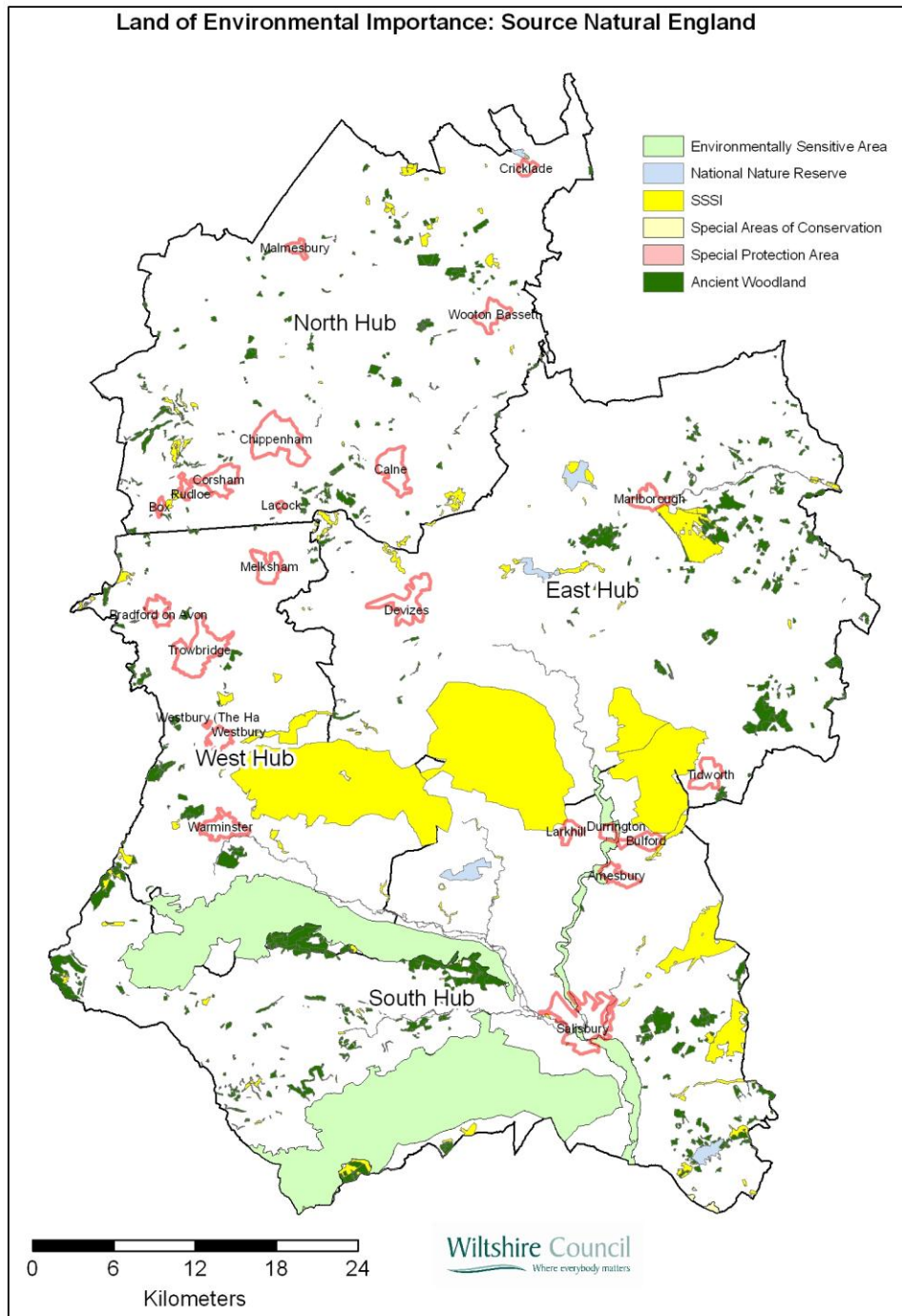


Figure 16 Sensitive environmental areas

# Land of Historic Importance: Source English Heritage

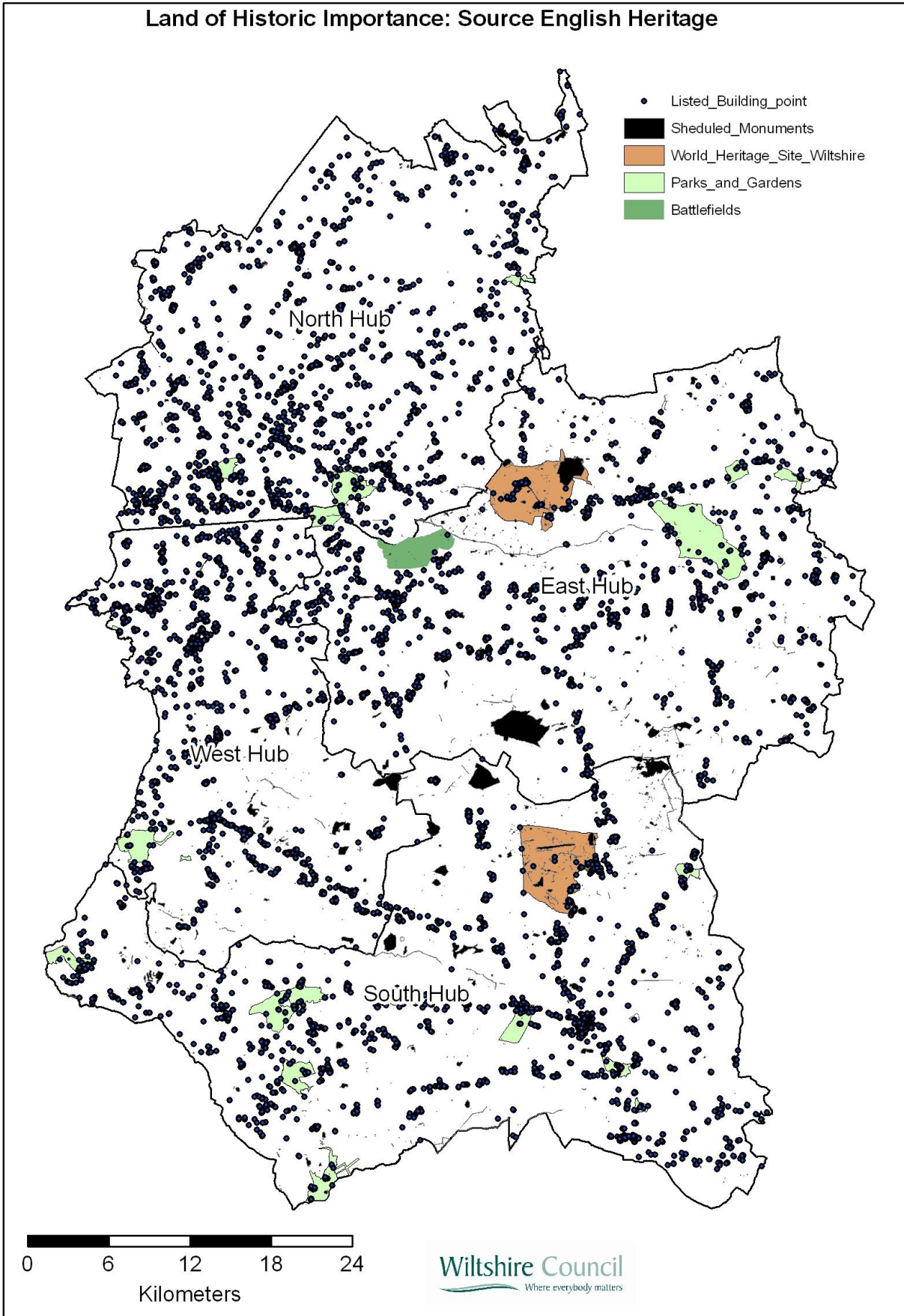


Figure 17 Sites of historic importance

## **4.0 Development of the inspection strategy.**

### **4.1 Progress to date.**

In 2007 the government announced that Wiltshire would become a unitary authority from April 2009. This brought together the existing County Council and the four District Councils of Salisbury, Kennet, North Wiltshire and West Wiltshire to form a new Authority for the whole of Wiltshire.

The four district councils have already made significant progress in identifying sites where they may be possible contamination by gathering and evaluating historical data. This data has been used to identify sites where there may have been land contamination and where this is likely to be of concern.

At present a total of 7 sites of potential concern have been identified following the review of course data and will require further investigation in order to determine if they meet the statutory definition of contaminated land.

Information has been gathered and stored on corporate GIS systems and additional mapping and historical data has been purchased prior to the formation of the Unitary Authority to ensure that the information held across the new authority will be as full and consistent as possible.

### **4.2 Identified sites and sites subject to validated remediation**

The authorities amalgamated to form Wiltshire Council each held databases of land where contamination was known, strongly suspected or in some cases remediated. Some remediation has taken place due to the land owners actions but the majority of remediation was as a result of developments controlled by the planning process.

The existing databases of known and remediated land are incomplete and have not yet been brought together in one data set. This is particularly true of land remediated in compliance with planning conditions over the last decade.

The vast majority of brownfield sites developed since 1998 will not require inspection pursuant to part IIA but it is necessary to compile a list of such sites and confirm that the associated contaminated land conditions were fully complied with at the time of development.

### 4.3 Declared contaminated land in Wiltshire

At present 2 sites have been declared under the provisions of Part IIA and confirmed as special sites.

### 4.4 Objective of the contaminated land strategy

Circular 01/2006 identifies that contaminated land presents a challenge to policy aims of redeveloping Brownfield sites in the UK as a whole. The contaminated land regime is in line with housing and planning policy and the primary reasons for intervention are:

- i) To identify and remove unacceptable risks to human health and the environment.
- ii) To seek to bring contaminated land and brownfield land back into use.
- iii) To ensure that, the cost burdens faced by individuals, companies and society as a whole are proportionate to the actual risks, manageable and sustainable.

The councils objective in remediating contaminated land has already been given in figure 1 and this approach will ensure that the local authority focuses resources on those sites most likely to present a significant risk to human health or the environment.

### 4.5 Key priorities for the contaminated land strategy

Wiltshire Council has three key priorities in tackling contaminated land. These are given in figure 12 below:

- |   |
|---|
| <ul style="list-style-type: none"><li>i) To ensure that the council fulfils its statutory duties to identify potentially contaminated land in Wiltshire</li><li>ii) To secure the remediation of sites, including land owned where an unacceptable risk is being caused to human health or the environment</li><li>iii) To secure the remediation of contaminated land through means other than part IIA eg through the planning process or as part of voluntary remediation.</li></ul> |
|---|

**Figure 18 Key priorities for the contaminated land strategy.**

In order to meet the key priorities a work plan will be devised. In addition it will necessary to produce guidance for land owners and developers who may be affected by contaminated land.

## 4.6 Consultation and liaison

All information on contaminated land and other issues relating to potentially contaminated land will be held within the Wiltshire Council Environmental Protection Specialist Team. All existing information held on databases, paper systems and GIS systems will be correlated and transferred to a single server at the earliest opportunity.

The council will undertake to liaise and establish formal links with all statutory consultees named in government guidance. Appropriate liaison and communication systems will be set up within the Local Authority to ensure that relevant information is shared and that effective communication takes place.

The list of those consulted will include, not exclusively:

External
The Environment Agency English Nature Food Standards Agency English Heritage Health Protection Agency Natural England
Internal
Area Boards Elected Members Planning Strategy and Policy Minerals and Waste Planning Development Control Building Control Legal Services Estates

**Figure 19** List of consultees

The council will undertake to be as transparent as possible and make information available via the council's web pages including the Register of Contaminated Land, guidance for developers, guidance for householders and links to any appropriate websites and sources of information.



## 5.0 Wiltshire Council inspection strategy

### 5.1 Statutory obligations

Local Authorities are required to adopt a strategic approach to the inspection of their area for the identification of land which may be contaminated to an extent that merits individual inspection. Section 78B(1) of the Environmental Protection Act 1990 requires that the council should:

- i) be rational, ordered and efficient;
- ii) be proportionate to the seriousness of any actual or potential risk;
- iii) seek to ensure that the most pressing and serious problems are located first;
- iv) ensure that resources are concentrated on investigation in areas where the authority is most likely to identify contaminated land; and
- v) ensure that the local authority efficiently identifies requirements for the detailed inspection of particular areas of land.

**Figure 20 Statutory obligations.**

### 5.2 Roles and responsibilities

A work plan will be developed and managed by the Environmental Protection Specialist Team. Their responsibilities will include collation of all information relating to potential land contamination, administering and updating a database of all sites of potential concern and where necessary to commission and monitor a more detailed specific site investigation.

The specialist team will also be responsible for answering any enquiries received regarding contaminated land. The team shall respond to such enquiries within five working days of the receipt of the request. Where it is appropriate for a charge to be made for any such response this will be levied in line with the councils agreed scale of fees and charges.

Data from enquiries made will be incorporated into the contaminated land database for future reference.

The specialist team will lead on the enforcement of any issues relating to part IIA of the Environmental Protection Act 1990, subject to obtaining appropriate legal advice.

### 5.3 Amalgamation of contaminated land data

The former councils held their contaminated land information in a variety of forms and locations. It is necessary to amalgamate the existing information into a single dataset and to standardise systems and paperwork to guarantee a consistent delivery of the contaminated land strategy across Wiltshire. The existing data sets are listed in figure 21 below:

Information	Source	Progress
Historic Map information	Ordnance Survey Maps & commercial databases (e.g. Landmark)	All available historic maps have now been purchased
Contaminated Land Databases	Landmark point, line and polygon data has now been purchased. Individual datasets created by the individual authorities are also available	Landmark data to be made available at all four office locations. Other datasets need to be analysed and combined into a single data source.
Landfill Sites (Historic)	Environmental Health Records, Waste Management Records, Historic Maps, Environment Agency	Existing databases need checking and updating, layer to be included in GIS system
Landfill Sites Current	Minerals and Waste Planning Records, Environment Agency	Existing databases need checking and updating, layer to be included in GIS system
Known Pollution Incidents	Environmental Health Records, Environment Agency	Current data unchecked. Need to obtain current data from the Environment Agency to ensure all records are accurate.
Industrial Processes	Environment Agency (A1), Local Authority records A(2) and part B records	Already plotted for part of Wiltshire, remaining data to be brought within GIS system
Petrol Stations	Current data held as prescribed process. Historic data held by petroleum officer in paper form	Need to input all petroleum officer records into GIS layer and accompanying data tables.
Site Investigation Reports	Currently held in paper form.	Existing site investigation and remediation data needs to be entered onto system as GIS Layer.
Discharged Planning Conditions.	Where contaminated land conditions were included and discharged thro the planning system	Currently not available on GIS and not easily accessible through IT systems. Project needed to identify and extract data.
Land use information	Council Tax and Business Rates information	Layer not currently available.
Radioactive Sources	Information provided by Environment Agency, Public Register held by Environmental Health	Data needs checking and GIS layer updating.
Environment Agency Information	Published by Environment Agency	Need to check for updated information

**Figure 21 Data on potential sources of contamination.**

## 5.4 Information on potential receptors.

Information relating to potential receptors is held across the council. Figure 22 contains a summary of the information:

Information	Source	Progress
Human Receptors	Council records of residency and business and land use	The location of sensitive receptors such as allotments, schools, recreational land can be obtained from existing council records. Property specific information on residential use should be available from council tax and revenues information
Ecological systems and protected locations	Natural England	Location of SSSI's are recorded on the GIS system. Current information needs checking to make sure it is up to date
Monuments and Listed Buildings	Council Records and English Heritage Data	Information is already held on the GIS system. Needs to be checked to ensure it is up to date.
Agricultural use, livestock etc	Ariel Photos, Animal Health Team	Dataset needs to be collated
Controlled Waters	Environment Agency, OS Maps	Current dataset needs checking and updating
Ground Water Extraction	Environment Agency	Current Data needs updating to identify all licenced extraction points
Private Water Supplies	Food Teams in Environmental Health	Data partially held in GIS form. Data set needs updating to include all extraction and distribution systems
Source Protection zones	Environment Agency	Current Data needs updating.

Figure 22 Table showing potential receptors data sources

## 5.5 Inspection priorities

The inspection of the district is required to target the most pressing problems. This strategy has been structured to prioritise the order in which receptors are considered and a weighting placed on the significance of any harm caused, as required by the Act.

Figure 23 outlines the proposed priority for the inspection of environmental receptors.

Priority	Description
I.	Human Receptors, areas where the most vulnerable receptor groups are present and where long exposure times to ground contaminants are possible. E.g. areas such as schools, hospitals, residential homes, domestic dwellings, sites where children the elderly or infirm are present and where near constant exposure to ground contamination may be present.
II.	Human Receptors where the main exposed group are predominantly composed of the adult population and/or where exposure times are limited. e.g. business premises, commercial premises, public open spaces and recreational grounds/premises.
III.	Potable water abstractions and the associated source protection zones.
IV.	Controlled bodies of water not included above.
V.	Livestock
VI.	Designated Ecosystems.
VII.	Buildings and the Historic Environment.

**Figure 23 Priority for inspection**

The information on sources and receptors will be stored in a database to allow a prioritisation formula to be applied. The possible impacts to human health, water, and the environment and historic sites will be evaluated and given a numerical score. This score will be used to assign a priority to the sites.

This computer generated list will then be inspected and moderated by officers to identify any anomalies or any sites where remediation has already taken place and this moderated list will be used to prioritise sites for consideration and investigation.

The evaluation and prioritisation process will take a number of months to complete and rather than delay the progress on sites which are already known to warrant investigation, several will be brought forward to allow immediate investigation to begin.

Once the initial prioritisation has been completed additional data will inevitably come to light and will be incorporated into the stored database. This is likely to include more comprehensive information on sites which have been investigated or remediated under the planning regime.

On an annual basis the prioritisation process will be repeated, incorporating the new information, to establish if any new sites require urgent attention or if other sites have now been remediated and can be removed from the list.

## **5.6 Integration with the planning process.**

The majority of contaminated land will be remediated as a result of planning conditions attached as part of the approval process. Information will be made available to the planning department in a form they will find most useful to ensure that suitable conditions are attached to any permission given.

In addition guidance will be produced to assist developers in fulfilling their obligations when redeveloping a brownfield site. This guidance will be made available on the council website.

## **6.0 Procedures**

### **6.1 Internal management arrangements**

The lead role in the implementation of the contaminated land regime is to be taken by the environmental health practitioners (EHP's) in the Wiltshire Council Specialist Environmental Protection Team.

The specialist team will deal with contaminated land issues identified through the Planning consultation process and the day to day implementation of the Contaminated Land Regulations.

The specialist team will be responsible for maintaining the Contaminated Land Register and serving remediation notices. The authorised signatories for remediation notices will be the EHPs and team manager. All enforcement will comply with the regulatory policies adopted by the council at that time.

Where council owned land is identified as being contaminated land, or where land contamination liabilities associated with property in the ownership of others rests with the council (orphan pollutant linkages), cabinet will be informed at the earliest opportunity.

### **6.2 Local Authority interests in land**

As previously stated Wiltshire Council owns an extensive property portfolio including:-

- Shops.
- Commercial / industrial sites and premises.
- Car parks.
- Parks / Recreation Grounds.
- Schools.
- Miscellaneous Open Spaces.
- Closed Landfill Sites.
- Waste Transfer Locations.
- Land formerly owned by the council or its predecessors which was contaminated then subsequently sold. Pursuant to the 'polluter pays principle' liability may still remain with the council

The full extent of land ownership and liability is currently unknown although this information was clearly held in a number of locations in the historic authorities. It will be necessary to liaise with appropriate departments across Wiltshire Council in order to ensure that an up to date register of land is produced in a suitable geospatially referenced format.

Potentially contaminated sites will be assessed using the same criteria as for land not in council ownership. Where council owned land is identified as being contaminated within the meaning of Part IIA, it will be investigated and remediated in priority order.

### **6.3 Information collection.**

#### **General**

The main thrust of the regulations is to identify significant pollutant linkages, the presence of which identifies the land as contaminated land within the meaning of the regulations.

The land use characteristics of the district are a mixture of agricultural land, mid sized towns (predominantly with industrial histories), smaller settlements, industrial, commercial and military land. The southern half of the area has vulnerable water resources and the majority of the population is centred within the urban areas. This makes the selection of a prioritisation strategy difficult due the range of possible receptors and the size of the council area.

Previously the four strategies adopted a receptor lead approach, focussing on human health and potable water supplies. It is now proposed that the GIS system is used more proactively in the new strategy to allow a weighting for types of land use, receptors and likely contaminants. Figure 23 above highlights the proposed prioritisation of receptors and this will be used as the basis of the weighting system.

#### **Identification of significant pollutant linkages**

Past activity of the former councils has generated a good knowledge of the location of likely receptors and possible polluting processes. This information is already mapped onto GIS systems and can be amalgamated into a single database. This information has been supplemented by the purchase of the historic information and mapping from Landmark.

Similarly, in terms of pathways, information on geology, water courses, source protection zones, boreholes etc are now geospatially available.

The available information will be amalgamated and scripts will be developed to carry out the following:-

- Division of Wiltshire into squares of a standardised area
- Using GIS mapping identify likely receptors (and apply a weighting)
- Using GIS mapping identify likely sources of contamination (and apply a weighting)
- Using GIS mapping identify likely pathways.

The weightings will be derived using the priority list described previously. Reference will also be made to guidance issued by the Secretary of State, the Environment Agency and the HPA. The exact weightings will be tested and moderated using known sites where investigation histories are known.

Pathways will be assumed to be present if there is no evidence to the contrary. This will give false positives which can be assessed by desktop and walk over exercises which will allow pathway information to be modified.

## **6.4 Identification of receptors**

### **Human receptors**

Human receptors will be targeted by reference principally to current OS mapping and additionally to;

- Wiltshire Council Plan
- Wiltshire Council Planning department records, including approved planning applications for residential and educational developments.

These records will be reviewed at 5 year periods.

### **Bodies of controlled water**

Bodies of controlled water will be identified by reference to the following sources;

- Environment Agency hydro-geological mapping of major and minor aquifers
- Environment Agency records of licensed groundwater abstraction points, source protection zones, surface water bodies, water quality ratings and surface water abstractions
- Wiltshire Council records of private groundwater abstractions.

These records will be reviewed at 5 year periods.

### **Ecological systems**

Ecological systems as defined within the following legislation;

- Wildlife and Countryside Act 1981, Sections; 28, 35 & 36
- Conservation of (Natural Habitats) Regulations 1994, Regulation 10
- Planning Policy Statement Note 9, paragraph 13, Nature Conservation (special areas of conservation, potential special protection areas & Ramsar sites).



These land uses will be identified by reference primarily to Wiltshire Council Forward Plan, the specified ecological systems being defined within the policies for; areas of high ecological value and sites of special scientific value and areas of outstanding natural beauty. Reference will also be made to records maintained by; English Nature and the Ministry of Agriculture Food and Fisheries.

These records will be reviewed at 5 year periods.

### **Livestock**

Property in the form of livestock or other owned animals, and wild animals that may be the subject of shooting or fishing rights or of crops will be obtained by reference to records maintained by;

- Environment Agency
- Food Standards Agency
- MAFF
- English Nature
- British Waterways

### **Buildings**

Property in the form of buildings as defined within The Town and Country Planning Act 1990, Section 336(1), will be identified by reference to the following information sources, evidence for the existence of pollutant linkages impacting on property in the form of residential structures will be assessed concurrently with those impacting on human receptors.

Establish from OS mapping and planning department records areas occupied by Trading Estates and other non residential structures.

## **6.5 Identification of potential sources**

Potential sources of contamination will be identified by reference to statutory authority records, current and historic mapping and available archive

Reference will also be made to information collated by the Environmental Health Department's prior to the formation of Wiltshire Council.

Potentially contaminated uses of land will include:-

- Airports / airfields
- Animal and animal products processing works
- Asbestos manufacturing works
- Brickworks
- Ceramics, cement and asphalt manufacturing works
- Charcoal works
- Chemical works
- Dockyards, dockland and wharves
- Dry cleaners
- Electricity generating stations, transformer and switch gear substations
- Engineering works
- Fibreglass and fibreglass resin works
- Gas works, coke works and other coal carbonisation works and associated by-product works
- Glass manufacturing works
- Metal manufacturing, refining and finishing works
- Mills and other prime movers (eg; hydraulic power stations)
- Oil refineries and bulk storage of crude oil and petroleum products
- Photographic process industry
- Printing and bookbinding works
- Pulp and paper manufacturing works
- Railway land
- Road vehicle fuelling, service and repair; garages, filling stations, transport and haulage centres
- Sewage works and sewage farms
- Textile works and dye works
- Timber treatment and products manufacturing works
- Unspecified depots and works
- Unspecified depressions / excavations which do not appear on later plans
- Unspecified sites with chimneys indicated
- Unspecified sites with tanks indicated
- Unspecified tipped areas
- Waste disposal, recycling and treatment sites

The principal archive sources of information are detailed below:-

<b>Potential Contamination Source</b>	<b>Information Source</b>
Historic Land Use	GIS mapping, Wiltshire Council Records, Landmark Data Set
Part B Prescribed Processes	Wiltshire Council Public Register
Licensed Waste disposal, recycling and treatment sites (active)	Environment Agency / Wiltshire Council
Licensed Waste disposal, recycling and treatment sites (closed)	Environment Agency / Wiltshire Council
Historic landfill sites	Environment Agency / Wiltshire Council/ Landmark Data Set
Fuel storage tanks	Wiltshire Council Petroleum Officer, Landmark Data Set
Environmental Protection Complaints Records	Wiltshire Council
Building Control Records	Wiltshire Council
Planning Records	Wiltshire Council
Radioactive Substance Use	Environment Agency and Wiltshire Council Records
<b>Special Sites</b>	<b>Information Source</b>
Part A Prescribed Processes	Environment Agency Public Register
MOD land	Defence Estate Organisation
Nuclear Installations	Nuclear Installations Inspectorate

Figure 24 Sources of historic information

## 6.6 Identification of pathways

Where the presence of receptors and a source have been identified, evidence for the presence of a pathway for the contamination source to impact on the receptor will be gathered from the following documentary sources and /or by means of a walkover survey of the site.

A pathway can be identified for this purpose on the basis of the general scientific knowledge of the nature of the contaminant and the circumstances of the land in question, without the need for direct observation of the pathway.

Where the presence of a pathway has been established or suspected then a pollutant linkage will be considered to be present.

Figure 25 sets out the principal pathways to be considered.

<b>Pathway</b>	<b>Information Source</b>
Permeable strata (liquid & gases)	Geological Survey Plans
Groundwater	Hydro-geological Plans
Surface water courses	OS Mapping, Environment Agency Data.
Surface water run off	OS Mapping (topographical factors)
Site specific factors (hard landscaping, drainage etc)	OS Mapping and/or site walk over survey.
Airborne mobilisation / inhalation	OS mapping / land use data and/or assessment of site specific factors (hard landscaping, buildings, vegetation cover, etc) from site walk over survey.
Ingestion	OS mapping / land use data and/or assessment of site specific factors (hard landscaping, buildings, vegetation cover, etc) from site walk over survey.
Dermal contact	OS mapping / land use data and/or assessment of site specific factors (hard landscaping, buildings, vegetation cover, etc) from site walk over survey.

**Figure 25 Sources of pathway information**

## **6.7 Information evaluation**

Information will be evaluated using a tiered risk assessment procedure.

Initial screening will be carried out by researching information regarding the site and its locality's characteristics, to construct a conceptual model.

Qualitative risk assessment will be used to initially determine if the three elements of the pollutant linkage are present (or potentially present) and to make an initial assessment of the significance of any pollutant linkage.

Generic trigger values, notably the CLEA SGVs (Contaminated Land Exposure Assessment Soil Guideline Values), also where CLEA SGVs have not yet been published, the LQM/CIEH Generic Assessment Criteria (2<sup>nd</sup> edition or later), the Dutch Ministry of Housing and Spatial Planning trigger values, will be used as a screening tool. Additional sources of site specific levels will be identified and used as appropriate.

Where qualitative risk assessment is not suitable to fully resolve the degree of risk posed by a contamination source to a receptor, or where there is a requirement to derive a site specific remediation target then Quantitative Risk assessment will be used.

The Wiltshire Council Specialist Environmental Protection Team currently uses the Environment Agency's research and development publication No 20 protocol for assessing impacts from council property on bodies of controlled water.(Posted at the Environment Agency's internet web site [www.environment-agency.gov.uk/gwcl](http://www.environment-agency.gov.uk/gwcl))

Additionally, Wiltshire Council has the capability of undertaking quantitative risk assessments for human receptor using the CLEA risk assessment software and the Scottish and Northern Ireland Forum for Environmental Research (SNIFFER) protocol.

Other appropriate risk assessment packages/protocols will be acquired and used as the need is identified.

In general as the presence of pollutant linkages are being established these will be categorised in to four categories for prioritising further investigation work, as detailed below.

<b>Priority</b>	<b>Definition</b>
1	Site probably or certainly not suitable for present use and environmental setting. Contaminants probably or certainly present and very likely to have an impact on key receptors. Urgent action required in the short term.
2	Site may not be suitable for present use and environmental setting. Contaminants probably or certainly present and very likely to have an impact on key receptors. Action may be required in the medium term.
3	Site considered suitable for present use and environmental setting. Contaminants may be present but are unlikely to have an unacceptable impact on key receptors. Action unlikely to be required whilst the site remains in its present use or otherwise remains undisturbed.
4	Site considered suitable for present use and environmental setting. Contaminants may be present but are very unlikely to have an unacceptable impact on key receptors. No action likely to be required whilst the site remains in its present use or otherwise remains undisturbed.

**Figure 26 Categorisation of land for inspection**

## **7.0 Interaction with other regulatory regimes**

### **General**

The contaminated land legislation is primarily targeted to identify historical ground contamination, to ensure that sites are fit for their current purpose. It replaces the existing Environmental Protection Act 1990 Part III Statutory Nuisance regime's function in investigation and actions with regard to ground contamination.

### **7.1 Development control**

Issues of ground contamination affecting development proposals are dealt with by Town and Country Planning legislation, principally by the provision of planning conditions requiring site investigation, remediation and remediation validation works, to ensure that the site is fit for the intended purpose. It is anticipated that current planning controls will remain the primary mechanism for dealing with ground contamination.

The council's Environmental Protection Section has robust links with both the Development Control and Building Control Sections and routinely advises on ground contamination issues amongst other issues, such as noise, traffic and air pollution.

### **7.2 Environmental Permitting (England and Wales) Regulations 2007**

The Environmental Permitting Regulations control pollution, including ground contamination, from certain prescribed industrial processes in current operation, via a system of Process Permits issued by the Environment Agency. Action under the Contaminated Land legislation is precluded where action under the new Environmental Permitting Regulations is appropriate to remedy ground contamination.

### **7.3 Waste management licensing**

Waste management sites were previously licensed under Part II of the Environmental Protection Act 1990. This has now been superseded by the Environmental Permitting Regulations. Prevention of pollution of the ground and groundwater environment is controlled by conditions contained within these permits.

Action under the Contaminated Land legislation is precluded where action may be evoked pursuant to a permit condition, to remedy ground contamination. Where ground or groundwater contamination is attributable to cause other than breach of a site license condition then the contaminated land provisions may be applied.

#### **7.4 Water Resources Act 1991 as amended by the Water Act 2003.**

This Act gives the Environment Agency powers to take action to prevent or remedy the pollution of controlled waters by the serving of “Works Notices” specifying remedial actions to be taken. This legislation overlaps with the new Contaminated Land legislation.

Where Local Authorities identify Contaminated Land impacting on controlled bodies of water then the Authority is required to liaise with the Environment Agency with respect to the appropriate remedial action to be taken. It is anticipated that the Contaminated Land legislation will be the primary tool used for dealing with ground contamination affecting controlled waters, the Water Resources Act 1991 being used where the pollutants are entirely contained within a body of controlled water or where the contamination sources cannot be identified.

Where pollution of a body of controlled water is due to a discharge subject to ‘discharge consent’ under the Water Resources Act 1991, action under the contaminated land regime will be precluded.

#### **7.5 The Finance Act 1996**

This act introduced a tax on the disposal of wastes, including those generated from the remediation of ground contamination. Exemptions from this tax may be obtained where ground contamination is being removed from a contaminated land site in order to prevent harm. Where a remediation notice has been served under Part II of the Environmental Protection Act 1990 exemption of the tax is precluded. This legislation provides an incentive mechanism for appropriate parties to undertake voluntary remediation of contaminated land sites.

## **8.0 Complaints and information requests.**

### **8.1 Requests from regulatory bodies.**

Regulatory bodies are considered to encompass the following:

- Internal departments of Wiltshire Council.
- Contractors or consultants appointed by and working on behalf of Wiltshire Council.
- The Department of the Environment, Transport and Regions.
- The Environment Agency.
- The Health and Safety Executive.

When a request for information is received from a regulatory body the request will be issued with a unique complaint reference number. Information relevant to the request will be compiled both from the contaminated land database and the public contaminated land register.

All information drawn from the Wiltshire Council's internal contaminated land database will be marked as *strictly confidential* and *commercially sensitive*.

Responses to requests for information will be made within 10 working days from the date of the receipt of the request, excepting emergency situations, when information will be supplied as soon as is practicable.

Where a memorandum of understanding exists between the Council and the regulatory body no charges shall be made.

### **8.2 Requests for information from other sources.**

For the purposes of this document the general public, commercial organisation and other parties bodies will encompass the following:

- Members of the general public
- Commercial organisations (including land agents and consultancy companies)
- Utility companies
- Members of educational establishments
- Other organisations not covered by Regulatory Bodies above

When a request for information is received from the general public, a commercial organisation or other parties the request will be issued with a unique complaint reference number.



Information will be provided in accordance with the requirements of the Environmental Information Regulations 2004. Where possible, extracts of historic mapping and OS mapping will be made available, within the terms of the copyright and licence conditions imposed on the council.

Responses to requests for information will be made within 10 working days from the date of the receipt of the request.

A charge for this information will usually be made. The level of the charge will be set according to the fees and charges policy set by Wiltshire Council and current at the time of the request. This charge may be waived at the discretion of the officer undertaking the work if:

- No information is available, or;
- The amount of information held by the council is minimal and a charge would be disproportionate to the work involved in producing the response, or;
- There are extenuating circumstances in agreement with the team leader.

Fees will **not** usually be waived if the information request is made by a commercial organisation, consultancy, solicitor, search provider or similar.

### **8.3 Receipt of new information.**

It is anticipated that new information regarding ground contamination will be regularly received from the statutory authorities. Examples of receipt of information by this route would be; updates of information from the Environment Agency or Site Investigation reports forwarded by Development Control.

Where new or revised information regarding ground contamination is received, from a verifiable source detailing a clear audit trail, the information will be entered onto the Wiltshire Council Contaminated Land Database and the presence of pollutant linkages will be assessed as detailed above. The public contaminated land register will be amended if evidence for significant pollutant linkages is identified. Verification of the quality and accuracy of the information will be required prior to the amendment of the database and public register.

Anecdotal information will be fully noted and detailed but will be subject to verification prior to being added to either the contaminated land database or the public contaminated land register.

The details of persons, other than regulatory authorities, supplying information will be treated as confidential unless disclosure for legal proceedings is required or unless the information is in the public domain as a result of the planning process.

#### **8.4 Public register availability.**

The public register shall be kept from July 2001 and will be made available for inspection on demand during office hours. In order to ensure that staff are available to answer any queries arising out of the inspection of the register it is suggested that an appointment for inspection is made.

#### **8.5 Complaints regarding land contamination.**

All complaints received concerning ground contamination will be subject to the standard Environmental Protection Specification for Statutory Nuisance Complaints.

All efforts will be made to rapidly evaluate the complaint and enable a solution to be provided. It must be noted that these issues are often complex, requiring several phases of investigation to fully evaluate the ground conditions and provide an appropriate remedial solution. As a result of this complexity, a rapid resolution may not always be possible.

In general the salient point of the procedure may be summarised as:

- Complaint recorded and allocated unique reference number
- Allocation to an appropriate officer
- Initial response within 10 working days
- Inspection of the site to establish the risk and whether further involvement is required
- Regular feedback to the complainant as to the progress in investigating the issues
- Identification of the site owner and the appropriate party to bear responsibility for investigation and contamination of the land
- Consultation with the land owner, appropriate person/s and other bodies with regard to investigation and remediation  
*(several phases may be required as the project is progressed)*
- Provision of funding  
*(several phases may be required as the project is progressed)*
- Investigation to verify that a significant pollution exists, that the site is “Contaminated Land” and to gain information for remediation design.  
*(several phases may be required to fully investigate the chemical, geo-technical, hydro-geological etc. characteristics of the land)*
- Design and enactment of remediation works
- Validation of the remediation works
- Apportionment / recovery of costs

## 9.0 Liaison and communication.

The identification of contaminated land and its subsequent remediation will require the collection of significant quantities of information from a variety of sources; this information will require updating on a regular basis.

Furthermore it is anticipated that presence of contaminated land will have an impact upon and involve many parties in the locality of the designated land, and will inevitably bring enquiries and concerns from many diverse parties.

Hence the implementation of the Contaminated Land Regulations is a process involving many stakeholders and interested parties, and effective liaison and communication with the stakeholders will form an important part of this council's duties with respect to this legislation, and its efficient implementation.

The identified principal stakeholders and interested parties are detailed below:-

- Statutory bodies (external bodies and other WC departments)
- Property owners, occupiers and other interested parties (e.g. funds)
- The wider community (e.g. neighbours of contaminated land sites)

Each of the stakeholder groups will be given the opportunity to comment on the draft contaminated land inspection strategy.

The following points of contact and procedures for liaison and communication are proposed.

### 9.1 Wiltshire council departments

The following departments are considered to have an interest in the new Contaminated Land regime and are to be consulted as indicated.

#### **Regulatory services**

*(Development Control, Building Control and Public Protection).*

Regulatory services is primarily considered to be used as a source of information regarding past development of brown field sites. The existing Town and Country Planning regulations will be used to require any ground contamination investigation and remediation works pertaining to future development.

These departments will be contacted when areas of contaminated land are due to be designated and they will have access to the Authority's internal ground contamination database. The principal officers of each area of these departments will be the initial point of contact.

### **Commercial services department**

As previously detailed the council has a significant property portfolio which has yet to be investigated for contaminated land. The initial point of contact for liaison on ground contamination issues associated with council owned land will be:

- Technical and professional services manager
- Contract services manager

Prior to undertaking investigation works or the determination of the contaminated land status the above will be consulted. It is anticipated that the elected members of the council will be informed of any contaminated land issue affecting council property.

### **Legal services department**

Legal Services will be consulted prior to the serving of any legal notice with respect to the contaminated land regulations.

## **9.2 The Environment Agency**

The Environment Agency is considered to be one of the principal external bodies with which consultations will take place, being a provider of environmental information and technical guidance, and the enforcing authority for special sites and other environmental legislation.

A memorandum of understanding, detailed within the Local Government Association Circular 563/98 of September 1998, has been agreed between the Local Government Association and Environment Agency. The memorandum details the framework within which the Environment Agency and Local Authority interface, with respect to matters of shared responsibility or interest.

The protocol has been accepted by the Local Government Association on behalf of Local Authorities and hence Wiltshire Council officers will observe the agreed approach during liaison with the Environment Agency.

### 9.3 Statutory Authorities

The DETR guidance lists the following Authorities as statutory consultees with respect to the compilation of the inspection strategy. These bodies are also considered to be important sources of information and expertise during the implementation of the Contaminated Land regulations.

#### **South West of England Regional Development Agency**

South West RDA

Corporate Headquarters, Stirling House, Dix's Field, Exeter, EX1 1QA  
01392 214 747

#### **English Nature**

Conservation Officer

Prince Morris Court, Hambleton Av., Devizes, SN10 2RT (01380  
726344 x28)

#### **English Heritage-**

29 Queen's Square, Bristol, BS1 4ND

#### **Ministry of Agriculture Food and Fisheries**

Room 142, Nobel House, 17 Smith Street, London SW1P 3JR (0207  
238 5898)

### 9.4 Property Owners and other interested parties

The council implements its regulatory duties informally where this is possible and the voluntary resolution of Contaminated Land issues accrues benefits to both the landowner and the council, as below:

- Actions may be agreed and implemented in a shorter time, hence impacts on environmental receptors may be minimised
- Legal proceedings and the associated costs and time may be avoided
- The stigma associated with legal proceedings to remedy ground contamination may be avoided
- The appropriate person may retain eligibility for Landfill Tax exemption on contaminated soils removed during the remediation process

Where land is determined by the council to be contaminated, but is not a Special Site (SS), and where urgent remediation is not required, the following minimum notification procedure will be carried out:-

- The council will identify the owner and occupier of the land, and the appropriate person to bear responsibility for the remediation actions required.

- The council will notify the appropriate persons and agencies, detailing the reasons for the determination.
- Consultation regarding the remediation scheme, and timescales, can then be commenced.
- A minimum period of three months from notification will usually be allowed before a remediation notice is served.

It should be noted that intrusive site investigation procedures are classified as 'Remediation Actions' by section 78A(7) of the Environmental Protection Act 1990. It is possible that substantial site investigation may be required by the Council (or Environment Agency) once land has been determined to be contaminated.

The council will endeavour to informally consult the owners and occupiers of land, or other appropriate persons one month before making a determination of contaminated land. This period is to allow the parties to voluntarily collect and present any relevant information regarding the land.

The Council is not under any statutory obligation to undertake informal pre-notifications of its intentions and these will be made on a discretionary basis. Where it is considered that such pre-notification may result in deliberate obstruction of the Council's investigations no pre-notification will be carried out.

## **9.5 The wider community**

The draft inspection strategy will be a publicly available document and will be posted on the council's internet site. Consultation with the general public will be invited.

Information supplied by members of the general public will be accepted but will be subjected to verification. Anecdotal evidence will be accepted however its status will be recorded.

During the remediation of sites determined to be contaminated land, the council will take measures to inform the general public of the works, such measures may include:

- press releases
- posting of public notices
- letter drops to residents and premises within the locality
- briefing of local councillors and parish councils

The exact nature of the public consultation will be decided on each case's particular circumstances, considering the nature of the works, contamination present, duration of the works, localities characteristics etc. All views expressed by the local community will be given due investigation and consideration.

It is anticipated that the expectations of some members of the public will exceed that which is achievable via the legislation and the unavoidable constraints on resources.

## **9.6 Powers of entry**

Section 108(6) and Schedule 18 of the Environment Act 1995 gives the local authority statutory powers of entry subject to the consent of the land owner or the issuing of a warrant by a magistrate, to carry out investigation or remediation works. In certain emergency situations, detailed within the Act, the powers of entry can be exercised with immediate effect.

The use of these powers is considered to be an option of last resort in circumstances where access to the land in question cannot be voluntarily agreed.

A minimum of seven days notice of entry by statutory powers is required if residential properties are to be inspected or the use of heavy plant or equipment is required.

## 6 Programme for inspection

The initial prioritisation process will result in the identification of a list of sites which may require further detailed inspection. This section outlines the procedures that will be followed in the detailed inspection of sites.

### 10.1 Compliance with statutory guidance on inspection.

The output from the initial inspection program will include a summary of those issues causing the site to require further inspection. The statutory guidance sets out issues to be addressed in the inspection of sites. The council's approach to satisfying these requirements is outlined below:

1. Detailed inspection shall not take place without physical or theoretical evidence of the actual presence of a pollutant.
2. Detailed inspection of a site may include the following:
  - a. Collation and assessment of documentary information, or other information from other bodies
  - b. A visit to a particular area for the purpose of visual inspection and, in some cases, limited sampling
  - c. Intrusive investigation of the land (for example by exploratory excavations).

The council has powers of entry to undertake detailed inspections should this prove necessary. It is the intention of the council to encourage voluntary action whenever possible.

Landowners or occupiers, who wish voluntarily to provide the information needed for a detailed inspection, will be provided with advice from the contaminated land officer relating to the inspection objectives.

Where the council undertakes an inspection using statutory powers of entry it will apply the principles listed in figure 27.



i	An intrusive investigation will only take place if there is a reasonable possibility that a pollutant linkage exists on the land.
ii	An intrusive investigation will only take place if there is a reasonable possibility that a contaminant is present on the land and that a receptor is present or likely to be present.
iii	Where the council has been provided with detailed information on the condition of the land, which is sufficient to determine whether the site is contaminated land, an intrusive inspection using the statutory powers of entry will not be undertaken.  This situation would also apply where a person offers to provide such information within a reasonable and specified time period and subsequently provides the information.
iv	The council, or their agent, will carry out any intrusive investigation in accordance with the appropriate technical procedures and safety requirements.
v	During an intrusive investigation, all reasonable precautions will be taken to avoid harm, water pollution, damage to natural resources, or damage to features of historical or archaeological interest.
vi	Prior to the undertaking of an intrusive investigation on any area notified as a Site of Special Scientific Interest, the council will consult English Nature on any action that would require their consent.
vii	Should an inspection provide sufficient information to, reasonably preclude the possibility of a pollutant linkage, the council will not carry out any further detailed inspection unless a change in circumstance dictates a review of the site in question.

**Figure 27 Requirements for intrusive investigation.**

## **11.0 Methodology for detailed inspection**

The purpose of the detailed inspection is to determine whether the land identified in the initial inspection survey appears to be contaminated land and whether it falls within the definition of a special site. The following series of actions indicates the approach to be taken by the council and the order in which they are to be undertaken. Figure 28 shows a typical example of the process.

### **11.1 Obtaining additional information**

Where appropriate, further research will be carried out to determine the likely presence and significance of sources, pathways and receptors. The search for additional information may involve consultation within the council as well as externally to seek further details or advice on a site-specific basis.

### **11.2 Consultation**

Formal consultation with all appropriate consultees will be undertaken at this stage. The list of consultees will depend upon the particulars of the site and pollutant linkage.

### **11.3 Contact with the land owner/occupier**

Those identified as responsible for a site will be contacted and advised of the investigation into contamination issues and the significant pollutant linkage(s) under further investigation. Information or clarification of certain details, as well as site access may be requested.

### **11.4 Walkover survey**

Access will usually be undertaken with agreement with the site owner and/or occupier but where this is not forthcoming the council may be required to use its statutory powers. The purpose of the visit, during the detailed inspection, will be to establish current land use, site character and evidence of contamination. Each site visit will focus on signs associated with significant pollutant linkages under investigation. The site visit will be undertaken only where it is considered that there is a reasonable possibility of the presence of a contaminant, pathway and receptor.

## **11.5 Continual risk assessment**

Where reasonably practicable an assessment of the risk from a significant pollutant linkage will be undertaken as soon as additional information is obtained. The additional information should provide a more reliable model of the pollutant linkage. The resulting assessment will be used to drive any investigation where there is a requirement for it.

## **11.6 Investigation through sampling**

If the risk assessment shows there is a reasonable possibility of a significant pollutant linkage, the council will seek to obtain evidence that the linkage exists. The actual methods or investigation procedure will be developed on a site specific basis, however, appropriate published guidance will be referred to and methods of good practice employed.

The landowner and/or occupier or other party may offer to undertake a site investigation. In this situation, the contaminated land officer will specify the minimum requirements of the site investigation to satisfy the inspection objectives and ensure adequate information is obtained within an agreed timescale.

As information is obtained by the ongoing investigation the risk assessment will be undertaken to determine whether the site is contaminated land or a special site.

## **11.7 Determination of contaminated land**

To focus Part 2A only on problematic land, and to avoid inadvertently catching non-problematic land, there has to be confidence of significant possibility of significant harm, or pollution of water before land is determined.

In the event that sufficient information has been gathered at this stage to enable the site to be determined as contaminated land or a special site, no further investigation will take place. The statutory requirements of the inspection procedure would have been met.

Where the information obtained to date indicates that the site is not contaminated land under the statutory definition no further action will be taken and the inspection will cease. The landowner and/or occupier if previously in communication with the council will be informed in writing of the current situation. All details of inspection will be retained on file.

This is particularly important, as there is the possibility that a change in the site character may create a new significant pollutant linkage. Although not a requirement, it may make economic sense to identify all pollutant linkages during the inspection phase. This may avoid costly additional mobilisation onto site and duplication of remediation.

Prior to the determination of a site as contaminated land the authority will write to the owner and occupier. They will be advised of the Council's view and will be invited to discuss the situation prior to formal designation. The details provided in the correspondence will include:

- a description of the significant pollutant linkage(s) of concern
- a summary of the evidence on which the determination is based
- a summary of the relevant assessment of this evidence
- a summary of the way the council considers that the requirements of (chapters A and B) of the statutory guidance have been satisfied.

## **11.8 Designation of contaminated land**

Where it is considered that the land is contaminated land the council will prepare a written record of the determination.

Following the designation of land as contaminated, the council will comply with the requirements of the statutory guidance and following a three month period in which negotiation will be encouraged, give written notice to:

- the owner of the land
- the person who appears to the local authority to be in occupation of the whole or part of the land that has been designated
- any person who appears to be the appropriate person, having responsibility for any remediation that might be necessary
- the Environment Agency.

A remediation notice will be served on the owner/occupier of the land specifying the action required to ensure the land is made suitable for use or to prevent pollution of controlled waters.

## **11.9 Investigation through sampling**

If the risk assessment shows there is a reasonable possibility of a significant pollutant linkage, the council will seek to obtain evidence that the linkage exists. The actual methods or investigation procedure will be developed on a site specific basis, however, appropriate published guidance will be referred to and methods of good practice employed.

The landowner and/or occupier or other party may offer to undertake a site investigation. In this situation, the contaminated land officer will specify the minimum requirements of the site investigation to satisfy the inspection objectives and ensure adequate information is obtained within an agreed timescale.

As information is obtained by the ongoing investigation the risk assessment will be undertaken to determine whether the site is contaminated land or a special site.

### **11.10 Potential special sites**

Before an area of land can be formally referred to as a special site, the council must take the initial step of designating the land as contaminated, if the council believes that the land may be 'special' and thus by designating the land, it would become a special site, the council can request that the Agency investigates the land on its behalf. If the Agency agrees that the land is a potential special site and undertakes an inspection which identifies one or more Significant Pollutant Linkages (SPLs), this information is passed over to the council allowing them to make the initial designation.

### **11.11 Information from detailed inspection**

All information collected during the detailed inspection process will be maintained on the council's GIS along with previously collated information from the initial inspection and prioritisation.

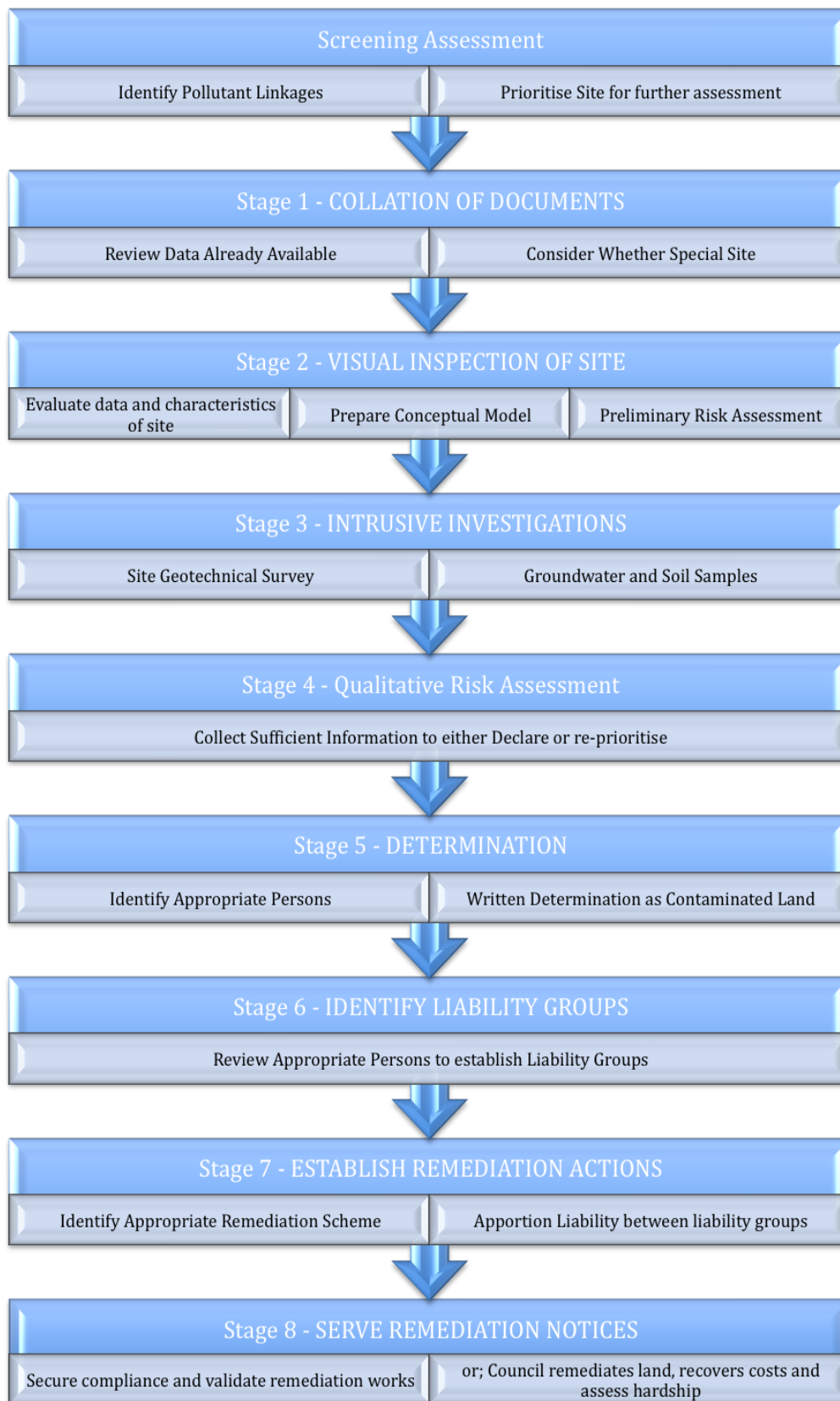
### **11.12 Urgent remediation**

Urgent remediation will occur where the council becomes satisfied that there is imminent danger of serious harm to people or the environment, the serious pollution of controlled waters, or serious harm attributable to radioactivity. The council will usually seek to recover costs of urgent remediation works that it has completed.

### **11.13 Details on additional policy related to contaminated land**

Details of the councils policy on the enforcement of contaminated land legislation and other supporting policies will be developed separately from the core contaminated land strategy. Guidance will be available on the council website once these policies are available. Information will include :-

Enforcement	Grounds for Appeal
Orphan Sites	Apportionment of Liability
Hardship Policy	



**Figure 28 Flowchart of remediation process**

## **12.0 Information Management.**

### **12.1 General**

The council will use a computerised database for the storage of information. Currently this is held in several formats at four locations. The information will be brought together in a single database using geospatial referencing.

The database is for the use of the council and the environment agency in the course of their duties and activities. The primary function of the database is for the identification of significant pollution linkages and land contaminated within the meaning of Part IIA but the information held will also be used in more general formation of policy and strategy and to assist other services and departments in fulfilling their statutory functions.

Required information will be transferred to the public register. This register will be held in electronic format and be available on the council Website. The register will be able to be viewed at any council office and a print out of information will be made available on request.

The information held by the council will be predominantly drawn from the public domain but there will be elements that are commercially sensitive. Collected information will highlight environmental liabilities falling outside the scope of the contaminated land regulations and in order to prevent blight the information will be treated as strictly confidential and commercially sensitive.

Any requests to view information held on the database will be considered as required by the Environmental Information Regulations and Freedom of information Act, but some or all of the information may be withheld depending on the individual circumstances.

The information on the database will contain information as summarised in figure 29 below.

## STRICTLY CONFIDENTIAL AND COMMERCIALY SENSITIVE

1.0	Site Identification	
1.1	Database Reference Number	xxx
1.2	Site Title	xxxxxxxxxx
1.3	Site Address	xxxxxxxxxx
1.4	Remediation Register Entry Number	yyy
1.5	Date of last revision	5/10/2000
1.6	Confidentiality status of site details	N/A
1.7	<i>Keywords (Site Type)</i>	Gasworks
1.8	Special Site Status	Yes
1.9	Date referred to Environment Agency and Contact Details	TBA
1.10	Details of Special Site Status	Middle Jurassic Limestone impacted by hydrocarbons
1.11	OS Grid Reference	ST 825 603
1.12	Site Size (Ha)	0.5
1.13	Planning Application Number	
1.14	Building Control Application Number	
1.15	UPRN No	00119/0580/3/000
1.16	Site Owner	xxxxxxx
1.17	Tenant Details	xxxxxx
1.18	File references and locations	Case file 19983496
1.19	Notes	Site forms central area of gasworks site, approx 25%
2.0	<b><i>Receptor Types</i></b>	
2.1	Primary	Groundwater
2.2	Secondary	None
2.3	Tertiary	Site users, services
2.4	Source Protection Zone Status	None
2.5	<i>Notes</i>	
3.0	<b><i>Source Types</i></b>	
3.1	Current Site Use	car parking
3.2	Identified Former Site Use	Part of coal carbonisation works
3.3	IPPC A1 Prescribed Process	None
3.4	IPPC A2 Prescribed Process	None
3.5	Presence of Subsurface Tanks / Structures	Tar and liquor well and gasholder base identified
3.6	Potential Contaminants	Organics inc PAH and phenolics, metals ,CN, S, pH
3.7	<i>Notes</i>	



4.0	<b>Pathway Types</b>	
4.1	Geology Solid	Fracture flow through Oolite limestone, gentle dip to east
4.2	Geology Drift	Permeable gravel and fill present
4.3	Hydrogeology	Major Aquifer present at depth (10m bgl ) GW flow presumed towards north west (topographical influence)
4.4	Hydrology	R Avon 300m N, Canal 70m SW
4.5	Site Surfacing , Permeability & Accessibility	Compacted clean aggregate
4.6	Topography	Site / local topography dips to west
5.0	<b>Identified Site Investigation and Test Result Summary</b>	Characterisation Investigation April 1998 (xxxxxxx, xx; xxxxxx) Detailed Investigation October 1999 (xxxxxx ref; xxxxxxxx) Tank contents, made ground and groundwater impacted by PAHs
6.0	<b>Remediation Works</b>	
6.1	<i>Remedial Works</i>	Excavation of contents of subsurface structures and available made ground within structural constraints
6.2	<i>Works Details (Dates, Engineer, Main Contractor)</i>	Engineer; xxxxxxxxx Main Contractor; xxxxxxxxxx Dates; April 2000
6.3	<b>Validation Works</b>	Validation samples collected on completion of each area of excavation, submitted for totals and leachability analysis, results pending
6.4	<b>Warranties Provided</b>	none
6.5	<b>Third Party Approval Details</b>	TBA
7.0	<b>Pollutant linkages</b>	
7.1	<i>Significant Pollutant linkages Identified</i>	<b>source</b> ; tar well contents, <b>pathway</b> ; permeable groundmass, <b>receptor</b> ; controlled water <b>source</b> ; PAH contaminated fill and drift, <b>pathway</b> ; permeable groundmass, <b>receptor</b> ; controlled water
7.2	<b>Pollutant linkages Identified</b>	None identified
7.3	<i>Significant Pollutant linkages Subject to Remediation</i>	<b>source</b> ; tar well contents, <b>pathway</b> ; permeable groundmass, <b>receptor</b> ; controlled water

		<b>source</b> ; PAH contaminated fill and drift, <b>pathway</b> ; permeable groundmass, <b>receptor</b> ; controlled water
		<b>source</b> ; gas holder base contents, <b>pathway</b> ; permeable groundmass, <b>receptor</b> ; controlled water
7.4	<b>Pollutant linkages Subject to Remediation</b>	None identified
7.5	<i>Significant Pollutant linkages Present post Remediation</i>	None identified
7.6	<i>Pollutant linkages Present post Remediation</i>	n/a
8.0	Works Required	
8.1	<i>Site Investigation Required</i>	Intrusive SI of adjacent portions of gasworks site
8.2	<i>Site Investigation Pending</i>	None
8.3	<b>Remedial Works Required</b>	None Identified
8.4	<b>Remedial works Pending</b>	None
9.0	<i>Statutory Notices Served</i>	None
10.0	Operational Management and Maintenance Required	
11.0	Overall Environmental Risk Rating	Groundwater <b>low</b> , site users <b>low</b> .
	<b>Notes</b>	

Figure 29 Example of database entry

## 12.2 Details entered on public contaminated land register

The following is a summary of the information prescribed by section 78R of the Act to be recorded on the Public Contaminated Land Register (full details are presented in The Contaminated Land (England) Regulations 2000 and DETR Circular 02/2000) :-

- Remediation notices
  - Details of the appropriate person
  - Site details
  - Pollutant linkages identified
  - Site's current use
  - Remediation action required
- Remediation notice appeals

- Remediation declarations (prepared by the enforcing authority)
- Remediation statements
- Appeals against charging notices
- Special sites designations
- Notification of claimed remediation
- Convictions for offences under section 78M of the Act
- Other environmental controls

The public register will be recorded in electronic format and will be available on the council website and for personal inspection free of charge at the council's offices during office hours. It is not required that an appointment is made, however, the availability of staff competent to answer any matters that may arise from inspection of the register cannot be guaranteed without prior notification.

### **12.3 Provision of information to the Environment Agency**

The regulations require the Council to notify the Environment Agency whenever a site is determined to be 'contaminated land' and when remediation notices, statements or declarations are issued or agreed. Pursuant to the regulations the Environment Agency is required to prepare an annual report detailing the state of contaminated land in England and Wales and the Local Authorities are required to provide information on:

- strategy effectiveness and progress
- the amount of contaminated land identified
- the types of contamination identified
- the remediation works carried out.

A memorandum of understanding has been compiled by the Environment Agency (EA) and Local Government Association (LGA) that describes how information will be exchanged. The council will therefore exchange information with the EA following the guidelines agreed by this national forum.