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SCOTTISH GOVERNMENT

Dealing with land contamination in Scotland

A review of progress 2000-2008

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Foreword

In 2006 we published our second State of Scotland's Environment report which ambitiously aimed to describe the high quality but sometimes threatened environment of Scotland. The 2006 report indicated that the Scottish environment is generally of good quality but that there are still significant issues which need to be addressed – in particular climate change, localised air pollution; growing pressure on soil quality, impacts of diffuse pollution on both urban and rural environments, flooding, structural changes to water environments, increase in resource consumption and waste generation, sustainable management of radioactive waste and the decline in biodiversity. One of the significant outstanding issues was the need to bring land affected by historical contamination back into beneficial use.

There is a significant amount of interest in land contamination from a variety of groups including local authorities, land developers, environmental consultants, academic institutions and the general public. With such interest in this issue, it was imperative to involve as many key partner organisations as possible at an early stage in our review of land contamination in Scotland. To ensure we achieved this objective, national stakeholder events were organised to gauge views on our proposed approach. The workshop events were instrumental in forming the contents and structure of this report. We believe that this participative and collaborative approach was highly successful and something we shall continue to do when faced with important national reports in the future.

This state of contaminated land report represents the first attempt to indicate the extent of contaminated land and potentially contaminated land in Scotland. The lack of any previous estimate is partly a result of the large number of organisations holding information (often in incompatible formats) and partly because the term 'contaminated land' has been used to mean different things in different circumstances. For example, contaminated land may have been described as land where the risk to humans or the wider environment is merely suspected, but it could also be land where a significant risk has been confirmed.

This report describes a regulatory regime, commonly known as Part IIA, through which local authorities (and in some circumstances SEPA) effect remediation of land contamination that is posing unacceptable risk to health or the environment. However, formal identification of contaminated land through Part IIA represents just one mechanism for addressing risks from land contamination as a result of historical activities. In recognition of this, the report describes the important progress that has been made to deal with the wider legacy of land contamination via the planning system and voluntary action.

Additional data have also been gathered enabling a better understanding of the overall progress in dealing with land contamination in Scotland. Importantly, these data will also form the baseline for future reports to be published by SEPA at the request of the Scottish Government.

SEPA is grateful to local authority contaminated land officers for providing most of the information used to compile this report. We hope readers find the information useful.



David Sigsworth
Chairman



Dr Campbell Gemmell
Chief Executive

Executive summary

This is our first statutory report on the state of contaminated land for Scotland which, at the request of the Scottish Ministers, we have to produce under Part IIA of the Environmental Protection Act 1990. The report provides information on the progress made by local authorities and the Scottish Environment Protection Agency (SEPA) in implementing the Part IIA regime. The statutory regime is only one mechanism by which land contamination is dealt with in Scotland, so we have also described the progress being made through other routes, in particular through the development planning system.

Under Part IIA, local authorities have prepared detailed strategies on how to tackle our legacy of land contamination and in doing so have been inspecting sites to identify contaminated land within their respective areas.

We have prepared the report using information held by Scotland's local authorities on sites that are known or suspected to be affected by contamination. The information gathered covered topics such as:

- the number of sites inspected, determined and remediated via Part IIA;
- the number of sites considered and remediated through the planning system or through voluntary remediation.

We have also included our own information on special sites which we regulate under Part IIA.

Local authority contaminated land officers were invited to comment on the positive and negative elements of the statutory regime, and a summary of their views is provided.

Key findings

The introduction of the contaminated land regime is believed to have benefited Scotland's people and the environment.

The introduction of the regime has raised the profile and awareness of the issues associated with land contamination with land owners, developers, their professional advisors, the general public and regulators. This increased awareness of the issues and legal consequences of not dealing with problem sites has encouraged the rehabilitation of sites via the planning system and voluntary remediation. Local authority contaminated land officers have provided extensive expertise to their planning colleagues in respect of this work.

The total number of sites affected by contamination within Scotland is difficult to judge accurately as individual local authorities have chosen a variety of assessment methods. However, it is estimated that approximately 67,000 sites (82,034 hectares) could be affected by land contamination, and so require inspection under Part IIA or alternatively to be dealt with as part of the planning system.

The Part IIA regime has brought about the following benefits either directly through the implementation of the statutory regime or through the increased profile of land contamination since the regime was introduced in 2000:

- An estimated 27,000 inspections of land with the potential to be contaminated have already been or are in the process of being undertaken (equating to an estimated 40% of all such sites).
- A total of 807 sites (equivalent to 1,864 hectares) of land that was affected by contamination have been remediated via the planning system or through voluntary remediation.
- Progress under Part IIA has enabled the determination of 13 sites (equivalent to 53 hectares). Remediation notices have been served for five sites.
- The success of the regime is that it has required site inspections and then encouraged voluntary remediation and remediation through the planning system.
One constraint on the designation of land as contaminated under Part IIA appears to be that once designated the record of remediation action/activity remains on the register. There is no mechanism for removing a site from the register once its on there.

The evidence suggests that the Part IIA regime has provided an incentive in encouraging voluntary remediation and remediation through the planning system. The data also confirm that sites that are causing unacceptable risks in their current use can be dealt with through the statutory Part IIA process.

1 Introduction

As a result of the drive to bring potentially contaminated, derelict and/or vacant land back into beneficial use, a new contaminated land regime was introduced in 2000 to implement the provisions of Part IIA of the Environmental Protection Act 1990 (the Act)¹.

The contaminated land regime, commonly referred to as Part IIA, provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. Regulations were made and statutory guidance issued in Scotland in 2000; these were amended in 2005 and 2006 respectively following the introduction of the Water Environment and Water Services (Scotland) Act 2003. Section 2 of this report provides an overview of Part IIA.

This report has been prepared at the request of Scottish Ministers to meet the statutory requirement under Part IIA to report on the state of contaminated land in Scotland². This report provides information on the progress made by local authorities and the Scottish Environment Protection Agency (SEPA) in implementing the regime. Its findings are based on data provided by Scottish local authorities (see Appendix A) as well as information held by SEPA.

Although the main focus of the report is to describe activity under the Part IIA regime, progress with the wider legacy of land contamination in Scotland has also been made through development management and voluntary remediation. Additional information was therefore gathered to gain a better understanding of overall progress and trends in dealing with land contamination in Scotland.

Importantly, the data gathered will also provide the baseline for future reports.

The Radioactive Contaminated Land (Scotland) Regulations 2007, which came into force at the end of October 2007, extended the provisions of the contaminated land regime to deal with harm or pollution of the water environment attributable to radioactivity possessed by any substances. The data in this report relate to the period up to the end of March 2008 when the radioactive contaminated land regime

was in its early stages. As a consequence, progress on this aspect of the regime is not recorded in this report and formal reporting on the progress of the radioactive contaminated land regime will be included in the next state of contaminated land report.

1.1 Aims of the report

The aims of the report are to:

- describe the progress in implementation of the contaminated land regime (Part IIA) – in particular how local authorities are progressing with their inspection duties;
- summarise regulatory activity under Part IIA – in particular the determination and remediation of contaminated land;
- provide a baseline for the future compilation of information on the general nature, extent and distribution of contaminated land in Scotland under Part IIA;
- assess the effectiveness of Part IIA in addressing land contamination.

1.2 Contaminated land and land contamination

The term “contaminated land” is often used to describe the wide legacy of land which has been affected by historical industrial use. However, the term does have a specific legal definition. For the purpose of this report, “contaminated land” has the meaning of the statutory definition, as described in the Act (as amended); “land affected by contamination” and “land contamination” describe any land where contamination may be present, irrespective of the significance of its presence. Other terms and definitions used in the report are described in the Glossary.

Figure 1 shows the relationships between all land, and the various land subsets as affected by land contamination.

- **Development management** represents a category of site where new development or redevelopment involving a change of use takes place.
- **Contaminated land** is a subset of land where contamination is causing a significant risk to human health or the environment.

¹As inserted by section 57 of the Environment Act 1995

²This report satisfies the requirement to report on the state of contaminated land as set out in section 78U of the Act.

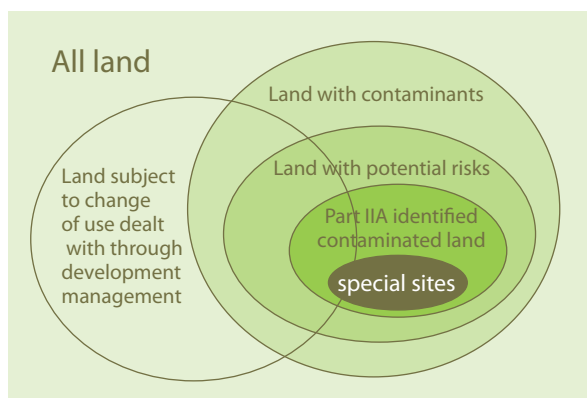


Figure 1: Interactions between land and contamination

1.3 Scotland's environment

Although Scotland has an enviable environment there are still some concerns relating to brownfield land where the historic legacy of heavy industry may have led to the land being contaminated.

Scotland's past and future success is inextricably linked to the state of the Scottish environment. To ensure we remain a champion for environmental sustainability, the reuse of our derelict and brownfield land will be vital to our continued growth as a nation.

As one of the many guardians of this environment, SEPA published its second report on the overall State of Scotland's Environment (SoER) in 2006. This section provides a summary of the findings of the report and places the issues associated with land contamination into the overall environmental landscape of Scotland.

Scotland thrives and depends on its very high quality natural environment. It is estimated that almost 80% of Scotland's population lives less than two hours drive from some of the most beautiful countryside in Europe.

Scotland's environment is generally of good quality. Historically there have been many improvements, particularly as a result of the reduction in emissions from industrial sources. In most areas, air quality standards are met for the majority of the time and the state of our freshwater environment is largely good thanks to concerted and continuing action to reduce pollution and control discharges.

Similarly, for much of the year Scotland has abundant water in most, but not all areas. Our landscapes of mountains and coasts provide the backdrop for a generally high quality of life and the basis of a successful tourism industry and vibrant economy.

Despite this there are still some concerns as highlighted in the SoER including:

- soil erosion and soil sealing;
- localised air pollution;
- climate change;
- reductions in stratospheric ozone;
- risks to water quality from diffuse pollution;
- increases in the amount of waste being produced;
- potential ecological damage from nutrient enrichment and acidification;
- loss of biodiversity.

These pressures are widely recognised. While it may not be a key issue, land contamination is something which is problematic and requires addressing. A significant amount of research continues to be conducted across Europe and the rest of the world into:

- land (especially soil) quality;
- the environmental implications of hazardous chemicals;
- the relationships between the environment and human health.

In time, the results of these and other research projects will give greater understanding of the potential environmental and human health impacts arising from land contamination.

1.4 Origins of land contamination

Scotland was at the forefront of the Industrial Revolution that took place during the second half of the 18th century and the first half of the 19th century. The development of the steam engine by James Watt in the 18th century began to increase demand for coal and the large engines of the new industry were powered predominantly by coal. Railway development in the 19th century increased demand for coal further and mines therefore had to be dug deeper.

The early part of the Industrial Revolution transformed Scotland from a relatively rural, agricultural economy to a new modern economy based on the expansion of scientific knowledge and technological development. With this came the growth of new towns and cities as people began to work in factories. In addition to new industries, these advances allowed some of Scotland's oldest industries such as linen weaving to become more efficient. This industrial development, together with the increasing Atlantic trade from Glasgow, formed the commercial backbone of Scotland.

Scotland continued to lead the way with technological advances in the early 1800s as it remained at the cutting edge of the development of heavy industry. In the later years of the 19th century, Clydeside shipbuilding was recognised as the world leader in marine engineering technological advances. An equal reputation was made in locomotive manufacturing, while new heavy engineering such as steel making was expanding.

Other industries such as boiler making, textiles, glass, pottery, and brick making, also flourished, as did a variety of chemical works. To serve the needs of the rapidly growing population centres, whisky distilling and brewing industries were also established. Indeed, at this time, the lowlands of Scotland became one of the world's most industrialised areas.

The industrial achievements of the last two centuries have invariably left a legacy of land contamination as, in common with other countries, it was established practice to dispose of waste by tipping on the land often, but not always, close to the site of production. Poorly managed raw materials, chemicals and fuels led to spills and releases to land. Factories were frequently sited where natural resources could be readily exploited; for example, to produce water power and to abstract water for use in industrial processes and for extractive industries. As a consequence, many of these factories were sited in what are now considered sensitive environmental settings.

Sources of contaminants are not just restricted to early industrial processes. Other sources include:

- inadequate coal mining;
- gasworks;
- waste disposal;
- leaks and spillages;
- deposition from the atmosphere from factory emissions;
- more recent activities such as petrol distribution and dry cleaning.

Different historic processes and land uses have affected the land with different substances. Table 1 lists some substances frequently associated with the most common historic industries in Scotland.

Table 1: Common historic industries and frequently associated contaminants*

Industry	Frequently associated contaminants
Steel making and rolling	Metals Coke making contaminants such as cyanides, polycyclic aromatic hydrocarbons (PAHs) Fuels and oils
Gas works	PAHs Cyanides Phenols
Shipbuilding	Metal pigments Oils Paints and solvents Asbestos
Textile and dye works	Metals Chlorinated and non-chlorinated solvents Pesticides
Oil refining and bulk storage	Fuel oils (e.g. aviation, diesel, petroleum) Organo lead compounds

* This list of contaminants is not exhaustive.
Source: Department of the Environment's Industry Profiles, 1995

1.5 Extent of the challenge

Various estimates have been made of the extent of the problem created by this historical legacy of industrialisation but to date there has not been a comprehensive review of data either in the UK or for Scotland. A variety of reports provide general estimations of land affected by contamination as well as vacant and derelict land.

1.5.1 UK Contaminated Land Report

In its report Contaminated Land published in 1993, the Parliamentary Office of Science and Technology referred to expert estimates of between 50,000 and 100,000 potentially contaminated sites across the UK, with estimates of the extent of land ranging between 100,000 and 200,000 hectares representing between 0.4–0.8% of the total UK land area.

The report did comment, however, on international experience, which suggested that only a small proportion of potentially contaminated sites posed an immediate threat to human health and the environment.

More recently, the Environment Agency has estimated that there may be some 300,000 hectares of land affected by industrial activity in England and Wales which may be contaminated, representing approximately 2% of the land area in England and Wales.³

³Indicators for Land Contamination, Science Report SC030039/SR, Environment Agency, August 2005.

1.5.2 Scottish Vacant and Derelict Land Survey

The Scottish Government undertakes statistical surveys of Scotland's vacant and derelict land, a proportion of which will also be affected by contamination.

The latest annual Scottish Vacant and Derelict Land Survey (SVDLS) found that the total amount of derelict and urban vacant land in Scotland increased slightly from 10,696 hectares in 2002 to 10,832 hectares in 2008 – a net increase of 136 hectares.⁴ Six local authorities – North Lanarkshire, Glasgow City, North Ayrshire, Highland, Renfrewshire and Fife – together contain 63% of all recorded derelict and urban vacant land.

The SVDLS provides useful information on vacant and derelict land but has limitations with regards to estimations of the amount of potentially contaminated land. The 2005 survey was the last to try to collate information in general terms on whether the land was either known or suspected to be affected by contamination. It recorded that 171 derelict sites covering 1,186 hectares were known to have contamination. The contamination status of 9,383 hectares of urban vacant and derelict land (89% of the total) was unknown.⁵

However, the survey returns identified some inconsistencies with the interpretation of "contaminated land" being used by local authorities and so these figures may not be a true representation of the extent of derelict and urban vacant land that is affected by contamination.

1.6 Scottish Government policies

At the core of Scottish Government policy is the concept of sustainable development where housing, leisure facilities, industry, power generation and all other aspects of our society are carried out in a way that minimises the potential environmental impacts while maximising benefit for current and future generations. Sustainable development is also an integral part of Scotland's public services (including SEPA and local authorities).

Scottish Government policy acknowledges that land contamination hinders the pursuit for sustainable development. Its objectives with respect to land contamination are to:

- ensure that land is suitable for its current use by identifying and removing unacceptable risks to human health and the environment;

- ensure that land is made suitable for any new use by assessing the potential risks from contamination before planning permission is given for the development and, where necessary, remediating the land before the new use commences to avoid unacceptable risks to human health and the environment;
- limit requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment from the current use or future use of the land for which planning permission is being sought.

These three objectives underlie the "suitable for use" approach to the remediation of land affected by contamination, which the Scottish Government considers is the most appropriate approach to achieving sustainable development in this field. Implicit in this approach is the use of risk-based assessments, ie seeking action only where contamination is presenting an unacceptable risk rather than requiring action simply on the basis of contaminants being present.

Government policy is clear that the risks need to be addressed on a site-by-site basis due to the different circumstances and risk scenarios at each site.

Many Scottish Government policies have a direct or indirect influence on deciding whether to remediate land or not. Other policy interests (eg biodiversity) may be affected by decisions to remediate. A number of these policies are summarised below.

1.6.1 Sustainable development

As part of the Scottish Government's commitment to sustainable development, land use development management policies are in place to promote the reuse of vacant, derelict and brownfield land in preference to greenfield land. Similarly, the Scottish Government is committed to securing the remediation of land affected by contamination that is creating unacceptable risks to public health, biodiversity and/or property.

⁴ Scottish Vacant and Derelict Land Survey 2008, Statistical Bulletin Planning Series PLG/2009/1, January 2009.

⁵ Scottish Vacant and Derelict Land Survey 2005, Statistical Bulletin Environment Series ENV/2006/1, January 2006.

This commitment to sustainable development is reflected in the new purpose and the five strategic objectives announced following the Scottish Parliamentary elections in May 2007. Dealing with land contamination supports the strategic objectives and their interactions in the following ways:

- **Greener.** Environmental improvements will result from dealing with contamination of soils and the water environment. It will also help previously used land to be redeveloped reducing pressure to use greenfield land.
- **Safer and stronger.** Remediating land that is derelict as a result of contamination issues will help affected communities flourish, offering improved opportunities and a better quality of life.
- **Healthier.** Unacceptable risks to the health of Scottish residents will be addressed through remediating land causing such risks.
- **Wealthier and fairer.** Remediating land contamination will remove barriers to development and stimulate growth in affected communities.
- **Smarter.** Dealing with the scientific and complex issues concerning land contamination can develop transferable skills which could potentially create employment opportunities.

Where land is being remediated as part of a redevelopment scheme further sustainability benefits can be realised through careful selection of the remediation methods. Such benefits include:

- less waste being sent to landfill;
- consequential reductions in the amount of natural materials that would have otherwise been used;
- lower emissions to the atmosphere due to fewer vehicle movements where materials are being retained on site where suitable.

1.6.2 New homes

Scottish Ministers have set a target of building 35,000 new homes per year until 2015. The Government's preference is that these homes are built on brownfield rather than greenfield sites. In achieving this target, some of these homes will be located on sites that have undergone remediation works such that the land is suitable for housing development.

Unlike England, Scotland does not have a specific national target for the number of houses built on brownfield land. This is because the availability of brownfield land varies across the country.

1.6.3 Habitat and biodiversity

Brownfield land (including land affected by contamination) that has been left undisturbed for some time is often colonised by vegetation through natural processes. The cycles of disturbance and abandonment to which such areas have often been subjected can create areas of considerable nature conservation interest, which often goes unrecognised.

For example research by Buglife⁶, the invertebrate conservation charity, found that brownfield sites can have as many associated rare or scarce invertebrate species as ancient woodlands. Buglife also noted that, while not all brownfield sites are important as habitats for invertebrates, many do support significant reservoirs of biodiversity.

In addition to the lack of disturbance of many sites affected by contamination, the contamination itself and associated lack of nutrients can create conditions attractive to many plant species. Considerable areas of woodland, scrub or wetland – all valuable habitats for wildlife – may develop over time on some contaminated sites. Another component of many of such sites – the bare, open ground – provides a valuable habitat for lichens, insects, birds, reptiles and small mammals.

The pressure to remediate land affected by contamination can therefore put at risk the biodiversity of such sites. Conversely, the remediation of such sites may also provide opportunities for habitat creation or enhancement. Careful design can create both areas of high value for biodiversity and opportunities for its enjoyment by local people. Remediation schemes must therefore strike a balance between managing identified risks and conserving that which is of particular interest while creating new habitats.

⁶ www.buglife.org.uk

2 Overview of Part IIA

This section provides only a summary of Part IIA and does not cover all its aspects. The Part IIA regime is technically complex and complete understanding requires considerable experience across a broad range of disciplines.

2.1 Introduction

Legislative provision for the contaminated land regime was made through section 57 of the Environment Act 1995,⁷ which inserted Part IIA into the Environmental Protection Act 1990. Following devolution of responsibility for environmental matters to the Scottish Parliament in 1999, regulations were made to provide legislation for Part IIA in Scotland.⁸ These regulations came into force on 2000 and were supported by Statutory Guidance.⁹

These regulations and the associated Statutory Guidance were amended in 2005 and 2006 respectively following the introduction of the Water Environment and Water Services (Scotland) Act 2003.^{10,11} These amendments introduced the concept of "significance" to the definition of water pollution and allowed terminology to be brought into line with the 2003 Act by replacing "controlled waters" with "water environment".

An important aspect of the contaminated land regime is that it deals with land which, in its **current use**, is presenting a significant risk to health or the environment. The regime provides a route for remediation of sites which may perhaps have low development value or where there are other barriers to redevelopment. The Part IIA regime requires sites to be prioritised to ensure those posing the most pressing and serious risks are tackled first.

2.2 Key legislative principles

Part IIA provides a regulatory regime for the identification and remediation of land contamination. As such it provides the benchmark against which land contamination should be addressed by ensuring that the land is suitable for its current use.

The legislation and Statutory Guidance define contaminated land for the purposes of Part IIA and

require local authorities to inspect their areas from time to time for the purpose of identifying contaminated land. Where the land fulfils certain criteria, it should be determined to be contaminated and action taken to secure its remediation.

Under certain circumstances (as described in the 2000 regulations), contaminated land may be designated as a "special site" whereby SEPA becomes the enforcing authority.

The key principles of the legislative framework are to:

- take a strategic approach to the identification and remediation of contaminated land;
- deal with land contamination issues in an orderly and controlled fashion, tackling the most pressing and serious problems first;
- maintain a risk-based approach, requiring remedial action only where the contamination poses unacceptable risks to human health or the environment and where such remediation would be considered to be reasonable;
- provide clarity in the law which would then assist in the development of an efficient market in land that is contaminated and which has been remediated.

The regime is based on the polluter pays principle, requiring the enforcing authority to identify **appropriate persons** who are liable for remediation.

The standard of remediation required is based on a number of factors including:

- the cost of any scheme;
- the seriousness of the harm or pollution that is being caused.

The appropriate person is usually given the opportunity (unless urgent action is required) to develop a **Remediation Statement** setting out what they will do and by when.

Where necessary, remediation can be enforced by means of a **Remediation Notice**.

⁷ www.opsi.gov.uk/Acts/acts1995/ukpga_19950025_en_6

⁸ The Contaminated Land (Scotland) Regulations 2000

⁹ SERAD Circular 1/2000, July 2000.

¹⁰ The Contaminated Land (Scotland) Regulations 2005

¹¹ Environment Protection Act 1990: Part IIA Contaminated Land Statutory Guidance: Edition 2, Paper SE/2006/44, May 2006.

In some circumstances, remediation may not be considered to be reasonable at that time and a Remediation Declaration may be issued by the enforcing authority.

2.3 Roles and responsibilities

Local authorities are the lead regulator under Part IIA. They have duties to inspect their areas to identify contaminated land and to designate special sites. They act as the enforcing authority for non-special sites to secure remediation. They also have a duty to maintain public registers of contaminated land and have powers to recover the cost of remediation they undertake themselves.

SEPA is the enforcing authority for "special sites", securing remediation for such sites, and maintaining a public register. SEPA has similar powers to recover costs for remediation it undertakes. SEPA has a duty under the Act to:

- provide site-specific advice to local authorities;
- report on the state of contaminated land – the main purpose of this report.

In deciding whether land is contaminated land, the local authority should ensure that:

- it adopts an approach consistent with that adopted by other regulatory bodies;
- it benefits from the experience and expertise available in those bodies.

There are specific requirements for local authorities to consult with:

- Scottish Natural Heritage (SNH) where an ecological system effect is indicated;
- SEPA in the case where pollution of the water environment is being considered.

Local authorities may also choose to consult with other organisations where their expertise may be of assistance in the decision making process. SEPA is responsible as the enforcing authority for the investigation, identification, characterisation and regulation of remediation of radioactively contaminated land. Its progress in performing these duties will be included in subsequent state of contaminated land reports.



2.4 Local authority inspection strategies

Under Part IIA, local authorities are required to cause their areas to be inspected from time to time to identify contaminated land. The Statutory Guidance published in 2000 requires local authorities to:

- develop and publish by October 2001 a strategic approach to the inspection of land in their area for the purposes of identifying contaminated land;
- keep this strategy under periodic review.

Periodic review of the inspection strategy remains a requirement in the 2006 Statutory Guidance.

The strategic approach to the inspection duty must:

- be rational, ordered and effective;
- be proportionate to the seriousness of any potential risk;
- seek to ensure that the most pressing and serious problems are located first;
- ensure that resources are prioritised to investigate areas where the local authority is most likely to identify contaminated land;
- ensure that the local authority identifies requirements for the detailed inspection of particular areas of land efficiently.

The strategy indicates how the local authority will identify potentially contaminated areas and how these will be prioritised to be assessed in more detail.

Sites that are potentially contaminated land should be identified as a result of information gathered by the local authority and information received from other regulatory bodies, organisations or individuals.

2.5 Formal determination of contaminated land

For the purposes of Part IIA, contaminated land is defined as:

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

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused."

By virtue of the definition, there will be land affected by contamination that does not meet the statutory definition. The definition relies heavily on the concept of a significant pollutant linkage (see section 2.6), ie the presence of a source of contamination that has the

potential to impact on a receptor by means of a pathway to an extent that the resultant harm or pollution would be considered to be significant.

If a local authority does not have sufficient information to arrive at a decision, then it may undertake further detailed investigations of the land.

Local authorities are required to give notice of land determined as contaminated land (or designated as a special site). Notifications of contaminated land must also be placed on a public register held by the local authority.

2.6 Risk assessment framework

The contaminated land regime is centred on a risk-based framework for dealing with land affected by contamination. This framework recognises that, while contamination can be present, it has to be present at such concentrations and in such circumstances that it has the potential to cause significant harm or pollution to people or the wider environment, based on the current use of the land.

There are three elements to any risk:

- **Source** – a substance which is in, on or under the land and has the potential to cause harm or cause pollution of the water environment;
- **Receptor** – in general terms, something that could be adversely affected by a contaminant, eg a person, an ecological system or a water body as defined in the statutory guidance;
- **Pathway** – a means by which a receptor can be exposed to, or affected by, a contaminant.

The term **pollutant linkage** describes the inter-relationship between a particular source and receptor, and the pathway between them. All three elements of the linkage must therefore be present for a risk to exist. If one of the elements of the pollutant linkage is absent, there can be no risk.

A risk assessment represents the structured gathering of information in order to form a judgment about the risks associated with contaminants at a site given its environmental setting. It is built around an iterative approach whereby phased information gathering enables a progressively more detailed picture, or **conceptual site model**, of the site to be formulated.

The conceptual site model is refined as further information is obtained, eg through desk studies, walkover surveys and intrusive investigations. It is important that the actual problem is defined before the risks are considered in detail in order that all sources, pathways and receptors, and potential linkages between them, are considered. Figure 2 shows an example of possible pollutant linkages in a simplified conceptual model of a site.

Once the presence of the pollutant linkage has been established and a risk identified, the next step is to determine whether it is significant or not. Only sites that have significant pollutant linkages can be determined as contaminated land.

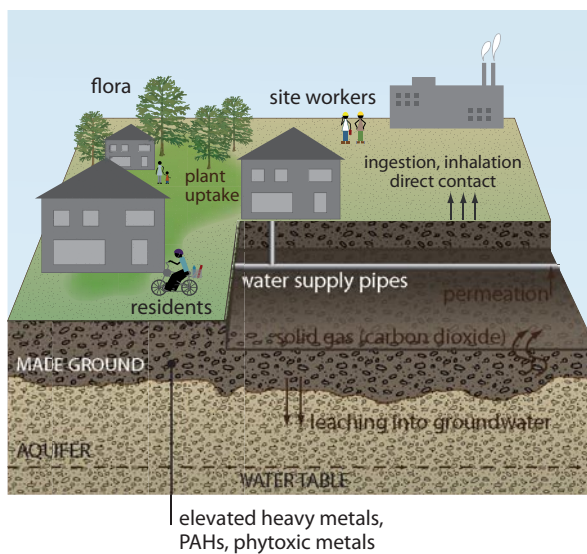


Figure 2: Simple conceptual site model (sourced from NHBC guidance, 2008)

2.7 Remediation

Remediation is central to Part IIA as it is the means by which contaminated land can be made suitable for its current use, whereby it no longer causes, or is unlikely to cause, significant harm or pollution of the water environment.

Remediation basically consists of management of the unacceptable risks identified. The definition of remediation given in the Act is wide and includes assessment of contaminated land and/or carrying out works on land to restore the land and/or inspection and monitoring. The cost of remediation is borne by the appropriate person (when identified).

Further information on remediation can be found in Chapter C of the Statutory Guidance.¹²

2.8 Funding arrangements

Since the regime was introduced local authorities have received some £60 million in funding to assist them in performing their contaminated land duties. Grants were made available for remediation of specific sites and for contaminated land activity more generally.

In 2008 representatives of national and local government made a commitment to move towards Single Outcome Agreements for all of Scotland's local authorities. Single Outcome Agreements are agreements between the Scottish Government and each local authority that set out how each will work in the future towards improving national outcomes for the local people in a way that reflects local circumstances and priorities. These agreements will be a major driver for setting local authority funding levels. As this early stage, it is not yet clear if this significant change in funding will affect the implementation of Part IIA in Scotland.

¹² Environmental Protection Act 1990: Part IIA Contaminated Land, Statutory Guidance: Edition 2, Paper SE/2006/44, May 2006.

3 Other mechanisms for dealing with and preventing land contamination

3.1 The planning system and development management

Planning and development management has a key part to play in addressing the problem of historical land contamination. Advice is provided by the Scottish Government to local authorities in Planning Advice Note 33 (PAN 33) Development of contaminated land.

Although PAN33 precedes more recent changes to the contaminated land legislation and statutory guidance in relation to the water environment, it nevertheless provides advice to planning authorities on:

- the implications of the contaminated land regime;
- the development of land affected by contamination;
- the approach to land contamination in development plans;
- the determination of planning applications when a site is or may be affected by contamination;
- sources of further information and advice.

Land contamination issues are likely to involve a number of local authority functions including:

- planning;
- environmental health;
- building control;
- estates;
- engineering;
- economic development.

Close co-operation between those parts of an authority responsible for implementing the requirements of the Part IIA regime and those responsible for land use planning is vital.

3.1.1 Development plans

In preparing development plans, the Scottish Government expects planning authorities to encourage and promote the reuse of brownfield land including sites affected by contamination. The best way of minimising any associated risks is to ensure that the potential for contamination to be present at a site is identified at an early stage.

Planning authorities can help front-load¹³ the development planning system by ensuring that they have sufficiently robust information to:

- help them set out priorities for the reclamation and reuse of land affected by contamination;
- inform developers of the availability of sites and the potential constraints associated with them.

3.1.2 Planning and Development management

Land contamination is a material consideration for any planning application where land is known or suspected to be contaminated.

Planning authorities have a duty to ensure that land proposed for development is suitable for use. This entails:

- assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before granting permission for a development;
- where necessary, remediating the land before the new use commences to avoid unacceptable risks to human health and the environment.

The Part IIA provisions essentially underpin the standard of remediation that is required where a change of use is proposed. PAN33 advises that it is in a developer's interest that land is not subsequently determined as contaminated land at some point in the future.

The potential increased value of the land following development can be used to offset the cost of investigating and remediating that land. This is a perfectly acceptable approach to tackling contaminated land and is consistent with Scottish Government policy with regard to sustainable development.

3.1.3 Second National Planning Framework

The Second National Planning Framework (NPF2) recognises that over 10,000 hectares of land across Scotland is classed as vacant or derelict. Some 3,500 hectares (34%) has been unused for at least 20 years.

¹³ "Front loading" is community involvement in the production of Local Development Documents to gain public input and seek consensus from the earliest opportunity (Planning Portal Glossary).

In parts of the Lowlands, particularly in west central Scotland, the closure of older industries has left degraded landscapes, poor environments and significant areas of vacant and derelict land, some of which is affected by contamination.

The Scottish Government wants to see this land brought back into productive use for housing, for economic purposes and to create attractive environments.

Much progress has already been made but more can be done. Some £36.6 million has been allocated for the period 2008–2011 to the Glasgow, Lanarkshire, Dundee and Highland local authorities to address the largest concentrations of vacant and derelict land.

To facilitate the reuse of brownfield sites and the regeneration of urban areas, the Scottish Government intends to provide a route for the remediation of sites of low development value or where there are barriers to redevelopment.

National planning policy encourages the reuse of previously developed land in preference to greenfield land. However NPF2 recognises that, while the highest levels of growth are expected in the east of Scotland, vacant and derelict land is heavily concentrated in the west. NPF2 therefore signals the potentially much greater scope for accommodating new development on previously used land in Glasgow and the Clyde Valley than in Edinburgh and the Lothians, Stirling and the North East, where a higher proportion of new development will have to be on greenfield sites.

3.1.4 Scottish Planning Policy 3: Planning for Homes

Scottish Planning Policy 3 (SPP3)¹⁴ sets out the Scottish Government's policy on:

- the identification of housing requirements;
- the provision of land for housing;
- the delivery of homes through the planning system.

A key objective is to provide policy guidance on the creation of high quality developments, which support the development of sustainable communities.

The selection of appropriate sites and the amount of land needed to meet the housing requirement should in principle consider the reuse of brownfield land before development on greenfield sites, taking account

of the planning authority's balanced consideration of various factors.

3.1.5 Fiscal incentives

Developing land that is affected by contamination has additional challenges and hence has additional costs and associated liabilities. Fiscal incentives have therefore been introduced to encourage developers and land owners to proactively tackle land affected by contamination fiscal incentives.

Land remediation tax relief gives a corporation tax deduction of 150% of expenditure (that meets specific qualifying criteria) for the costs of decontaminating land.

Landfill tax is applied to wastes disposed of at landfill sites and, until recently, an exemption was available in relation to contaminated soils. However, changes in Government policy aimed at diverting waste away from landfill and encouraging more sustainable ways of remediating land mean that justification for the exemption has been called into question and no new applications have been accepted since 30 November 2008. The final date for disposals qualifying for the exemption is 31 March 2012.

3.2 Preventing new contamination

Environmental regulatory regimes such as Waste Management Licensing (WML) and Pollution Prevention and Control (PPC), are designed to prevent contamination in the first place as a result of current or new processes or activities.

Where land contamination does occur, the operator of activities covered by such authorisations is required to remediate any impacted land and waters back to a satisfactory state prior to formally surrendering the authorisation.

For current activities covered by the Water Environment (Controlled Activities) Regulations 2005 that result in land being affected by contamination that is causing, or is liable to cause, pollution of the water environment, SEPA may enforce remediation.¹⁵

3.3 Voluntary remediation of land affected by contamination

Voluntary remediation may also be carried out without enforcement as the incentive of profit or possibility of blight can be powerful motivators.

¹⁴ Revised in 2008.

¹⁵ See paragraph 7.7 of Authorisation of activities under the Controlled Activities Regulations (issued by SEPA in December 2008 and available from its website).

Generally, for land that is historically contaminated then the owner (who may not necessarily have caused the contamination) or the polluter may carry out voluntary remediation to:

- sell the land on, eg to gain a better market value than if it was still considered contaminated;
- reduce potential environmental liabilities, eg prevent the contamination spreading to off-site receptors;
- avoid regulatory intervention, eg to deal with the problem before being required to do so by an enforcing authority.

3.4 New legislation

The requirements of various European Union directives have produced additional drivers for remediation of contaminated land.

3.4.1 Water Framework Directive and the Groundwater 'Daughter' Directive

The Water Framework Directive (WFD) has already led to changes in contaminated land legislation and accompanying statutory guidance to bring it in line with the Directive. Further changes may be required.

The WFD and its daughter directive¹⁶ set a number of objectives for the water environment. Of particular relevance for land contamination are requirements to:

- prevent or limit releases of pollutants to the water environment;
- achieve good water quality status;
- prevent further deterioration.

The Water Environment and Water Services (Scotland) Act 2003 (WEWS) contains provisions to enable the measures required to achieve the WFD's objectives in Scotland. It will be further amended in 2009 to allow the requirements of the Groundwater Directive to be met.

3.4.2 Environmental Liability Directive

The Environmental Liability Directive (ELD) will be implemented in Scotland in 2009. It acts in a different way to Part IIA in that the damage must be caused by a current activity.

The ELD aims to prevent and remediate damage to protected habitats and species, and land

contamination that threatens human health and water resources. It is not retrospective and so applies only to damage that occurs after the implementation date.

The ELD covers:

- specific types of damage to protected species and natural habitats;
- damage to water or risks to human health from contamination of land.

Action is required in response to the most significant damage.

When thinking about remediation for land damage we move away from the newer concepts of primary, complimentary and compensatory, introduced in the regulations to deal with incidents of water damage, and move towards a concept more akin to the existing contaminated land regime. As a minimum, remediation for land damage should remove, control, contain or diminish any contaminants. In effect the regulations are asking operators to ensure that the land no longer poses a risk to human health.

Where damage relates to land that could have an unacceptable risk to human health the level of remediation is linked to the current use of that land.

The scope of the ELD is wider than that of the contaminated land regime. For example:

- there is a requirement for operators to notify the competent authority of damage and undertake the necessary measures;
- it explicitly covers damage from micro-organisms.

It is possible that additional sites will be remediated through this legislation, although the regulatory impact assessment which accompanies the draft regulations suggests that this will be a small number – possibly as few as five cases per year.

3.4.3 Soil Framework Directive

The Scottish Government has also consulted on the proposed EU Soil Framework Directive. The details of the Directive have changed a number of times and are not yet finalised or agreed.

The Directive intends to address most aspects of soil quality including contamination and may result in further changes to Scottish legislation dealing with historical land contamination (Part IIA in particular).

¹⁶ Groundwater Directive (2006/118/EC)

4 Progress in dealing with land contamination

4.1 Data collection process

The data reported in this section were compiled principally from information supplied by local authorities supplemented by information held by SEPA.

Because the data were collected using different methods, caution is necessary when comparing differences between years. Data from 2005–2007 were part of the local authorities key performance indicators while 2007–2008 data were based on a separate questionnaire completed by local authority contaminated land officers. More details of the data collection exercise are given in Appendix A.

4.2 Part IIA inspection strategies

An inspection strategy is a statutory requirement that sets out how the local authority will inspect its area to identify land that meets the definition of contaminated land.

All Scottish local authorities have completed and published an inspection strategy.

Twenty-one local authorities have published their inspection strategies on their website even though this is not a statutory requirement. Printed copies of all inspection strategies can be obtained from the addresses given in Appendix B.

4.3 Prioritisation of sites for inspection

In 2000, local authorities started the process of prioritising sites with the potential for contamination to be present according to guidance issued by the then Scottish Executive.¹⁷

The first stage of the prioritisation process typically involved local authorities assessing available historical maps to locate land with the potential to be contaminated (eg former gas works or landfill sites). Each local authority adopted its own method eg purchasing commercially available datasets or using in-house information.

Local authority returns up to 31 March 2008 estimated that there was up to 67,000 sites (82,587 hectares) in Scotland that were assessed as having the potential to have some form of contamination present.

The next stage was to undertake an initial prioritisation of these sites. This process varied by local authority depending on the availability and accessibility of data, but typically involved the use of geographic information systems (GIS) and a process of scoring. Scoring criteria related to factors such as:

- the industry type;
- proximity to Part IIA receptors (eg humans, water environment, ecology, property);
- possible pathways (eg underlying geology, proximity of watercourses).

The purpose of the process was to rank sites in order of priority to allow the local authority to determine which sites should be inspected first.

4.4 Inspections of land under Part IIA

Following the initial prioritisation, sites identified as potentially being contaminated land are typically inspected through a phased and ongoing process. This process normally involves constant re-adjustment of prioritisation.

Table 2 provides examples of the usual stages of inspection.

Inspection stage	Description
Site walkover/inspection	This typically involves walking over the site to establish if any contamination is evident as well as to establish or confirm the potential pollutant pathways or receptors.
Desk study	This stage builds on the stage above but with a greater degree of research, the development of an initial conceptual site model (CSM) and a qualitative risk assessment.
Site/ground investigation	Site/ground investigation involves intrusive works, often undertaken in stages where the first step is to determine if any contaminants are present. Investigations normally involve soil, water and gas sampling and testing. Assessment includes the testing or refinement of the CSM, and either qualitative or quantitative risk assessment.

Table 2: Types of further inspection

¹⁷ Contaminated Land Inspection Strategies: advice for Scottish local authorities, July 2001.

For some sites, all the stages identified in Table 2 must be undertaken before an accurate judgement can be made of the risk that the contamination may present. The work progressively becomes more complex at each stage, requiring more resources.

The result of an inspection (of any type) can be one of three outcomes:

1. A decision can be made that the land meets the definition of contaminated land.
2. A decision can be made that the land does not meet the definition of contaminated land.
3. No decision can be made on whether or not the land meets the definition of contaminated land and further inspection is required. Sometimes no further inspection is needed, but that decision cannot be made based on a lack of guidance or other technical information, for example lack of an appropriate toxicological reports.

Section 1 of the questionnaire sent to local authorities in 2008 covered inspection of the local authority area between 14 July 2000 and 31 March 2008. An inspected site was expected to be recorded only once even where new information came to light and the site had been assessed a second or possibly third time, ie the question was specific to individual sites. In compiling their answers, local authority land contamination officers were asked to exclude any high level reviews of a complete local authority area or sub-area, for example that may have formed part of a prioritisation exercise.

Of the 67,000 sites estimated from previous returns as requiring inspection, 13,396 sites (20%) have or are in the process of being inspected under Part IIA using one or more of the inspection techniques outlined in Table 2. Interrogation of previous local authority returns suggests that it is possible that a further 13,400 sites (ie a further 20%) are likely to have been inspected as a result of a planning application rather than directly as part of the prioritisation process. That leaves some 40,200 sites (60%) estimated as still requiring inspection (Figure 3).

Estimated number of total sites inspected

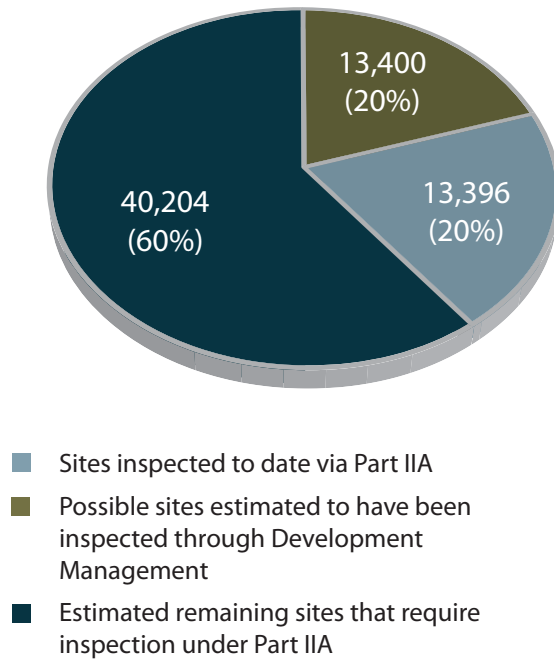


Figure 3: Estimated number of total sites inspected (14 July 2000–31 March 2008)

The results from the questionnaire indicate that the majority (67%) of inspections undertaken to date have been site walkovers to establish or confirm whether land is potentially contaminated and so warrant further inspection (Figure 4). Such walkovers provide a quick and effective mechanism of confirming details from the initial prioritisation process and hence confirm the need to undertake further more complex inspection. It is worth mentioning that Part IIA is an iterative process and once all the sites have been investigated, they will be revisited in accordance with the local authorities' inspection strategy.

Site inspection types

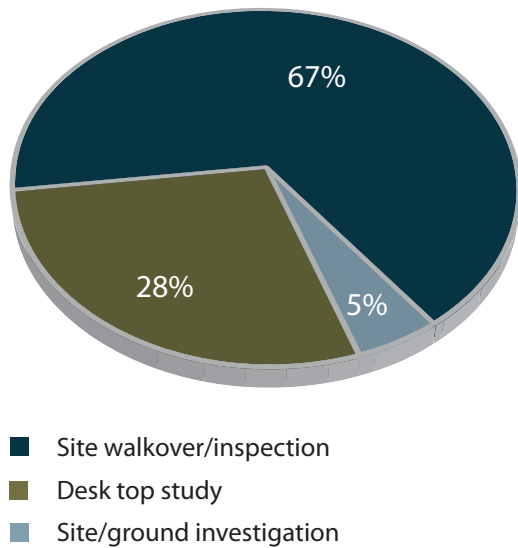


Figure 4: Inspection types as percentage of total number of sites inspected (14 July 2000–31 March 2008)

Approximately 28% of the sites identified for inspection had been taken to the desk study stage where more information is gathered about potential pollutant linkages.

Approximately 5% of the sites had progressed to the site investigation stage where such pollutant linkages are confirmed or otherwise.

An examination of previous local authority returns since 2005 indicated that the numbers of inspections vary year-on-year but average at around 3,200 per year.

It is evident from the returns that each local authority has implemented its inspection duties in different ways. This is also apparent when comparing individual inspection strategies. In general, many local authorities have conducted low level inspections on a large number of sites while others have concentrated on fewer sites inspecting them in greater detail.

In general, a higher number of low level inspections were conducted in previous years. This may indicate that local authorities have concentrated their resources latterly on more detailed inspections of a subset of complex sites.

4.5 Formally determined contaminated land

For land to be formally determined as contaminated land, it must meet the statutory definition set out in the legislation. The local authority must act in

accordance with the Statutory Guidance to make any determination (see Section 2.5).

Determination can be a long and complex process. This goes some way towards explaining why a total of only 13 sites (53 hectares) have been statutorily determined as contaminated land under Part IIA – the first of these being determined in June 2003 (Figure 5).

Of these 13 determined sites, two sites and a portion of one further site (a total of three) were subsequently designated as special sites and thus fall within SEPA's jurisdiction.

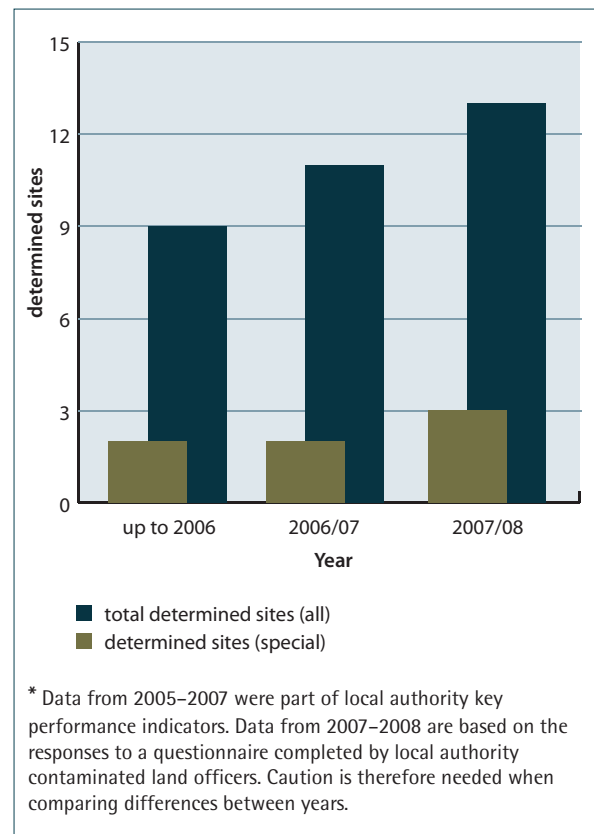


Figure 5: Cumulative totals number of determined sites*

The sites that have been formally determined as contaminated land are located in the local authority areas of Dumfries and Galloway, Moray, West Dunbartonshire, Dundee, Aberdeenshire and Highland. Each local authority has a public register (see Section 4.6) where relevant information relating to each site, including its location, can be viewed.

The data provided by the local authorities indicates that most contaminated land sites were determined based on significant pollutant linkages to the water environment; organic contaminants were the most commonly cited contaminant. Previous uses of the sites included gas works, landfills and a refinery.

4.6 Public registers

The Contaminated Land (Scotland) Regulations 2000 set out what information local authorities are required to place on a public register. This information relates to:

- the location and extent of any formally determined contaminated land sufficient to enable it to be identified;
- the name and address of the person who claims they have carried out remediation;
- a description of anything claimed to have been done by way of remediation and the period within which it is claimed each activity was performed.

Appendix B contains a list of local authority addresses where the public register relating to the contaminated land regime can be viewed.

The prescribed information for special sites where SEPA is the enforcing authority, please go to the appropriate regional office for the area in which the contaminated land is situated.

4.7 Remediation activity under Part IIA

Where land has been formally determined as contaminated land, an appropriate person can produce a Remediation Statement which describes how they intend to remediate the land and in what timeframe. This allows the land to be remediated voluntarily but still within the regulatory regime and removes the need for the enforcing authority to serve a Remediation Notice.

One site may have a number of Remediation Statements, each describing how particular significant pollution linkages will be dealt with or each associated with a different appropriate person. Local authorities or SEPA can produce Remediation Statements where they are carrying out the remediation. The enforcing authority subsequently keeps the situation under review to ensure that the specifications of the Remediation Statement are carried out.

Of the 13 determined contaminated land sites, five Remediation Statements have been produced, four by the local authority and one by the site owner. Of those local authorities that have determined contaminated land, none has served a Remediation Notice on an appropriate person to date.

Of the three special sites designated for SEPA regulation, no Remediation Notices have been served to date.

Where remediation is considered to be unreasonable in accordance with the Statutory Guidance or where the legislation prohibits the local authority from serving a Remediation Notice at a site, a Remediation Declaration can be produced. As with Remediation Statements, a number of Declarations can relate to any one site.

Six Remediation Declarations have been published.

A summary of the remediation documents relating to determined contaminated land is given in Table 3.

Document type	No.	Description
Remediation Notice	0	Served by the local authority on an appropriate person requiring remedial works. Notices go on a public register.
Remediation Statement	5	Account of agreed remedial action required prepared by the appropriate person or those undertaking remedial works. Undertaken on a voluntary basis, thus negating the need for a Remediation Notice. Statements go on a public register.
Remediation Declaration	6	Describes actions that are not undertaken (possibly because remediation is not reasonable or something prohibits serving of a Remediation Notice). Declarations go on a public register.

Table 3: Progress with remediation under Part IIA (14 July 2000-31 March 2008)

4.8 Remediation activity through development management

On the basis of local authority returns, it is estimated that the total number of sites remediated within Scotland through development management from 1 April 2005 to 31 March 2008 is 807 (1864 hectares). It is possible that a small proportion of these may actually have been due to voluntary remediation.

The Part IIA regime underpins the approach taken through development management and has served as a driver for such remediation activity since 2000. However it is recognised that remediation activity was being progressed for many years before the introduction of Part IIA, with the original planning advice on development on contaminated land having been published in 1988.

4.9 Remediation activity trends

The following data are based on information supplied by local authorities through the SEPA questionnaire and previous Government performance returns since 2006 which cover the period from 1 April 2005 to 31 March 2008. No information is available for the years before this period.

The quality (accuracy and reliability) of these data is known to vary as a result of the different ways and extent to which individual local authorities collect and record such data. However, the data are included to illustrate general trends in remediation activity over the last few years.

Trends in historical data from local authorities highlight a recent sharp decrease in the number of recorded sites being remediated within development management – from a maximum of 400 sites in 2006–2007 to 74 sites in 2007–2008 (see Figure 6). There has been a similar recent decline in the total area of remediated land (see Figure 7). However, this decrease may be indicative of the difference in the data collection exercises and the interpretation of the required response by local authorities.

Although the data suggest that an apparently reduced number of sites were remediated in 2007–2008, there was a high volume of consultations on sites with possible contamination issues during this period, requiring input from contaminated land officers on approximately 4,350 sites.

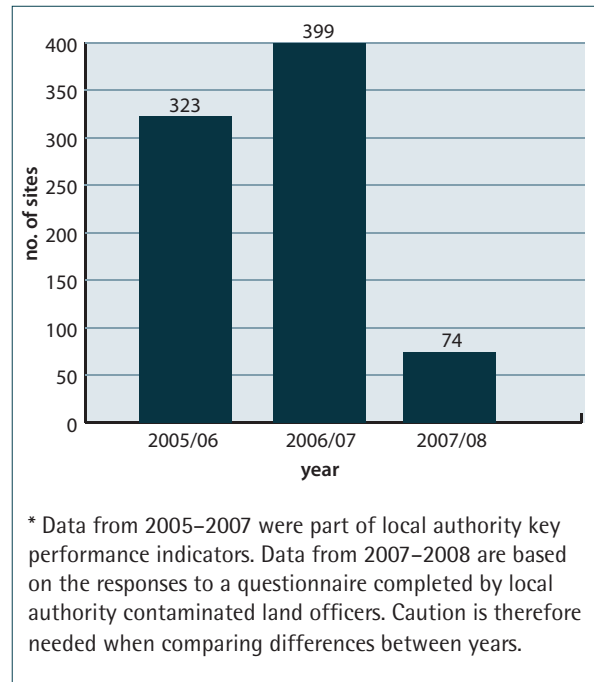


Figure 6: Total number of sites remediated by year (1 April 2005–31 March 2008)*

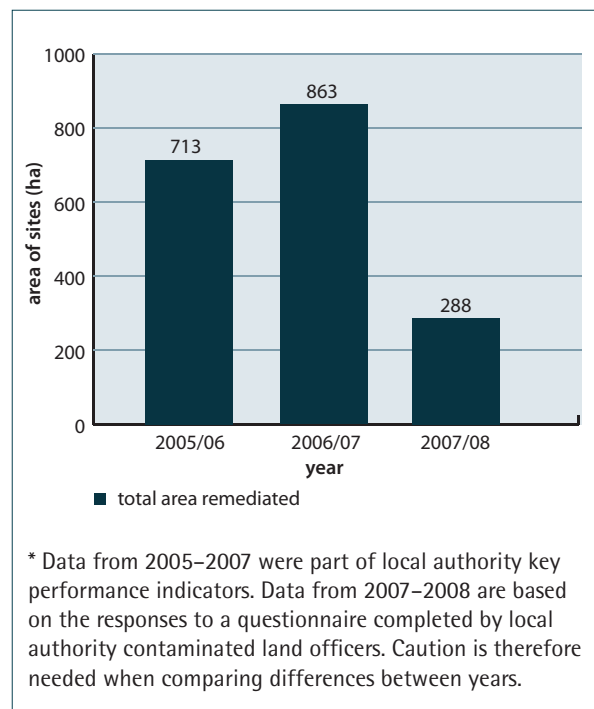


Figure 7: Total estimated area remediated through development management (1 April 2005 to 31 March 2008)*

4.10 Number of staff dealing with land contamination

Local authorities employ 79.6 full time equivalents (FTE) to deal with land contamination. Of these, 33.3 FTE are employed specifically in Part IIA and 46.3 FTE in development management activities. Although the total number of FTE has increased by 15 since 2006, the number employed specifically to implement Part IIA related work has remained fairly constant (Figure 8).

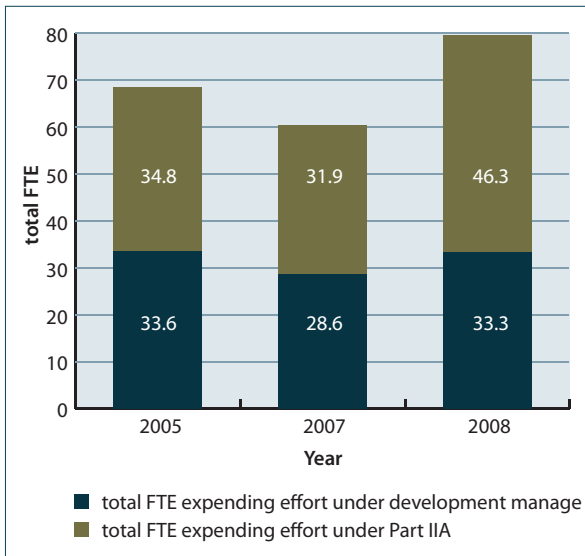


Figure 8: Local authority staff resources employed to deal with land contamination

These figures are an underestimate of the overall resource expended by local authorities on the contaminated land regime and in support of development management. Additional resources are provided via other local authority departments such as planning, building control and legal. On the advice of local authorities this report contains no estimate of this additional resource.

SEPA has 6.5 FTE for contaminated land; one staff member deals principally with contaminated land policy, 0.5 deals with radioactively contaminated land and five deal with regulatory land contamination duties, with their time being estimated to be equally split between Part IIA and development management consultations. Therefore, 2.5 FTE are utilised to implement Part IIA. Additional support is supplied by other SEPA staff members from the Environmental Science and Environmental Protection and Improvement Directorates.

Appendix C gives details of the FTE specifically allocated to the contaminated land regime by individual local authorities and SEPA.

5 Concluding comments and next steps

5.1 Conclusions

Generally, the introduction of the Part IIA regime is believed to have benefited Scotland's people and the environment. It provides a good and robust framework for the identification and remediation of contaminated land although it is recognised that the regime's complexity means it can take several years to go from determination to remediation. The introduction of the regime has raised the profile and awareness of the issues associated with land contamination with land owners, developers, their professional advisors, the general public and regulators. This increased awareness of the issues and legal consequences of not dealing with problem sites has encouraged the investigation and remediation of sites voluntarily and, more importantly, via the planning and development management system.

Local authority data indicate that approximately 67,000 sites (82,034 hectares) require inspection under Part IIA or alternatively to be dealt with as part of the development management system. At the time of the questionnaire, an estimated 27,000 inspections of land (13,396 as a result of Part IIA and an estimated 13,400 through development management) with the potential to be contaminated had already been carried out, or were in the process of being undertaken, equating to an estimated 40% of all such sites. The other 60% of sites will be looked at in accordance with each local authority's inspection strategy.

Progress under Part IIA has resulted in the determination of 13 sites (equivalent to 53 hectares) as contaminated land.

As yet no sites have been remediated under Part IIA. The success of the regime has been to encourage remediation via the planning system.

Since 2005, more than 800 sites have been or are in the process of being remediated through the planning system. The standard to which such sites are remediated ensures that the risks to human health and the environment have been removed or significantly reduced. Although this number appears small compared with the large number of sites requiring inspection, the following should be borne in mind:

- Some inspected sites have no contamination.
- Many sites – possibly a majority of sites inspected – may have contamination present but will not require remediation because there is no significant pollutant linkage present.
- The progress from inspection to remediation can take several years.

The evidence suggests that the most progress in dealing with the legacy of land contamination has been made through the planning system. The Part IIA regime has provided an incentive in encouraging such remediation through planning as well as voluntary action. In circumstances where the planning process cannot effect remediation, Part IIA offers a solution for sites that are posing unacceptable risks to people or the environment in their current use.

5.2 Next steps

This report provides a baseline of information on how Scotland is dealing with land contamination from which future progress can be measured. The number of determinations has been small compared to the potentially large number of sites thought to be contaminated and local authorities may experience a slow down in redevelopment of land as a result of a decline in the housing market.

The planning system has been identified as the predominant mechanism for dealing with land contamination, although improvements could be made to the data collection process to allow greater interrogation of the data in respect to environmental, social and economic benefits. Improved data in this area could also be used to aid spatial development planning.

Where technical difficulties or financial considerations affect redevelopment, or where redevelopment is not desirable or planned in the foreseeable future, the evidence suggests that remediation through Part IIA can be a slow process. Consultation and feedback from local authorities and stakeholders have identified where improvements to the Part IIA implementation process might be made and indicate how the regime may evolve in the future.

A summary of the views of local authority contaminated land officers obtained via the questionnaire is given in Appendix D. In their responses to the questionnaire, the officers called for:

- clearer policy and/or further technical guidance on what constitutes "unacceptable risk" would assist local authorities in their duties relating to contaminated land;
- a higher priority should be given to contaminated land issues within local authorities.

Some of the key areas they suggested for action were:

- facilitate greater consistency in:
 - the approach to the inspection process;
 - the technical assessment of contaminated land;
- review the current mechanisms for implementing the Part IIA regime in terms of:
 - the overall management to meet Government objectives;
 - resources;
 - funding;
- promote greater communication between local authority departments, in particular environmental health, planning, finance and building control;
- promote greater communication between the supporting agencies including:
 - Health Protection Scotland;
 - The Royal Environmental Health Institute of Scotland (REHIS);
 - SEPA; and the
 - The Scottish Government;
- continue to promote contaminated land working groups to share good practice and to work towards achieving greater levels of consistency.

Further work will be required to fully assess the benefits and associated costs of these suggested measures and indeed some steps are already being progressed by the Short Life Working Group (SLWG) to examine the possibilities of closer liaison across the spectrum of interested organisations.

When it was set up in 2008, the SLWG was asked to review at the statement published by the Department for Environment, Food and Rural Affairs (Defra) in July 2008 entitled *Guidance on the Legal Definition of Contaminated Land* and to look at some of the main issues surrounding the Part IIA regime. Local authority contaminated land officers are keen to see the SLWG extended to become a permanent group to facilitate closer working across the contaminated land community in Scotland.

The output of the work carried out by the SLWG will be cross-referenced with the measures suggested by local authority contaminated land officers for consideration by the Scottish Government.

A comprehensive "next steps" report should be commissioned by the Scottish Government to investigate some of the perceived short comings of the regime and to highlight where improvements could be made to assist local authorities in their duties in relation to contaminated land and remediation.



Appendix A: Data collection methods

Data from 2005–2007 were part of the local authority key performance indicators while data for 2007–2008 were based on a separate questionnaire completed by local authority contaminated land officers. Because the data were collected using different methods, caution must be exercised when comparing differences between years.

Data returns

Local authorities were asked to provide information returns in 2005 and 2006. The returns formed part of the local authority's key performance indicators and were mandatory.

The returns were found to be complex and therefore the data collected were of variable quality. Some of these data were interrogated and used to try to illustrate "estimated" trends.

Local authority questionnaire

SEPA organised a local authority workshop to decide on the range of questions for gathering data. The purpose of the workshop was to develop a comprehensive questionnaire which would be used to gather relevant information on land contamination activities carried out by local authorities.

The resulting questionnaire was sent to all Scottish local authorities and SEPA. The questionnaire was completed by a representative of each local authority. It was requested that the person completing the questionnaire should be familiar with the contaminated land regime.

Section 1 of the questionnaire was specific to the contaminated land regime.

Section 2 related to land that was affected by contamination or was suspected of being contaminated, and which was dealt with via development management or voluntarily.

Section 3 of the questionnaire asked local authority land contamination officers to provide views on how they perceived the regime was working.

To demonstrate general trends, certain results of the questionnaire were merged with previous results obtained for the purposes of deriving statutory performance indicators.

All 32 local authorities completed the questionnaire. A summary of the views of the local authority contaminated land officers is given in Appendix D.

Appendix B: Public register addresses

Aberdeen City Council 4th Floor, St Nicholas House Broad Street Aberdeen AB10 1BX	Dundee City Council 1 Highland Chief Way Claverhouse West Industrial Park Dundee DD4 9UA	Glasgow City Council 229 George Street Glasgow Lanarkshire G1 1QU	Scottish Borders Council Environmental Health Rosetta Road, Peebles EH45 8HG
Aberdeenshire Council Gordon House Inverurie Aberdeenshire AB51 3WA	East Ayrshire Council Western Road Kilmarnock East Ayrshire KA3 1LL	Inverclyde Council Safer Communities 40 West Stewart Street Greenock Inverclyde PA15 1YA	Shetland Island Council Grantfield Lerwick Shetland ZE1 0NT
Angus Council Town House, High Street Montrose Angus DD10 8QL	East Dunbartonshire Council The Omnia Building, Westerhill Road Bishopbriggs Scotland G64 2TQ	Midlothian Council Fairfield House, 8 Lothian Road Dalkeith Midlothian EH22 3ZN	South Ayrshire Council 3rd Floor Burns House Burns Statue Square Ayr, Ayrshire KA7 1UT
Argyll and Bute Council Kilmory Lochgilphead Argyll PA31 8RT	East Lothian Council Environmental Protection 2nd Floor, Alderston House Haddington East Lothian EH41 3SF	North Ayrshire Council Environmental Health Cunninghame House Irvine, Ayrshire KA12 8NX	South Lanarkshire Council 1st Floor Atholl House East Kilbride South Lanarkshire G74 1LU
City of Edinburgh Council Chesser House 500 Gorgie Road Edinburgh Midlothian EH11 3YJ	East Renfrewshire Council Capelrig House Capelrig Road Newton Mearns East Renfrewshire G77 6NH	North Lanarkshire Council 453 Main Street Coatbridge North Lanarkshire ML5 3RS	Stirling Council Municipal Buildings Corn Exchange Road Stirling FK8 2HU
Clackmannanshire Council Environmental Health Kilncraigs Greenside Street Alloa Clackmannanshire FK10 1EX	Falkirk Council Development Services Abbotsford House, Davids Loan Falkirk FK3 7YZ	Orkney Islands Council School Place Kirkwall Orkney KW15 1NY	The Highland Council Council Headquarters Glenurquhart Road Inverness IV3 5NX
Comhairle nan Eilean Siar Sandwick Road Stornoway Isle of Lewis HS1 2BW	Fife Council Kingdom House Glenrothes Fife KY7 5LY	Perth and Kinross Council Pullar House, 35 Kinnoull St Perth PH1 5GD	The Moray Council High Street Elgin, Moray IV30 1BX
Dumfries and Galloway Council Militia House, English Street Dumfries DG1 2HR		Renfrewshire Council Environmental Services Department Renfrewshire House, Cotton Street Paisley Renfrewshire PA1 1LL	West Dunbartonshire Council Rosebery Place Clydebank West Dunbartonshire G81 1TG
			West Lothian Council County Buildings High Street Linlithgow West Lothian EH49 7EZ

Appendix C: People employed to implement Part IIA

The data given in Table C1 are an estimate of the number of people specifically employed by local authorities and SEPA to implement Part IIA. These data are expressed as full time equivalents (FTE). The data relate to the period from 1 April 2007 to 31 March 2008. Zero returns do not necessarily mean that no-one deals with Part IIA work, rather that any Part IIA work undertaken is part of a wider role the respondent has within the local authority.

Table C1: Estimated number of people employed by Scottish local authorities and SEPA in implementing Part IIA, April 2007–March 2008

Local authority	FTE
Aberdeen City Council	1.0
Aberdeenshire Council	0.5
Angus Council	0.5
Argyll and Bute Council	0.4
City of Edinburgh Council	1.0
Clackmannanshire Council	1.4
Comhairle nan Eilean Siar	1.0
Dumfries and Galloway Council	2.0
Dundee City Council	1.0
East Ayrshire Council	1.0
East Dunbartonshire Council	0.0
East Lothian Council	1.0
East Renfrewshire Council	0.0
Falkirk Council	1.1
Fife Council	2.8
Glasgow City Council	3.0
Inverclyde Council	0.9
Midlothian Council	0.3
North Ayrshire Council	1.0
North Lanarkshire Council	2.0
Orkney Islands Council	0.2
Perth and Kinross Council	2.0
Renfrewshire Council	1.0
Scottish Borders Council	0.5
Shetland Island Council	0.5
South Ayrshire Council	1.0
South Lanarkshire Council	1.0
Stirling Council	0.7
The Highland Council	3.0
The Moray Council	0.5
West Dunbartonshire Council	0.5
West Lothian Council	0.5
Total	34.3
SEPA	2.5

Appendix D: Summary of views of local authority contaminated land officers

The questionnaire invited comments from local authority contaminated land officers on:

- how effective they considered the Part IIA regime to be;
- whether they considered the objectives of the regime were being met.

These views, together with those of SEPA, are summarised below under key themes.

The views expressed are those of the contaminated land officers and not necessarily those of their respective local authority.

Meeting contaminated land objectives

The majority of local authority contaminated land officers felt that the contaminated land regime provides a robust framework for the identification and remediation of contaminated land. It was recognised that the regime is complex in some areas and, at times, misunderstood by the wider community.

The introduction of the regime has raised awareness and the profile of the issues associated with land contamination with land owners, developers, their professional advisors, the general public and regulators. This increased awareness of the issues and legal consequences of not dealing with problem sites has encouraged the investigation and remediation of sites via the planning and development management system and voluntary remediation.

Overall, the introduction of the regime has benefited people and the environment in that approximately 800 sites (1,864 hectares) of land have been made suitable for use, albeit mainly through development management. Additional benefits have also been realised in the regeneration of brownfield land that has been redeveloped for some beneficial use.

A third of respondents felt that the objectives of the contaminated land regime are being met and almost half identified the planning and development management system as being more effective and efficient in delivering these objectives than Part IIA. The majority commented that the objectives could be made clearer and put into better context with other regimes and their objectives.

The local authority contaminated land officers reported that the most helpful aspects of the regime were the definition of contaminated land and the risk assessment framework.

Respondents offered some suggestions on how to improve the regulation of contaminated land and the overall regime. These are summarised below:

Better links with Government

The majority of local authority contaminated land officers expressed a desire to establish better links with the Scottish Government and the wider contaminated land community.

The Scottish Pollution Control Coordinating Committee (SPCCC) is an established forum for considering a wide range of issues relating to pollution including land contamination. SPCCC was established by The Royal Environmental Health Institute of Scotland (REHIS) to facilitate useful debate and to encourage sharing of good practice across the main regulatory bodies in Scotland. Local authorities, SEPA, Health Protection Scotland and the Scottish Government are represented at these meetings and regional pollution liaison groups across Scotland feed into SPCCC.

In 2008, the Scottish Government asked SEPA to set up and chair a Short Life Working Group (SLWG) made up of representatives from local authorities, SEPA, academia, industry and the consultancy sector. SLWG was asked to review Guidance on the Legal Definition of Contaminated Land published by Defra in June 2008 and to look at some of the main issues surrounding the Part IIA regime. Local authority officers are keen to see SLWG become a permanent group to facilitate closer working across the contaminated land community in Scotland.

Further technical and clearer policy guidance was seen by the officers as a priority to assist them in their duties regarding contaminated land. They also said they would like to see contaminated land issues given higher priority within their areas.

Regime specific improvement suggestions

Strong views were expressed by local authority contaminated land officers relating to proposed improvements to the regime, including improved powers of entry to third party land to facilitate remediation.

There was significant interest in promoting improved working across local authority departments and across Government agencies. There was also a desire for stronger reporting links between remediation under development management and the Part IIA regime.

Many local authority officers felt that:

- the present method for collecting returns could be improved and made easier;
- data returns should be amended to reflect the information requirement for future contaminated land reports.

Changes were suggested in relation to the legal requirements relating to public registers to align with the situation in England and Wales regarding the timing and amount of recorded information relating to sites being dealt with under Part IIA. Two features attracted particular attention:

- The requirement in Scotland is for sites to be placed on the register once determined whereas, in England and Wales, the register entry takes place once remediation action has been proposed.

Funding issues

Local authority contaminated land officers expressed strong views about funding arrangements. However, a new funding system has been implemented in Scotland (see Section 2.8) and it is too early to draw conclusions on how this will affect the Part IIA regime.

The respondents felt that ring fenced funding was essential to the success of the Part IIA regime. They had particular concerns about:

- "orphan linkage sites" where the costs for remediation would fall to the local authority which might not have access to previously available funding;
- Initiating an inspection without having access to funds to deal with the site if a significant pollutant linkage was subsequently confirmed and no appropriate person could be found.

¹⁸ www.defra.gov.uk/ENVIRONMENT/land/contaminated/pdf/legal-definition.pdf

Glossary

The Statutory Guidance (Edition 2, 2006) uses a number of terms that are defined in Part IIA of the Environmental Protection Act 1990, other acts or in the guidance itself. The meanings of the most important of these terms are set out below, along with a reference (in italics) to the section in the Act or the paragraph of the Statutory Guidance, or another document, in which the relevant term is defined. Other terms and definitions used in the report are also described.

Chapter, table and annex numbers given below refer to the Statutory Guidance. Section numbers given below refer to the 1990 Act unless otherwise stated.

Appropriate person	defined in section 78A(9) as "any person who is an appropriate person, determined in accordance with section 78F..., to bear responsibility for any thing which is to be done by way of remediation in any particular case."
Brownfield land	land that has previously been developed. The term may cover vacant or derelict land, infill sites, land occupied by redundant or unused buildings, and developed land within the settlement boundary where further intensification of use is considered acceptable (Scottish Planning Policy 3 Planning for Homes). Some Brownfield land may also be affected by contamination.
Building	any structure or erection, and any part of a building including any part below ground, but not including plant or machinery comprised in a building. <i>Table A.</i>
Caused or knowingly permitted	test for establishing responsibility for remediation, under section 78F(2). See paragraphs 9.8 to 9.15 of Annex 2 for a discussion of the interpretation of this term.
Contaminant	a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of the water environment. Paragraph A.13
Contaminated land	defined in section 78A(2) as "any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that - (a) significant harm is being caused or there is a significant possibility of such harm being caused, or; (b) significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused." This specific definition applies to sites that in their current use are causing unacceptable harm or pollution.
Contaminated Land (Scotland) Regulations 2000	regulations (SI 2000/178 as amended by SSI 2005/658) made under Part IIA – described in Annex 4.
Contaminated Land (Scotland) Regulations 2005	regulations (SI 2005/658) made under Part IIA – described in Annex 5.

Current use	<p>any use which is currently being made, or is likely to be made, of the land and which is consistent with any existing planning permission (or is otherwise lawful under town and country planning legislation). This definition is subject to the following qualifications:</p> <p>(a) the current use should be taken to include any temporary use, permitted under town and country planning legislation, to which the land is, or is likely to be, put from time to time;</p> <p>(b) the current use includes future uses or developments which do not require a new, or amended, grant of planning permission;</p> <p>(c) the current use should, nevertheless, be taken to include any likely informal recreational use of the land, whether authorised by the owners or occupiers or not, (for example, children playing on the land); however, in assessing the likelihood of any such informal use, the local authority should give due attention to measures taken to prevent or restrict access to the land; and</p> <p>(d) in the case of agricultural land, however, the current agricultural use should not be taken to extend beyond the growing or rearing of the crops or animals which are habitually grown or reared on the land. Paragraph A.26</p>
Derelict land (and buildings)	<p>is land that has been so damaged by development, that it is incapable of development for beneficial use without rehabilitation. In addition the land must currently not be used for the purpose for which it is held or a use acceptable in the local plan. Land also qualifies as derelict if it has an unremedied previous use which could constrain future development (Scottish Vacant and Derelict Land Survey 2007).</p>
Ecological system effect	<p>significant harm of a type listed in Box 2 of Table A of Chapter A.</p>
Enforcing authority	<p>defined in section 78A(9) as:</p> <p>(a) in relation to a special site, SEPA;</p> <p>(b) in relation to contaminated land other than a special site, the local authority in whose area the land is situated.</p>
Exclusion	<p>any determination by the enforcing authority under section 78F(6) (that is, that a person is to be treated as not being an appropriate person). Paragraph D.5(d)</p>
Greenfield land	<p>land that has never been previously developed or used for an urban use, or is land that has been brought into active or beneficial use for agriculture or forestry i.e. fully restored derelict land (SPP3 Planning for Homes). Some greenfield land may also be affected by contamination.</p>
Harm	<p>defined in section 78A(4) as: "harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property."</p>
Harm in relation to the water environment	<p>defined in section 78A(4A). It has the same meaning as in section 20(6) of the Water Environment and Water Services (Scotland) Act 2003.</p>
Human health effect	<p>significant harm of a type listed in Box 1 of Table A of Chapter A.</p>

Intrusive investigation	an investigation of land (eg by exploratory excavations) which involves actions going beyond simple visual inspection of the land, limited sampling or assessment of documentary information. Paragraph B.20(c)
Land affected by contamination and land contamination	encompasses any land where contamination may be present, irrespective of the significance of its presence.
Local authority	defined in section 78A(9) as meaning any Scottish local authority.
Orphan Linkage Sites	defined in Chapter D, Part 3, Paragraph D.12, of the Statutory guidance where the original polluter cannot be found and the current site owners/occupiers are excluded from liability.
Part IIA	Part IIA of the Environmental Protection Act 1990.
Pathway	one or more routes or means by, or through, which a receptor: (a) is being exposed to, or affected by, a contaminant, or (b) could be so exposed or affected. Paragraph A.15
Pollutant	a contaminant which forms part of a pollutant linkage. Paragraph A.18
Pollutant linkage	the relationship between a contaminant, a pathway and a receptor. Paragraph A.18
Pollution of the water environment	in relation to the water environment, means the direct or indirect introduction, as a result of human activity, of substances into the water environment, or any part of it, which may give rise to harm.
Possibility of significant harm	a measure of the probability, or frequency, of the occurrence of circumstances which would lead to significant harm being caused. Paragraph A.27
Receptor: either:	(a) a living organism, a group of living organisms, an ecological system or a piece of property which: (i) is in a category listed in Table A in Chapter A as a type of receptor, and (ii) is being, or could be, harmed, by a contaminant; or (b) the water environment which is being, or could be, polluted by a contaminant. Paragraph A.14
Register	the public register maintained by the enforcing authority under section 78R of particulars relating to contaminated land.
Relevant information	information relating to the assessment of whether there is a significant possibility of significant harm being caused, which is: (a) scientifically based; (b) authoritative; (c) relevant to the assessment of risks arising from the presence of contaminants in soil; and (d) appropriate to the determination of whether any land is contaminated land for the purposes of Part IIA, in that the use of the information is consistent with providing a level of protection of risk in line with the qualitative criteria set out in Tables A and B of Chapter A. Paragraph A.31

Relevant land or water environment	the contaminated land in question, any water environment affected by that land and any land adjoining or adjacent to the contaminated land on which remediation might be required as a consequence of the contaminated land being such land. Paragraph C.8(d)
Remedial treatment action	a remediation action falling within the definition in section 78A (7)(b), that is the doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or water environment for the purpose: <ul style="list-style-type: none"> (a) of preventing or minimising, or remediating or mitigating the effects of any significant harm, or any significant pollution of the water environment, by reason of which the contaminated land is such land, or (b) of restoring the land or water environment to its former state. Paragraph C.8(f)
Remediation: defined in section 78A(7) as:	<p>“(a) the doing of anything for the purpose of assessing the condition of–</p> <ul style="list-style-type: none"> (i) the contaminated land in question; (ii) the water environment affected by that land; or (iii) any land adjoining or adjacent to that land; <p>(b) the doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or waters for the purpose–</p> <ul style="list-style-type: none"> (i) of preventing or minimising, or remediating or mitigating the effects of, any significant harm, or any significant pollution of the water environment, by reason of which the contaminated land is such land; or (ii) of restoring the land or water environment to its former state; or <p>(c) the making of subsequent inspections from time to time for the purpose of keeping under review the condition of the land or water environment.”</p>
Remediation action	any individual thing which is being, or is to be, done by way of remediation. Paragraph C.8(a)
Remediation Declaration	defined in section 78H(6). It is a document prepared and published by the enforcing authority recording remediation actions which it would have specified in a remediation notice, but which it is precluded from specifying by virtue of sections 78E(4) or (5), the reasons why it would have specified those actions and the grounds on which it is satisfied that it is precluded from specifying them in a notice.
Remediation Notice	defined in section 78E(1) as a notice specifying what an appropriate person is to do by way of remediation and the periods within which they are required to do each of the things so specified.
Remediation Statement	defined in section 78H(7). It is a statement prepared and published by the responsible person detailing the remediation actions which are being, have been, or are expected to be, done as well as the periods within which these things are being done.

Risk: the combination of:	<p>(a) the probability, or frequency, of occurrence of a defined hazard (for example, exposure to a property of a substance with the potential to cause harm); and</p> <p>(b) the magnitude (including the seriousness) of the consequences. Paragraph A.9</p>
SEPA	Scottish Environment Protection Agency.
Significant harm	defined in section 78A(5). It means any harm which is determined to be significant in accordance with the statutory guidance in Chapter A (ie it meets one of the descriptions of types of harm in the second column of Table A of that chapter).
Significant pollutant	a pollutant which forms part of a significant pollutant linkage. Paragraph A.21
Significant pollutant linkage	a pollutant linkage which forms the basis for a determination that a piece of land is contaminated land. Paragraph A.21
Significant possibility of significant harm (SPOSH)	a possibility of significant harm being caused which, by virtue of section 78A(5), is determined to be significant in accordance with the statutory guidance in Chapter A.
Site of Special Scientific Interest (SSSI)	a site notified in accordance with section 3 of the Nature Conservation (Scotland) Act 2004 (the 2004 Act); or a site originally notified in accordance with section 23 of the National Parks and Access to the Countryside Act 1949; or section 28 of the Wildlife and Countryside Act 1981, which is an SSSI by virtue of the provisions of Schedule 5 to the 2004 Act.
Special site	<p>defined by section 78A(3) as: "any contaminated land</p> <p>(a) which has been designated as such a site by virtue of section 78C(7) or 78D(6) ...; and</p> <p>(b) whose designation as such has not been terminated by the appropriate Agency under section 78Q(4) ...".</p> <p>"Special sites" are a subset of determined "contaminated land" sites which meet one of the descriptions in the Contaminated Land (Scotland) Regulations 2000 (as amended); for example, land on which a process subject to Integrated Prevention and Pollution Control is, or has been, operated. Special sites do not necessarily represent the most heavily contaminated land but reflect where SEPA, the enforcing authority for such sites, are considered better placed to secure the remediation.</p>
Substance	defined in section 78A(9) as: "any natural or artificial substance, whether in solid or liquid form or in the form of a gas or vapour."
Vacant land	land that is unused for the purposes for which it is held and is viewed as an appropriate site for development. This land must either have had prior development on it or preparatory work has taken place in anticipation of future development (Scottish Vacant and Derelict Land Survey 2007).
Water environment	has the same meaning as in section 3 of the Water Environment and Water Services (Scotland) Act 2003.

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