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A STRATEGY FOR THE IDENTIFICATION OF CONTAMINATED LAND

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Havant Borough Council Environmental Health have prepared this strategy for the identification of contaminated land, for the purposes of undertaking its statutory duties under Part IIA of the Environmental Protection Act 1990.

The strategy reflects a GIS-based conceptual model developed specifically for the identification process. The conceptual model allows consideration of the whole borough within the first stage, requiring less emphasis on characteristics of different areas of the Borough than would a paper-based approach.

The basis for the strategy is the DETR Circular 2/2000, entitled "Contaminated Land – Environmental Protection Act 1990: Part IIA". Account has also been taken of a DETR Note (June 2000) entitled "Technical Advice for Local Authorities: Contaminated Land Inspection Strategies". The output from five pilot local authority strategies, commissioned by DETR in 1998, was unavailable. Comments on this strat

Other guidance relating to strategy development may also be published in the future, and will be regarded during the periodic review of this document.

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NON TECHNICAL SUMMARY

A duty on Local Authorities to operate a new contaminated land regime was introduced by section 57 of the Environment Act 1995, enacted to operate under Part IIA of the Environmental Protection Act (1990) [‘the 1990 Act’]. The objective of this regime is to control threats to health and to the environment associated with land contamination. Underlying it, is a risk-based “suitable for use” approach to remediation. The regime can be viewed as dealing with the cases where a risk is sufficient, in the light of a site’s current use, to justify remedial action without waiting for any future redevelopment of the land.

Contaminated land is defined on the basis of risk assessment principles. It therefore takes account of the likelihood of significant harm or of the pollution of controlled waters.

For a site to be classed as contaminated, it is necessary to demonstrate the existence of a *significant pollutant linkage*. This is where an existing *contaminant* (source) is able to cause significant harm to a *receptor* (someone or something with the potential to be adversely effected by the contaminant, as defined by the legislation) via a *pathway* (route for contaminant to reach receptor). Without the identification of all three elements of a pollutant (Source, Path, Target, or *SPT*) linkage, land should not be identified as ‘contaminated land’ (as defined under Part IIA of the 1990 Act)

Each local authority has a duty to ‘cause its areas to be inspected from time to time for the purpose of identifying contaminated land’. The Government requires Local Authorities to take a strategic approach to carrying out this inspection and to describe its own approach, taking account of statutory guidance, in a written strategy. *Havant Borough Council* has set out in this strategy how they propose to carry out their inspection of the Borough and carry out associated functions. In particular, the Council has a duty to ensure that any contaminated land identified is properly remediated (subject to reasonableness and other tests) by the appropriate person(s), and then to maintain a register of regulatory, investigative & remedial actions for sites designated under the Part IIA Definition of Contaminated Land.

HBC intends to use a GIS (Geographic Information System) to carry out the first stages of its inspection. GIS computer technology can bring together information contained on digitised maps and in databases, so that it is easier to interpret large amounts of data.

Historic and present day maps of the Borough will be used to study land uses that have had the potential to cause contamination. It is also possible that historic trade directories may be used to augment and enhance the analysis of historic mapping, but this greatly depends upon both the quality and availability of information. In addition, the Environment Agency will provide further information on possible sources of contamination from their archives and databases, whilst continuing to inform & update the Council as additional data become available.

All of this information will be recorded in a series of electronic databases within the GIS, in order to facilitate the identification of sites with the potential to contain sources of contamination.

Receptor information is also to be developed in digital map format for the GIS. English Nature, the Environment Agency and the British Geological Survey either have provided, or

will make available; information about the environmental receptors, including ground water, surface water and ecological quality. Further land use information will be obtained from digitised aerial photographs incorporated into the GIS.

Each source of potential contamination will be given a number representing how *hazardous* it could be, using a scale appropriate to the available information. Each receptor will be given a number on the same scale, representing how *susceptible* it may be to the presence of contamination.

The maps of sources and receptors will be overlain within the GIS, and the computer will perform a spatial analysis of the proximity of sources to receptors. Using the allocated numbers that rate the hazards & susceptibility alongside information relating to their spatial distribution, the computer will generate a table prioritising the sites for the council to investigate further. In this way, a piece of land that has had a previous land use with a high hazard that is close to a current land use which has high susceptibility will be given priority for further investigation over a piece of land with lower hazard and lower susceptibility rankings.

This approach allows the Borough to focus resources on sites that represent the highest risk first. By using a computer-based system, the whole borough can be examined in one go, rather than manually assessing different parts of the borough one at a time. Another advantage of the computer system is that, as new information arises, data can be quickly updated and the priority table regenerated to reflect new information. This approach meets the requirement of the legislation that the approach should be rational, ordered and efficient whilst being proportionate to the risks posed.

As the GIS will have identified sites on the basis of proximity of source and receptor, the next stages of the inspection are to establish whether there is a significant possibility of a link (pathway) existing between the source and receptor. This will be carried out in a staged manner, depending on the level of information required for establishing whether there is a probable and significant linkage.

Stage 1 - Borough Wide site prioritisation model (Source, Receptor), using GIS based data & digital mapping

Stage 2 - Preliminary screening (Pathway Identification) using digital mapping and graphical data sets. This will account for hydro-geological information; groundwater vulnerability, general geology, current land use and any other identified preferential pathways

Stage 3 - A site visit will be carried out, and if appropriate, a detailed desk study of the site

Stage 4 – The final stage would be to commission an intrusive site investigation in order to gather sufficient factual information on the chemical, geological and hydro-geological regimes in order to determine whether the site meets the requirements specified in s78A, Part IIA EPA 1990. This information would likely be gathered from boreholes logs, groundwater levels / pressures, and the chemical analysis of soil & water samples

These investigations are staged to ensure time and financial resources are spent as appropriate. In effect, stages 2 & 3 described above remaining a screening exercise, following the initial GIS based site prioritisation model (Stage 1), and facilitating further

refinement of priority within the highest band of risk rated sites, as appropriate (ten highest scoring for example).

Only the highest priority sites from Stage 2 would progress to Stage 3 at this first screening exercise; and in turn only the sites with the greatest potential to cause significant harm would be put forward for an intrusive site investigation at Stage 4. In any case, sites will only proceed to this final stage if insufficient information is available to make a designation from these preceding steps.

Although the new contaminated land regime relates to current uses of land, the findings from preliminary stages (1 & 2) will also be useful in the context of redevelopment of sites for new uses. The Government has set a target that 60% of all new houses should be built on 'brownfield' sites to relieve the pressure on 'greenfield' sites, so as to conserve the countryside. Therefore sites contaminated by previous industrial uses can be brought back into use and be of wider benefit to society.

1. THE PURPOSE OF THIS STRATEGY

1.1 Introduction

(1) This strategy sets out how Havant Borough Council (HBC) proposes to **identify contaminated land** within the Borough. This is the initial step in a process to ensure that any associated unacceptable risks to human health or to the wider environment are addressed in an appropriate and cost-effective manner.

1.2 The New Contaminated Land Regime

(2) The new contaminated land regime and the corresponding new duties on local authorities are described in Section 2. **HBC is committed to effective implementation** of the new regime and to seek to ensure protection of human health and the environment. This is a part of HBC's wider policy to seek to ensure a sustainable future as captured by its Community Strategy. Sustainable development is about ensuring a better quality of life for everyone, now and in the future. HBC's Community Strategy recognises that its economy, environment and social wellbeing are interdependent, and key priorities are being targeted for improvement.

(3) Land identified as contaminated land under Part IIA of the 1990 Act will be identified on a Public Register that will be available for public consultation. Records of regulatory actions taken with respect to contaminated land will also be publicly available.

1.3 What Does the New Contaminated Land Regime Mean in Practice?

(4) Land contamination is already taken into account under planning control. For example, if former industrial land is to be redeveloped for housing, the developer needs to satisfy HBC, as the planning authority, that land contamination has been properly defined and will be dealt with appropriately (making the land suitable for the proposed use and addressing any wider environmental risks). However, to date there has been little redevelopment of land that had the potential to be contaminated.

(5) The new regime therefore complements the planning system. It represents a **more proactive and strategic approach** to identifying contaminated land and a risk-based approach to securing remedial action that may be needed to return the land to such a condition that unacceptable risks to human health and the environment no longer arise. The first stage, however, is to identify contaminated land. This Document sets out how HBC proposes to carry this out.

1.4 Objectives of the Strategy Document

(6) The objectives of this document are:

- To fulfil the requirement to prepare a strategy to identify contaminated land;
- To show how the Council proposes to fulfil its statutory responsibilities under the new regime;
- To inform all stakeholders of the Council's intentions; and
- To provide information that will be helpful to the Environment Agency in writing reporting on to central government on the State of Contaminated Land

1.5 Consultations in Preparing This Strategy

(7) The lead department in preparing this strategy has been the Community Services Group. The following have also been consulted in preparing this strategy:

- Internal directorates i.e. Public Services, Financial Services, Community Services, Chief Executives Office;
- The Environment Agency, English Nature, English Heritage, the Food Standards Agency and the Department for the Environment, Farming and Rural Affairs (DEFRA);
- Consultation with representative external organisations including the adjoining local authorities, that is Portsmouth City Council, Winchester City Council, Chichester District Council and East Hampshire District Council, residents groups / associations and large businesses within the Borough.

1.6 Best Value

(8) Under Best Value, the Council is committed to continuous improvement in the quality of all its services having regard to a combination of economy, efficiency and effectiveness. In summary, it involves driving up quality whilst balancing this against the need to keep costs down. It also involves consultation, and the monitoring & reviewing of performance. Best Value considerations have been fundamental to the approach adopted to priority setting and the strategic approach proposed for the identification of contaminated land (as presented in Chapter 4). Implementation of the new contaminated land regime will be included in the Council's Best Value Review of Environmental Health Services.

2. SUMMARY OF LOCAL AUTHORITY DUTIES

2.1 Overview of Duties

(9) Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) introduces a new statutory regime for the identification and remediation of contaminated land. This became effective from 1 April 2000 with the introduction of the Contaminated Land (England) Regulations 2000. Statutory guidance forms an essential part of the new regime and is published as DETR Circular 2/2000 *Contaminated Land Environmental Protection Act 1990: Part IIA*. A DETR advice note has also been produced: *Contaminated Land Inspection Strategies*.

(10) The lead role in operating this new regime is assigned to local authorities who are responsible for the identification of contaminated land and, for most sites, for establishing the appropriate person(s) to bear responsibility for any remediation required, deciding the nature of that remediation and recording regulatory actions. Table 2.1 summarises these responsibilities. For certain classes of sites, identified by the local authority, as Special Sites (see paragraph 13), regulation will subsequently become the responsibility of the Environment Agency (see Section 8.2.2). The local authority also needs to consult the Environment Agency (important in identifying where controlled waters may be at risk of pollution or where a site is a potential Special Site) and other appropriate public bodies for non-special, Part IIA Designated sites. Examples of the latter are English Nature, English Heritage, and DEFRA.

2.1.1 Duty to Identify Contaminated Land

(11) The duty to identify contaminated land is established in Section 78B of the Environmental Protection Act 1990 as follows:

78B (1) Every local authority shall cause its area to be inspected from time to time for the purpose-
(a) of identifying contaminated land; and
(b) of enabling the authority to decide whether any such land is land which is required to be designated as a special site.

(12) EPA 1990, Part IIA statutory definition of contaminated land is also introduced for the first time in s78A(2), based on the likelihood of significant harm or the pollution of controlled waters as follows.

s78A (2) “Contaminated land” is any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that -

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) pollution of controlled waters is being, or is likely to be, caused

Table 2.1 Key Statutory Duties on Local Authorities Under Part IIA

Local Authority’s Statutory Duties
Prepare a strategy to identify contaminated land
Implement the strategy
Consult various other parties
Identify potential special sites (and in consultation with the Environment Agency, designate these sites as appropriate. Those identified as confirmed special sites will be transferred to the Agency for regulation and enforcement of remedial works)
Prepare and serve notifications of contaminated land (which effectively starts the consultation process on what remediation is necessary)
Serve remediation notices where appropriate (remediation by voluntary agreed action being preferred)
Determine exclusion from, and apportionment of, liability for remediation and address cost recovery
Compile and maintain registers

(13) The statutory definition introduced by s78A(3), EPA 1990, Part IIA for ‘special sites’ is more complex than that given for ‘contaminated land’; being based upon specified circumstances, as opposed to the wider concept encompassed by s78a(2) above. The Contaminated Land (England) Regulations 2000 provides a list of site uses and contaminant types, requiring scrutiny in order to determine whether the requirements for designation as a special site under Regulation 2(1) are met. In addition, Regulation 3 provides criteria for designating a site (as a special site) by virtue of [defined] pollution of [specified] controlled waters. Briefly summarised, a special site is land that is contaminated (as defined by s78A(2)) and;

- is contaminated by virtue of industrial use for the refining of petroleum from crude oils, or any other bituminous material (except coal); for the manufacture of weapons & explosives; the production of biological, chemical & atomic ordnance (or any other nuclear site), or for certain (designated) military purposes
- is contaminated to such a degree, that controlled waters intended for public water supply are impacted to an extent whereby additional / special purification processes are required to render it ‘wholesome’ within the meaning of Part III of the Water Industries Act 1991 (Water Supply); or, that controlled waters do not meet the appropriate criterion for classification as specified in regulations made under s82 of the Water Resources Act 1991 (classification of quality of waters), (i.e. fail to meet category based quality standards)
- pollution of controlled waters is being caused by substances falling within any of the families or groups listed in paragraph 1 of Schedule 1 to the Contaminated Land (England) Regulations; and any part of these waters are contained within underground strata comprised of rock formations listed in paragraph 2 of Schedule 1 to these Regulations.

(14) The interpretation of contaminated land needs to take account of the statutory guidance that incorporates risk assessment considerations. In essence, however, the issue is to identify unacceptable risks to health or to the environment for current land use. Significant harm includes,

- human health effects as defined
- specified harm to controlled waters or protected ecological systems
- substantial damage to, or failure of buildings, and
- specified damage to, or loss of crops or livestock

2.2 Duty to Prepare a Strategy

(15) Local authorities are required by the statutory guidance to take a strategic approach to the identification of contaminated land that merits detailed individual inspection. This requires a strategy to be documented, adopted, published, implemented and periodically reviewed. Fundamental to the strategic approach required (Paragraph B.9 of the statutory guidance) is that it should:

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

(16) Local authorities are also required, in developing their strategy, to reflect local circumstances. Factors that should be considered are listed in Table 2.2 below.

Table 2.2 Local Factors to be Considered in the Strategy

Local Factors (Paragraph B.10 of statutory guidance)
(a) any available evidence that significant harm or pollution of controlled waters is actually being caused;
(b) the extent to which any receptor (which is either of a type listed in Table A in Chapter A of the statutory guidance or is controlled waters) is likely to be found in any of the different parts of the authority's area;
(c) the extent to which any of those receptors is likely to be exposed to a contaminant (as defined in Chapter A), for example as a result of the use of the land or of the geological and hydrogeological features of the area;
(d) the extent to which information on land contamination is already available;
(e) the history, scale and nature of industrial or other activities which may have contaminated the land in different parts of its area;
(f) the nature and timing of past redevelopment in different parts of its area;
(g) the extent to which remedial action has already been taken by the authority or others to deal with land-contamination problems or is likely to be taken as part of an impending redevelopment; and
(h) the extent to which other regulatory authorities are likely to be considering the possibility of harm being caused to particular receptors or the likelihood of any pollution of controlled waters being caused in particular parts of the local authority's area.

(17) The contents of the strategy are also specified and include aspects such as objectives; local characteristics and their bearing on the strategy; approach proposed; timescales and resources; liaison arrangements; handling information received; review and update. These are reflected in this strategy.

3. CHARACTERISTICS OF THE BOROUGH AND IMPLICATIONS FOR THE STRATEGY

3.1 Characteristics of the Borough

3.1.1 Area, Predominant Land Use

(18) The Borough of Havant is located in the south eastern corner of Hampshire between the South Downs and the south coast, and covers 5536 hectares with two distinct parts: Hayling Island and the mainland. The Borough has a fairly even split of urban and open land with 54% and 46% respectively. Hayling Island is largely rural and the surrounding areas are internationally recognised for their natural beauty, ecological conservation and recreation value. The mainland of the Borough has three main urban centres, Havant, Waterlooville and Emsworth, each separated by large tracts of rural land.

3.1.2 Ecological Value

(19) The Borough has many conservation areas and designations. The coastal areas of Langstone Harbour, Chichester Harbour and Warblington Meadow are designated Sites of Special Scientific Interest (SSSI), along with Sinah Common. In addition to the designation of SSSI, these sites carry designations as RAMSAR sites and Special Protection Area(s) (SPA), recognising their importance internationally.

(20) Langstone & Chichester Harbour SPA's are also part of the Solent Maritime Candidate Special Area for Conservation (cSAC), and form a Solent Maritime Site for which a regulation 33 package has been produced. This document

- provides information to facilitate an understanding of the international significance of the site, the ecological requirements of the habitats & species involved, and the underlying physical processes that influence them.
- outlines management provisions and offers recommendations to avoid deterioration & disturbance of habitats, and
- details and quantifies quality objectives, providing guidance to both contributors & regulators to ensure the maintenance of the area's environmental quality.

(21) Havant Council will have regard to this document, and will liaise with English Nature when determining the significance of possibility that harm will be caused, and the potential significance of such harm identified.

(22) Supplementary to these statutory designations is a number of locally identified sites, provided under the Local Structure Plan. Four Local Nature Reserves (LNR) (Gutner Point, The Kench, Sandy Point, and West Hayling) are found within the Borough and further proposals are under discussion, including two further LNR's (Warblington Cemetery, Langton South Moors), and an extension to the West Hayling reserve.

(23) There are also a number of areas within the borough identified as Sites of Importance for Nature Conservation (SINC's), with 4 large mainland areas (the Queens Enclosure, Dunsbury Hill, and Weacock Common); and 13 smaller SINC's. In addition, 7 further SINC sites are provided on Hayling Island (including coastal sites, such as Sandy Point). Together with the statutory sites, these locally designated areas help provide the network of habitat necessary to preserve our rich diversity of flora and fauna, and the survival of internationally significant species.

(24) Havant's Local Structure plan contains detailed maps of the borough, showing explicitly the locations of all conservation and protected areas, including SINCS. A list of references for all relevant documents may be found in Section 13, at the close of this document.

3.1.3 Landscape Quality

(25) The Borough's landscape value is also recognised, with five highlighted as Areas of Special Landscape Quality (Havant Gap, Southleigh, West Hayling, Sinah Warren, Plant Farm Waterlooville). Chichester Harbour is also an Area of Outstanding Natural Beauty (AONB) that borders the borough, and includes the eastern side of Hayling Island.

3.1.4 Archaeological & Historical Sites

(26) The Borough has numerous buildings of architectural or historic significance, reflecting habitation of the area since Roman times. There are approximately 300 Listed Buildings and a further 60 buildings on the Borough Council's List of Buildings of Local Interest. There are 6 scheduled ancient monuments and further (currently non-designated) important archaeological sites.

3.1.5 Water Quality & Resources

(27) The Environment Agency (EA) classifies the river quality in the borough as ‘fairly good’ to ‘very good’ and bathing waters as ‘excellent’. The Council will have regard to EA’s General Quality Assessment (GQA) scheme for classifying river water quality, as an indicator of pollution levels. This periodic assessment accounts for biological quality (macro-invertebrate indicators of water quality), chemical quality & nutrient composition, and aesthetic value. These criteria are surveyed separately, resulting in a rolling update of quality indicators being made available for review. Surface waters are an important receptor class, and this survey work is considered an important source of indicative information. Further information on river quality is available from the EA and details of how to obtain this can be found in the Section 13 below.

(28) The northern area of the Borough, Cowplain, and south Havant falls within an Environment Agency’s groundwater Source Protection Zone (SPZ). The Borough is situated in the Hampshire Basin and is underlain by Chalk. Clay and Sand deposits (Reading Beds, Bagshot Sands and London Clay), overlay the Chalk and are exposed in the north of the Borough. River & Plateau Gravel’s and Alluvium are found predominantly in the south of the Borough. The underlying Chalk is classed as a major aquifer, and 3 public supply boreholes extracting from this feature are located on the Mainland area of the Borough.

3.1.6 Demography

(29) The population of Havant is approximately 120,000 (HCC Small Population Forecasts 1995) and is predicted to decline, with a 2004 forecast of around 119,000. The proportion of people of working age and below is predicted to decrease and the proportion of the population over retirement age is predicted to increase.

(30) Despite the declining population, the number of households within the borough is increasing and the population density is 22 persons per hectare; five times that of the county average of 4 persons per hectare.

3.1.7 Housing

(31) There are, currently, just over 50,000 households within the Borough and these numbers are forecast to rise, despite the declining population numbers. This change in household numbers is due to the decline in household size. Married couple households are the dominant category in the borough, but this proportion is decreasing as the number of single person household's increases.

(32) The distribution of property by tenure is as follows: the majority, 73%, are owner occupied, whilst local authority rented property stands at around 12%, housing association rented 8%, private rented 2% and other 2%. Portsmouth City Council owns approximately 6,000 dwellings in the Leigh Park area. HBC has no properties of its own as these were transferred a Housing Association in the mid 1990s.

(33) The County Structure Plan 1996-2011 requires the development of 2,990 dwellings within Havant Borough. Only a small percentage of new dwelling are to be permitted on greenfield sites and there is a presumption in favour of both building on previously developed sites, and the reuse or conversion of buildings. The District Wide Local Plan allocates 60% of the additional dwellings in urban areas to be built on previously developed, brownfield land.

3.1.8 Employment and Business

(34) The town of Havant has a long industrial history based around Homewell Spring. Industries in the town included tanneries, tallow production and parchment manufacture. Havant's current industries are mechanical, electrical engineering, pharmaceuticals and high technology. Industrial and residential areas have been developed separately and those areas with a long history of industrial use generally remain as such today.

(35) There are currently twenty five industrial estates within the borough: three large industrial areas are located within Havant and Waterlooville, and additional smaller industrial estates are found in Havant, Emsworth and Hayling Island.

3.1.9 Current Information on Land Contamination

(36) Information on land contamination and remediation has generally been collected in the context of specific planning applications. However, to date there has been very little redevelopment of land that had the potential to be contaminated. There has been no Borough-wide survey or other systematic survey of land contamination, although the Borough has some information concerning potentially contaminative historic land uses. This includes the locations of several former clay, sand and gravel pits, former gas and brick works, tanneries, shipbuilding, timber yards and parchment and sacking factories.

(37) Records exist with the Council of several minor pollution incidents. [There is no pre-existing evidence of significant harm or pollution of controlled waters actually being caused.]

(38) Existing information regarding land contamination, brought forward by third parties or stakeholders will be dealt with in accordance to Section 9 below.

3.2 Implications of Local Factors on the Strategy

(39) Given the extensive conservation designations as well as the patterns of settlement, large tracts of the borough would be considered a receptor under the section 57 legislation.

(40) It is proposed to systematically consider the whole Borough at the same time and, at Stage 1, at the same level of detail. On the basis of a Borough-wide survey there is great advantage in the use of a GIS, which can facilitate such a systematic coverage.

(41) Systematic identification of former potentially contaminative land uses will also be of wider value in the context of the new housing that will be required over the next 5-10 years, especially since brownfield land will be important.

4. APPROACH TO BE TAKEN TO IDENTIFYING CONTAMINATED LAND

4.1 The Risk Assessment Approach

(42) As discussed in Section 2 above, contaminated land is defined in relation to:

- a) significant harm or a significant possibility of significant harm; or
- b) pollution of controlled waters being or likely to be caused.

(43) The presence of contamination alone is not a sufficient condition for land to be identified as contaminated. Therefore, before a local authority determines that any land appears to it to be contaminated land, it should be satisfied as a first step that a “contaminant”, a “pathway or pathways” and a “receptor” have been identified with respect to that land. In the statutory guidance, these terms have explicit definitions as given in Table 4.1. Quoting from the statutory guidance: *“the relationship between a contaminant, a pathway and a receptor is termed a “pollutant linkage” and the contaminant in a pollutant linkage is referred to as a “pollutant”. Without the identification of all three elements of a pollutant linkage, land should not be identified as contaminated land”*.

(44) The identification process is necessarily ‘probabilistic’ in the sense that the objective of the new regime is not to ‘prove’ the status of each plot of land. Instead, in accordance with the DETR Circular, it is to adopt an approach that is rational, ordered and efficient with a proportionality between the local authority activity and the potential threat being addressed.

(45) A series of stages, representing ‘sieving’ processes, can allow progress in a manner that is cost effective and, most importantly, provides a *resourcing tool* so that clear priorities can be defined and effort can be allocated to best effect. This is consistent with **Best Value** considerations (see Chapter 1).

Table 4.1 Definitions from Statutory Guidance for Sources, Pathways and Receptors

Sources, Pathways and Receptors Definitions	
Contaminant	A <u>contaminant</u> is a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters.
Receptor	A <u>receptor</u> is either: (a) a living organism, a group of living organisms, an ecological system or a piece of property which (i) is one of the types of receptor listed in Table A of the statutory guidance and (ii) is being, or could be, harmed by a contaminant; or (b) controlled waters which are being, or could be, polluted by a contaminant.
Pathway	A <u>pathway</u> is 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. It is possible for a pathway to be identified for this purpose on the basis of a reasonable assessment of the general scientific knowledge about the nature of a particular contaminant and of the circumstances of the land in question. Direct observation of the pathway is not necessary.
Note: The identification of each of these three elements is linked to the identification of others. A pathway can only be identified if it is capable of exposing an identified receptor to an identified contaminant. That particular contaminant should likewise be capable of harming, or in the case of controlled waters, polluting that particular receptor. <i>[Taken from the statutory guidance published in DETR Circular 2/2000]</i>	

(46) The model proposed below also allows fast tracking of the more serious cases through early ranking, consistent with the requirement that attention should be focused on where contaminated land is most likely to be identified so that the most pressing problems can be dealt with first. In this way, resources will be focused on those cases that really matter.

(47) Furthermore, it is proposed that receptor classes are kept separate in the model. This makes it straightforward, for example, to see where human health is the issue and to give this priority. This is consistent with the suggested focus on housing in the DETR Circular. Clearly, the definition of contaminated land encompasses a wider range of receptors and the local authorities need to take account of these. However, in these other areas (potential pollution of groundwater, for example), there are other agencies (in this example, the Environment Agency) with existing lead responsibilities and experience, with whom close liaison is essential.

4.2 The Conceptual Model

(48) The model comprises three Phases:

- *Phase 1:* Identify potential pollutant linkages. Potential pollutant linkages will be defined as those that have not been validated. Although this term is not used explicitly in the statutory guidance it is implicit and is considered useful to reflect the status of findings from a ‘first pass’;
- *Phase 2:* Establish actual pollutant linkages (or a reasonable possibility of their existence); and
- *Phase 3:* Establish significant pollutant linkages.

(49) These conceptual phases, or levels, of data interrogation are to be implemented through four operational stages, discussed in more detail below.

4.3 Stage 1, Identification of Potential Pollutant Linkages and Risk Modelling

(50) Implementation of Phase 1 of the conceptual model involves investigation of the spatial relationships (correlation) between potential contaminants (i.e. potential sources) and receptors, and this phase is encompassed fully by the Stage 1 screening exercise. The presence of a contaminant and a receptor is a necessary, but not a sufficient, condition in identifying contaminated land. Thus, the issue is whether a pollutant linkage *may* exist. The correlation may involve the receptor directly overlying the source or lying within a defined zone of influence of the source. An example of application of the latter would be where houses are close to a closed landfill and where there could be a potential landfill gas risk; this could be flagged by an assumed zone of influence around the landfill.

(51) The Stage 1 screening thus seeks to provide an understanding of the spatial correlation between a source and receptor. It utilises readily available and relatively low cost data sources, and allows the identification of potential pollutant linkages. It is however, only where pathways are explicitly examined in subsequent Stages (2 and 3), that an assessment of probability that a pollutant linkage is present can be made. The conceptual Phase 1 will thus be implemented through the Stage 1 screening exercise; undertaken by combining various sources of existing information, most of which will be obtained explicitly for this purpose.

4.3.1 The Use of GIS

(52) The whole process of identifying pollutant linkages is one of spatial analysis. Sources and receptors can all be represented as area features with the extents of each defined on a map. The spatial correlation between the features can then be examined. In the case of contaminated land, such correlation could be of the following type:

- coincidence - where source and receptor occupy the same space;
- influence - where there is an assumed or known zone of influence associated with source and receptor.

(53) Where data can be represented on a map or referenced to a location on a map, Geographical Information Systems (GIS) can store this information in an electronic (digital) format, and in doing so provide very efficient means of managing and analysing such data. This is achieved through the ability to deal with large amounts of data in a systematic and consistent manner

(54) HBC is currently undergoing a review of its corporate GIS. The current WINGS system is due to be updated and is likely to be superseded by CadCorp, MapInfo or ArcView, (the Council holds two MapInfo licences). However the timetable for introduction of the new corporate system is not finalised. As an interim measure, Environmental Health and Housing Service have secured a single user licence for CadCorp Spatial Information System (SIS); having the scope and capacity to handle the datasets required for implementation of the strategy.

(55) The GIS capacity building will involve:

- the acquisition of any necessary hardware and software upgrades for the Department's current GIS;
- the conversion of data into a digital format, or acquisition of data from third parties where appropriate;
- the development of custom tools to perform the Stage 1 tasks in an automated fashion - the application of the risk model, and the recording of update transactions to allow the auditing of results to be performed;
- the training of staff in the operation and maintenance of the GIS, and its development into other areas.

(56) The key datasets required for the Stage 1 identification process are:

- Sources
- Receptors

(57) (See later for a discussion of why pathway datasets are not considered explicitly at Stage 1.)

4.3.2 Source Datasets

(58) The strategy to be adopted in the creation of these datasets is that of progressively compiling the datasets from existing digital sources, adding third party data, and converting paper records.

(59) The source dataset represents areas of past or present activity that may contain contaminative substances. There are potentially a substantial number of primary datasets that have a bearing on the description of historical and present land use. The principal dataset for sources are digitised historical maps with associated information polygons. Further datasets that the council proposes to utilise, and acquire as necessary, are listed below.

Table 4.2 Table of Source Datasets

Dataset	Stage of use	Origin	Format
EA Licensed Landfill Sites	Stage 1 Pass 1	EA	Digital
Landfill Sites (Formerly Licensed under Hampshire County Council (HCC), or EA)	Stage 1 Pass 1	EA, Digitisation of HCC / HBC Data	Digital
Potentially Infilled Land, Informal (known to have been fly-tipped) and Unlicensed Landfill (i.e. closed prior to 1974)	Stage 1 Pass 1	HBC Analysis of Historical Mapping & additional HBC information sources	Digital
LAPC Sites	Stage 1 Pass 1	HBC Digitisation of records	Digital
IPC Sites	Stage 1 Pass 1	EA	Digital
EA Waste Transfer Stations	Stage 1 Pass 1	EA	Digital
Pollution Incidents	Stage 1 Pass 1	EA	Digital
Discharge consents	Stage 1 Pass 1	EA	Digital
Historical mapping	Stage 1 Pass 1	Landmark	Digital
Historical land use analysis	Stage 1 Pass 1	HBC Analysis of Historical Mapping	Digital

4.3.3 Receptor Datasets

(60) The receptor datasets represent areas occupied by human, controlled water or ecological receptors. The human receptor dataset is primarily presented by current land use from which the interface with the human population can be inferred. Like the source dataset, it can be compiled from a number of different primary data. HBC have digital aerial photographic coverage of the Borough and these are a valuable source for assessing the location of receptors. The controlled water dataset consists of rivers, open water features and groundwater aquifers, which exist in digital form from a number of third parties (the Environment Agency should be able to provide this directly). The ecological dataset represents areas designated for nature conservation and will be available on the current HBC GIS. These primary datasets are listed in Table 4.3.

4.3.4 Classification of the Source/Receptor Datasets

(61) The list of sources (contaminative uses) provided within the historic land use polygon dataset can be divided into hazard classes (misleadingly referred to in the Landmark tables as ‘risk class’) based on the contaminative potential. The contaminative uses are defined by category using DoE industry profiles. Some former uses have inherently a high probability of contamination (e.g. chemicals or petroleum manufacture, recovery or refining) whereas others have a lower such probability (e.g. food manufacture). It is currently envisaged that four hazard classes will be adopted. The approach is based on group consensus, with several senior contaminated land professionals (at least three) meeting to assign potentially contaminative uses to hazard classes. As necessary, basic information will be sought on the nature of the industry to feed into the decision-making process.

(62) The receptor dataset will be divided into three components: human, controlled waters, and ecological. This will enable the analysis of each to be undertaken independently of the others, and professional judgement used as to which sites from each receptor class progress to the Stage 2, secondary screening. The Council will thus be able to prioritise risks of harm to human health in accordance with the statutory guidance. It should be noted here however, that the pollution of both surface water and groundwater may constitute human health issues, being both pathways and receptors in their own right. Pollution of controlled waters also has the potential to detriment ecological quality, and account must be taken of the number of receptor classes may be effected by an identified contaminative use at this stage.

Table 4.3 Table of Receptor Datasets

Dataset	Stage of use	Origin	Format
Human receptors			
OS Topographic mapping	Stage 1 Pass 1	HBC	Digital
Aerial photography	Stage 1 Pass 1	HBC	Digital
Controlled waters			
Aquifers	Stage 1 Pass 1	BGS	Digital
Surface water	Stage 1 Pass 1	BGS or EA	Digital
Boreholes	Stage 2	HBC (EA/Southern Water)	Digital
Water Abstraction Points	Stage 2	EA / Portsmouth & Southern Water	Digital
Groundwater Vulnerability	Stage 1 Pass 1	EA	Digital
Drift Geology	Stage 2	HBC	Digital
Surface Geology	Stage 2	HBC	Digital
Ecological receptors			
Nature Conservation / Land Use	Stage 1 Pass 1	HBC	Digital

(63) Although property (in the form of crops/livestock/animals and in the form of buildings) are receptors in Table A of the statutory guidance, the descriptions of harm to be regarded as significant do not imply the need for active search as such types of harm would become evident.

4.3.5 Building and Applying the Risk Model

(64) A model will be constructed that assigns different categories of source (contaminative use) to specific hazard classes and different receptor features to specific susceptibility classes.

(65) A matrix will be constructed for each receptor type (human health, controlled waters and ecological) that attributes a preliminary rating ('score') of the probability of a significant pollutant linkage being present, i.e. where there is an overlap between a source, (e.g. a former industrial site), and a receptor, (e.g. new housing development). For example, a high source hazard combined with high receptor susceptibility equates to the highest likelihood of a significant pollutant linkage. This is illustrated below in Table 4.4. Values in the matrix cells are the scores.

(66) The model will then be applied within the GIS to classify each source and receptor according to the appropriate risk ranking based on spatial coincidence (i.e. where there is an overlap (or proximity) between a source (e.g. a former industrial site) and a receptor site (e.g. a housing development). The results will be analysed statistically with regard to the distribution of classes, and then the model refined as necessary. In essence, this means giving a ‘score’ to each site reflecting the likelihood of a significant pollutant linkage from which the most potentially significant (i.e. the highest scores) can be prioritised for taking on to Stage 2. The output will be a series of maps and a schedule showing the ranked sites. From the schedule, the higher risk sites will be passed forward to the Stage 2 analysis. The approach thus allows sites to be subsequently processed according to a risk-based priority that matches available resources. Information collected as part of the later stages of analysis (see below) will be fed back into the model (again using the GIS) so that the model always reflects the risk characterisation based on the most up-to-date information.

Table 4.4 Table Showing Matrix of Likelihood of a Significant Pollutant Linkage Being Present

Source / Receptor Risk Ranking		<i>Receptor susceptibility</i>			
		High	Upper Medium	Lower Medium	Low
<i>Source Hazard</i>	High	1	2	3	4
	Upper Medium	2	3	4	5
	Lower Medium	3	4	5	6
	Low	4	5	6	7

(67) Care must be taken at this stage not to over-simplify the risk ranking process, and refinement at this [ranking] stage may well be required depending upon the first-run outputs from the model. Given the dynamic nature of land-use over time, caution must be exercised in defining boundaries to which different hazard / susceptibility categories are allocated. For example, where contaminative uses are confined to a small area (bulk storage for example) within a large site, this should be reflected in the resulting source ‘hazard’ ratings. The scoring process should therefore possess adequate sophistication to account for both present & historic site ownership boundaries, as well as accounting for the trans-boundary nature of ground contamination and environmental receptors.

(68) We must avoid the situation whereby many sites fall into equally ranked, high-risk categories; as this will not aid the identification of the most [potentially] significant pollutant linkages. In this respect it may be necessary to break down overall rankings (see table 4.4) to a further level of complexity than integers will allow; possibly by calculating rankings instead as ‘floating point’ (decimal) data. The advantage of this is that sites (n) will be prioritised in order (1 to n), with few sites occupying the same risk ranking.

(69) The initial datasets to be used are relatively low-cost but also fairly broad-brush. The datasets can be continuously refined up to an agreed acceptable, level commensurate with the purpose of the contaminated land regime and the statutory guidance. For example, aerial photography can be used to analyse high susceptibility receptor sites, to examine in more detail the spatial coincidence with sources. The review of additional datasets is also discussed further under Review (section 11), where it is important to ensure an appropriate balance between refining datasets and the additional benefits resulting from this, with the increased costs incurred.

(70) In principle, a three-dimensional matrix would be preferable, with a rating also for the pathway. However, it is considered that this would over-complicate the initial stage of assessment, especially given the number and size of datasets required for screening the entire borough in a concurrent exercise. The likelihood of a significant pollutant linkage at Stage 1 is therefore based solely from information available on the source hazard and the receptor susceptibility inferred.

(71) The above approach necessarily incorporates a substantial element of professional judgement. However, the approach is broadly similar to that used in other contexts. An example would be environmental management systems, which require the identification of significant environmental effects and often apply a matrix of severity versus likelihood. The important points in both contexts are that assumptions should be clearly stated.

4.4 Stage 2, Identification of Actual Pollutant Linkages; and Stage 3, Desk Studies

(72) This stage involves seeking to establish whether there is an actual pollutant linkage present. Sites are carried forward to Stage 2 on the basis of the priority set at Stage 1 and on the available resources. Only the high priority sites would be required to progress to this level (i.e. implied significance, no validated preferential pathways). Considering pathway data at this second stage thus improves the efficiency of Stage 1 screening, concentrating resources upon a condensed number of sites for which the analysis would be most beneficial.

(73) Stages 2 & 3 involve the Council satisfying itself that progressively:

- (a) by Stage 2 screening (GIS based), that there is a high probability such a pollutant linkage exists. This requires validation of the Stage 1 assumptions by analysis of the available pathway datasets, based upon an appropriate secondary scoring system. The approach the Council propose for Stage 2 scoring is necessarily risk-based, in order to allocate resources effectively as discussed in detail below.
- (b) by stage 3 validation (desk study & site visit), that the pollutant linkage either:
 - (i) is resulting in significant harm to the receptor (as defined in Table A of the statutory guidance) or presents a significant possibility of significant harm to the receptor (as defined in Table B of the statutory guidance), or
 - (ii) is resulting in the pollution of the controlled waters that constitute the receptor, or is likely to result in such pollution.

(74) A pollutant linkage satisfying (b) above is termed a “significant pollutant linkage” and the pollutant(s) forming part of it as “significant pollutant(s)” **A significant pollutant linkage forms the basis for the determination that land appears to the local authority to be contaminated land.** The objectives of Stage 2 pathway analysis and Stage 3 site specific desk study (& site visit); are to establish the presence of pollutant linkages.

(75) Sites filtered by the Stage 1 process are thus passed onto Stage 2; involving further prioritisation of sites based upon available pathway datasets (Geology, Groundwater Vulnerability, Sewage / Drainage systems, Service conduits, deep pile foundation construction etc.). The highest priority sites from the Stage 2 ranking exercise progress to Stage 3, where a site visit and detailed desk-based studies will be undertaken to validate the information and classifications identified during Stages 1 & 2. There will be an information-gathering element to enhance the datasets for these sites and to enable a more informed judgement in respect of the separate elements of source, pathway and receptor.

(76) It is useful to view Stage 3 at two levels:

- Stage 3A: site visit and completion of simple pro forma sheet that serves to validate the basic data and interpretation that has come from Stages 1 & 2. In particular, the visit should be able to confirm whether a receptor appears to exist and also to verify boundaries or whether sub-division into more appropriate units is required. If it is concluded that there is not a pollutant linkage (or not a reasonable possibility of such a linkage), then this information will be fed back into the GIS and the land in question will not be determined as contaminated land. If it is concluded that there may be a pollutant linkage, further consideration will be required at Stage 3B;
- Stage 3B: a formal desk study that will involve liaising with external bodies such as the Environment Agency, examination of geological records and borehole logs from the British Geological Survey and supplementary information on site history (where relevant) to provide a desk-based risk assessment. Where the site owner or occupier (or others) provide information (e.g. a ground investigation), then this will also be assessed. The objective of Stage 3B is to consider further whether land can be determined as contaminated land or not on the basis of available information. Where there is a reasonable possibility that a significant pollutant linkage exists but there is insufficient information to make a determination, progression to Stage 4 may be necessary, whereby intrusive investigations will be undertaken (See Section 4.5 for further discussion).

(77) At each stage in the process, the issue is whether there is sufficient information to determine whether the land is contaminated.

(78) The statutory guidance sets out the principles and issues to be considered in making an assessment of whether land is contaminated land.

4.5 Stage 4, Ground Investigations & Identification of Significant Pollutant Linkages

(79) This stage is concerned with establishing whether there is a significant pollutant linkage present. This may require intrusive investigations (trial pits or boreholes, for example), particularly if there are no previous ground investigation reports available. However, in accordance with the DETR Circular, an intrusive investigation will only be carried out where three conditions are met. These are where there is: (i) insufficient information to make a determination without such investigations; (ii) a reasonable possibility of a pollutant linkage being present; and (iii) a likelihood that both a contaminant and receptor are present. Moreover, the scope of any intrusive investigations will be limited to that necessary to make the determination. This is because, if land is identified as contaminated land, subsequent investigations may be sought by the Council under remediation notice powers in order for the characterisation to be carried out more fully by the

appropriate person(s) as part of remediation works (an “assessment action”). The investigations will be designed on a site-specific basis taking account of all that is known of the site including the potential or actual contaminants based on the site history and previous investigations (if any). Statutory powers of entry are available to the Council if needed. Careful attention to the DETR Circular is required both to ensure that investigations are really necessary and that best value is obtained.

(80) Before authorising or carrying out an inspection using statutory powers of entry, the Council will consider whether, if the land in question were to be found to be contaminated land, it would fall under the definition of a special site. If this is the case, the Council will seek to make arrangements for the Environment Agency to carry out the inspection on behalf of the Council. This is because the Environment Agency is responsible for the regulation of special sites, although the Council is still responsible for the initial determination that the land is contaminated land and, if so, whether or not the site is a special site.

(81) Intrusive investigations will require the Council to appoint appropriate contaminated land specialists to manage and conduct the work and to select appropriate ground investigation contractors and laboratories. The Environmental Industries Commission operates a quality assurance scheme for the selection of environmental specialists, including contaminated land specialists, and member firms (around 20 in number) along with their particular areas of expertise, are listed online at eic-uk.co.uk.

(82) Guidance on site characterisation (prepared by WS Atkins) is shortly to be published by the Environment Agency and is aimed at local authorities, contractors and other bodies who need to address the management issues raised. Health & safety guidance will also be consulted in advance of commissioning an intrusive investigation, including “A guide for safe working on contaminated sites”, CIRIA Report 132, Steeds JE et al., 1996.

4.6 Summary of Stages 1 to 4

(83) In summary, a conceptual model is proposed involving a three-phase identification process, with a staged implementation using GIS to manage the spatial data throughout. This addresses the identification sequence of *potential* pollutant linkage (*Phase 1*, Stage 1), *actual* pollutant linkage (*Phase 2*, Stages 2 & 3) and *significant* pollutant linkage (*Phase 3*, Stages 3 & 4). The model allows assessment at each stage, and as additional information becomes available. In this way, the Council can establish priorities based on the degree of risk of significant harm and to begin by investigating further the highest priority cases first. Then,

lessons learned from practical experience, including resource implications, can be taken into account in re-assessing the way forward.

5. TIMESCALES

(84) The statutory guidance requires local authorities to prepare, formally adopt and publish a strategy to identify contaminated land within 15 months of the implementation of the contaminated land regulations (i.e. by end June 2001). This is the only explicit timescale set and it is for local authorities to define their own programme for carrying out detailed inspections as part of the strategy.

(85) There is, however, an implied timescale of around three years in that the Government announced in July 1998 that an additional £50 million would be provided to local authorities in total over the following three years. This is “*to help local authorities develop their inspection strategies, carry out site investigations and take forward enforcement action*”. Thus, the additional funding is being provided in the years of the period 1999-00, 00-01 and 01-02.

(86) HBC is aiming to begin the staged implementation of this strategy following the timetable outlined below, subject to continuation of the newly available resources.

Table 5.1 Table of Strategy Implementation Timetable

Year	Activity
00-01	Prepare draft strategy
2004	Consult on, publish and adopt strategy
04-08	Carry out Stage 1 assessment: Derive source and receptor datasets Build risk model Classify datasets Run risk model to identify the priorities in terms of likelihood of a significant pollutant linkage, with sensitivity analysis Carry out Stage 2 & 3 assessments, and Stage 4 investigations (on going) to identify contaminated land. Timetable dependent on outcome of Stage 1 assessments. Issue notifications of contaminated land and remediation notices as necessary to ensure no unacceptable risks to human health or to the wider environment.

Note: concerns will be followed through as they arise and this is not meant to imply that no enforcement action will be taken if matters of concern or urgency arise.

6. RESOURCES

(87) An indication below is given of possible resource requirements for implementation of this strategy. It should be noted that for Stage 3 & 4 the costs could only be represented as *possible additional* costs. Prior to the completion of Stage 1 & 2, there is no basis upon which to predict the actual numbers of sites that may need to be addressed as potentially contaminated land, or their associated costs.

(88) The Government, in recognition of the additional financial burden of contaminated land inspections, has made an additional £50 million available to local authorities. These monies are “to help local authorities develop their inspection strategies, carry out site investigations and take forward enforcement action”.

Table 6.1 Table of Estimated Costs to Complete Stage 1

Stage	Element	Fee/ staff costs	External Purchases	Total
Pre 1	Draft Strategy (carried out) Liaison, consultation and ongoing support to publication of strategy	£3,995 £3,000		£6,995
1 & 2	<ul style="list-style-type: none"> • Acquisition of Digital historic maps and potential source polygons • Acquisition of BGS data • Collate and construct datasets. • Build GIS routines to run model and provide required outputs. • Run risk model, 1st-3rd passes. 	£4,000 £6,000 £1,000	£20,000 £3,000 est.	£34,000
TOTAL				£40,995

Table 6.2 Table of Potential Additional Costs for Stages 3 and 4

Stage	Element	Indicative Cost
3A	Site Walkover	£300-400
3B	Desk studies Desk Study (small, basic site) Desk Study (large, complex site)	£1,000 - £2,000 £10,000 - £15,000
4	Site Investigations Site Investigation (small site, 2 days site effort, sample analysis & reporting)	£3,000 - £5,000

7. LIAISON WITH OWNERS AND OCCUPIERS OF LAND

7.1 Visits and Inspections

(89) The approach to identifying contaminated land is based on establishing priorities at an early stage. This means that the Council or its agents will need to visit and carry out detailed inspection for **only a small proportion** of the land within the Borough. This is land where the earlier stages of study suggest the possibility of contaminated land (as defined).

(90) The further investigations will be prioritised according to the Stage 2 ranking (see above), and may include:

- collation and assessment of documentary information;
- a visit to the particular area; and
- sampling of the land

(91) The Council may need to liaise with owners and occupiers of land:

- To carry out a walkover survey. This will allow a check of current receptors and, in some cases, may be sufficient for the Council to decide that land should not be identified as contaminated land (and, in some circumstances may be sufficient to decide that land *should* be identified as contaminated land). In some cases the walkover might include limited sampling (for example of surface deposits). Liaison would normally be with the occupier;
- to request information that the owner or occupier may have relevant to the Council's further assessment. This could be historical information or previous studies (desk studies or ground investigations, for example) and its availability may avoid the need for the Council to undertake independent ground investigations. Alternatively, the owner may offer to provide information on the condition of the land within a reasonable and specified timescale;
- to agree access and timing for a ground investigation or taking samples by the Council or its agents where considered necessary. In some circumstances an authorised person can ask other persons questions, which they are obliged to answer, and make copies of written or electronic records;
- in response to enquiries from interested parties.

(92) In each case, the purpose in liaising with owners/occupiers will be to assist the Council in obtaining sufficient information to make a determination on whether land appears to the Council to be contaminated land (as defined). The Council has, under Section 108 of the Environment Act 1995, the power to authorise a person to exercise specific powers of entry subject (in some situations) to seven days' notice except in an emergency. In practice, the Council will in normal circumstances give advance written notice of a visit and seek to agree a mutually convenient time (except where there is deemed to be an emergency situation).

7.2 Subsequent Regulatory Actions

(93) The Council will also liaise with the owner and occupier in the following circumstances:

- where land has been identified as contaminated land, a written record of the determination will be provided (setting out the reasoning) to the owner, the occupier and those who appear to be appropriate person(s) to bear responsibility for remediation action that might be necessary (including the capacity in which notified) in accordance with statutory guidance. Details will also be included on the availability of site investigation reports and on other persons notified at the same time. The Council will also provide information on the tests for exclusion from liability and apportionment of liability. This will enable those persons to know what information they may wish to provide to the Council in order to make a case for their exclusion from liability or for a particular apportionment of liability;
- The Council will allow at least three months for consultation (except where remediation is urgently needed) with the above parties on what is required by way of remediation, and over what timescale, before a remediation notice is served.

(94) The Council's general approach will be to **seek to reach voluntary agreement** in preference to serving a remediation notice. However, where negotiations are not successful and warning letters have not resulted in agreement, the Council will where appropriate issue remediation notices in accordance with its statutory duty, taking account of statutory guidance on the liability apportionment and cost recovery issues.

7.3 Risk Communication

(95) for The Scotland and Northern Ireland Forum Environmental Research (SNIFFER) has published guidance titled, 'Communicating Understanding of Contaminated Land Risks' and reference may be made to this work in communicating risks to members of the public. See Section 13 for availability.

8. LIAISON WITH OTHER AGENCIES

8.1 Introduction

(96) The Council is committed to effective liaison with all other relevant agencies in order to ensure appropriate decisions are made and that duplication of effort is avoided. The Environment Agency will be the principal agency in this regard although liaison arrangements will also be established with English Nature, English Heritage, the Food Standards Agency, DEFRA and the Health Authorities (Health & Safety Executive (HSE), Health Protection Agency (HPA) and the East Hants Primary Care Trust (PCT)).

8.2 The Environment Agency

8.2.1 Liaison Arrangements

(97) Liaison arrangements have already been established with the Environment Agency, the main contacts being Lucy Abbott and Paula Howell (Hampshire and Isle of Wight Area Office, Southern Region) who are in contact with HBC Environmental Health Manager (Stephen Dear).

(98) The Council during the production of this strategy consulted the Environment Agency on a draft strategy and took account of comments made.

(99) Consultations will be held with the Environment Agency if any land, which may be contaminated land, would (i) be so classified by virtue of any pollution of controlled waters; or (ii) would be a special site.

8.2.2 Special Sites

(100) The procedure for transferral of responsibility to the EA for any sites designated as special sites, will be as specified under s78C, Part IIA, EPA 1990. Section 78C(1) requires the Council to decide whether or not the land is required to be so designated under the regulations; and also to give notice of that decision to the EA, the site owner and occupier & any additional persons deemed to be appropriate under s78C(2). A requirement is also imposed under s78C(3) for the Council to seek, and have regard to advice from the EA prior to making a decision under s78C(1) (a) as to whether or not the criteria set out in the regulations for designation of a special site are met.

(101) The EA may also notify the Council of a potential special site, and require the above process to be undertaken (the decision remains with the Local Authority).

(102) Should a designation as a special site be deemed appropriate, a notice may be prepared under (1) (b), or as it may be (5) (b) of s78C; taking effect from the date the notice is served.

(103) Section 78D provides for the referral to the Secretary of State (SoS) of the decision as to whether a site qualifies as a special site. Referrals are generally made only if the EA exercises its right to inform the Council of its disagreement with the decision (so notified) along with a statement of reasons, within a period of 21 days from the date that statutory notice is given (in accordance with s78C(2)).

8.2.3 Transfer of Information

(104) The Council is required to provide copies to the Environment Agency of the statutory written record of determination of contaminated land and copies of remediation notices issued. In addition, the Council has also agreed to adopt the Environment Agency's proposed standard forms of information exchange (in fulfilment of the Agency's reporting requirements to Central Government) when the following occur:

- a site is determined to be contaminated land (as well as providing basic statistical data, this will help the Agency decide whether or not it should provide site-specific advice) (Form Ref. SOCL/LA/FORM 1);
- remediation action is undertaken on a site (Form Ref. SOCL/LA/FORM 2); and
- each year end, provision of a summary of HBC's regulatory activity during the year (Form Ref. SOCL/LA/FORM 3).

(105) Specific information has been provided by the Environment Agency to HBC on CD-ROM as follows (see also Chapter 4, where datasets are discussed in more detail):

- aquifer locations and characteristics and source protection zones;
- surface and groundwater quality, surface and groundwater resources, pollution incidents, abstraction licenses,;
- information on location of closed landfills and currently licensed waste management licensed sites;
- details of sites of a type that, if contaminate land, could be categorised as Special Sites (IPC authorised sites, licensed nuclear sites, oil refineries, MOD Land etc.) as well as sites where radioactive substances are licensed.

8.3 English Nature

(106) English Nature will be contacted to take account of all relevant information that it may hold. This includes the acquisition of datasets relating to ecological receptors of relevance in considering significant harm. English Nature's advice will also be sought in evaluation of ecological system effects as relevant when the strategy is implemented.

8.4 English Heritage

(107) Land Contamination has the potential to damage our archaeological and architectural heritage. English Heritage (EH) will therefore be consulted with regard to the potential effects of ground contamination on sites of archaeological significance at the site prioritisation stage, as well as in the later assessment stages. It is important to ensure that any intrusive investigations and remediation techniques do not detriment sensitive historical sites, and as such, advice will be sought from EH in the event that ground contamination is suspected at a site with known archaeological or architectural value.

8.5 Defra and FSA

(108) Defra will be consulted during Stage 1 to confirm that they are not aware of any food chain, or livestock issues that should be taken into account. The Food Standards Agency has responsibility for food safety including the safety for consumers of any food that may be affected by contaminated land. This includes food produced in domestic gardens / allotments and food collected from the wild as well as commercially produced food. The FSA requires consultation on the strategy and is able to advise on food safety aspects of any contaminated land identified.

8.6 Health Authorities (HSE, HPA, and the East Hants PCT)

(109) The relevant health authorities will be consulted during Stage 1 to confirm that they are not aware of any clusters of health complaints that could be attributable to pollution or contamination in any way. Both the HPA & East Hants PCT have responsibilities for wider public health issues in the Southern Region and will be contacted if a site is identified that poses a significant and immediate risk to human health.

(110) The HSE is responsible for safe working practices on contaminated sites, and the Council will have regard to their guidance when organising intrusive site investigations at Stage 4.

9. HANDLING INFORMATION AND INFORMATION REQUESTS FROM THE PUBLIC, BUSINESSES AND VOLUNTARY ORGANISATIONS

9.1 Contacting the Council

(111) The first point of contact for the public with the Council on contaminated land issues will be the Community Services Group. They will deal with requests for information and also concerns or complaints relating to contaminated land. In addition to information from members of the public, the Council may also receive information from a business or a voluntary organisation relating to the possibility that the particular land might be contaminated land.

9.2 Complaints and Concerns Raised

(112) The Council is seeking to adopt a systematic approach to the identification of contaminated land as discussed above. However, this will take time to complete (around 2-3 years) and the Council view it as important to be able to respond to and investigate specific concerns that are raised, for example by members of the public, businesses and voluntary organisations, in the meantime.

(113) Others may provide information that is sufficient to identify land as contaminated land directly or may suggest that detailed inspection and possibly intrusive investigations are merited. Alternatively, following assessment, the Council may consider that no action is merited ahead of the systematic analysis as the concern DoEs not appear to be well-founded or that consideration of the presence of receptors (for example) is sufficient to determine that land is not contaminated.

(114) Anyone who makes a complaint or expresses a concern will be:

- dealt with by a named officer;
- receive an initial response within 3 working days and a written response (if necessary) within 10 working days;
- kept informed of what action, if any, the Council is taking following evaluation of the complaint or concern;
- kept informed of the outcome;
- treated courteously and fairly;
- and the anonymity of the originator will be preserved where required as far as is appropriate (normally until such time as legal action may be necessary).

(115) Other regulatory authorities will be informed of concerns raised as appropriate where the information provided relates to matters relevant to other regulatory regimes (e.g. the Environment Agency, where powers under the Water Resources Act 1991 may be more appropriately applied). Where the concern is, or appears to be, well-founded, owners and occupiers of land to which the information relates, or potential appropriate persons, may also be advised at this stage that it has been received and how it will be dealt with, with an indication of timescale. These parties, where contacted, will also be advised of the final outcome of the Council's investigations.

9.3 Assessment of Information

(116) The Council's approach in assessing information provided and how to proceed will include taking account of the following factors:

- the strength of the evidence already available to suggest that the land is contaminated land (for example visual evidence, previous investigations, anecdotal information that is considered likely to be well-founded);
- the apparent urgency (for example, priority will be given to concerns about human health in accordance with the Council's primary duty).
- whether the information appears to be driven specifically by commercial considerations. For example, a prospective purchaser may seek to be assured that land they are seeking to acquire will not be identified as contaminated land. In this context, the Council will encourage the enquirer to employ his own advisers to make a judgement prior to the Council completing its own identification process except where the request is consistent with fulfilling the Council's strategy.

- the apparent motivation of the person supplying / offering information about potential land contamination, where there are grounds to suspect that information may not be well founded.
- although anonymous complaints are not generally dealt with, exceptions will be made in certain circumstances at the discretion of the receiving office. Each complaint will be evaluated on individual merits. Where a complaint is received anonymously an individual's anonymity will be respected where the information offered, concerning contamination, is detailed and sufficient enough to perform an investigation. Non-specific generalised information will not be considered sufficient to warrant an investigation.

9.4 Access to Information

(117) Information obtained will be kept in accordance with the provisions of the Data Protection Act 1998, where HBC must comply with the eight enforceable principles of good practice. These principles state that the data must be:

- fairly and lawfully processed;
- processed for limited purposes;
- adequate, relevant and not excessive;
- accurate;
- not kept longer than necessary;
- processed in accordance with the data subject's rights;
- secure;
- not transferred to countries without adequate protection.

(118) Whilst the Council is committed to continuing to improve its access to environmental information, it is appreciative of the sensitive nature of contaminated land information. It is envisaged that publicly available information will include general progress/methodology of the borough inspection and the s78(R) Register. [Information will be made available to the public online and in council offices and libraries.]

(119) Information concerning sites where a contaminant linkage is not proven will not be made generally available to the public. Therefore site specific information and results of the strategy implementation will not be generally available until either Stage 3 or 4, with positive identification of any contaminated land.

(120) For land identified as contaminated land, details will be held on the s78(R) Register. However, the Council may be asked for information about land that has not been identified as contaminated land, whether as part of a “local search” or for other reasons. The Environmental Information Regulations 1992 (SI 1992/3240 as amended) may apply to any information about land contamination and, as such, there may be a duty to disclose information. However, these regulations contain provisions related to confidentiality, national defence and public security. Where information collection and assessment is underway but is incomplete, the Council will take account of its own legal advice on whether disclosure is appropriate at that stage. Data Protection Act requirements will apply to information held on individuals.

(121) Where personal information about an individual or group of individuals must appear on a public register, i.e. where land is designated as Contaminated Land and the persons have been identified as Appropriate Persons, written notice will be given stating that their details will be published.

10. LAND FOR WHICH THE COUNCIL IS DIRECTLY RESPONSIBLE

(122) There is land for which, if identified as contaminated land, the Council may have direct responsibilities by virtue of its current or former ownership or occupation. The principal category is likely to be Council-owned land which has had former industrial use and for which the “original polluter” (Class A person as defined in the statutory guidance) may no longer be identifiable. Such land, if contaminated land, may fall to the Council to address. The Council may also be the current or former owner of formed (closed) landfill sites and may have responsibilities in this regard.

(123) The Council is committed to applying to contaminated land in its current or former ownership the same principles that will be applied to other contaminated land. In particular, the staged approach to identification described in Chapter 4 is equally relevant to land in Council ownership. Should the Council, as landowner, become aware of specific concerns, these will be progressed on a similar basis of priority and risk assessment as for land in other ownership. The Council will endeavour to manage any sites it is responsible for at the earliest opportunity within the risk-based prioritisation of all sites across the Borough.

(124) In certain situations, additional central government funding may be available to the Council (“supplementary credit approvals”) to address such contaminated land. The Council will seek such funding where appropriate.

(125) HBC accepts that not only is the authority a regulator, it is also a landowner. This authority will seek to be open, transparent and consistent in its approach when dealing with the inspection and where necessary the remediation of land that may be statutorily contaminated.

(126) Information will be sought concerning land owned by HBC, initially from the Directorate of Legal and Administration Services. Further internal liaison will take place where information exists to perform a full risk assessment.

(127) Where land is found to be posing a significant risk or causing significant harm, consultation will be made with the Environment Agency and any other relevant bodies, (for example English Nature, where necessary). External consultants will be engaged for specialist, third-party advice and recommendations.

11. REVIEW AND UPDATE PROCEDURES

(128) The Council recognises that its strategy for the identification of contaminated land is, in essence, a probabilistic approach. Although the ultimate aim is to identify all contaminated land, in practice the identification process is necessarily governed by the principle of “diminishing returns”. Thus the aim is not to *prove* the status of every piece of land within the Borough, but rather to adopt a logical, robust and defensible approach in which effort is proportional to risk and priorities are set appropriately. This is consistent with a Best Value approach.

(129) Periodic review of the strategy is therefore appropriate. The following types of review and update are likely to occur:

- review of the benefit versus cost of increasing the range of datasets used in the Stage 1 identification process. Additional datasets can be added to the GIS system at a later stage. Similarly, the costs versus benefits of carrying out additional desk studies will be reviewed;
- review of the scientific assumptions made in later stages of the assessment process. Such a review may be triggered by significant changes in the understanding of the behaviour of potential pollutants (e.g. new authoritative guideline values or modelling parameters may be published);
- re-assessment of the inspection findings in relation to particular land. This may be, for example, because there has been a change in the land use (the receptor), because there is new evidence of land use (e.g. persistent trespassing on industrial land by children) or because of reported health effects apparently associated with the land;
- update of the GIS system to reflect additional relevant information that arises (e.g. from the Environment Agency in relation to groundwater or surface water abstractions and information from development-related site investigations).

(130) Information systems related to the identification of contaminated land are to be viewed as essentially ‘live’ systems. Although updates periodic updates are expected for reasons of efficiency (say every 3 months), where any new information is expected to have potential implications for human health, this will be “fast-tracked” and the implications examined as a priority.

(131) This strategy will be reviewed within two years following adoption and then at intervals of not less than four years. The objective of the review will be to ensure that the strategy is efficient and effective in the application of resources to the identification of contaminated land. The timing of reviews will be influenced by any revision of statutory guidance issued under Part IIA of the Environmental Protection Act 1990. Review of the strategy will seek to ensure that the approach taken remains consistent with current best practice.

12. INFORMATION MANAGEMENT

(132) Access to information by members of the public is discussed in Chapter 9 and provision of information to the Environment Agency is discussed in Chapter 8.

(133) As discussed in Chapter 4, the GIS system will form the hub of information management for the identification of contaminated land. Initial risk modelling and scoring of identified sites will be carried out within the GIS. When further information becomes available through Stage 2 and 3 studies, the GIS can be updated accordingly.

(134) It is proposed that the GIS will also store supplementary data, such as text summaries of site investigation reports, legal opinions, etc which can be cross-referenced to their existing file system locations. The entire body of information associated with Part IIA could, of course, be stored electronically in a single purpose-built database. However, it currently appears that the screening system will mean that relatively few sites will be subject to detailed study (such as ground investigation) outside of the planning process. Hence, it would be a disproportionate use of resources to build a fully comprehensive database system. Instead, it is considered more appropriate to store key data electronically with clear cross-referencing to hard copy as necessary and appropriate, utilising standard file referencing structures. However, the electronic system can be expanded further in the future as is considered appropriate at the time.

(135) The information obtained under Part IIA is likely to prove particularly useful to development control (in the context of planning applications) and hence provision of full access to that service is planned.

(136) With the rapid development of delivery of services over the internet, Havant will keep under review the cost-effectiveness of an on-line “pay-as-you-go” search facility for the legal and property sector to access the s78(R) Register of remedial actions. However, provision of information sourced from third parties would be subject to licence agreements that usually do not allow commercial exploitation. In the interim, electronic requests for information could be submitted by members of the public and professional users, via email (which could, in the future, be direct from the Borough’s internet site).

13. SUPPORTING INFORMATION

13.1 Relevant Legislation

All of the Acts / Statutory Instruments Listed below are available free of charge, in full text format at Her Majesty's Stationers Office (HMSO) web site:

<http://www.legislation.hmso.gov.uk/legislation/uk.htm>

- Environmental Protection Act 1990 (c.43)
- Environment Act 1995 (c.25)
- Contaminated Land (England) Regulations 2000; SI 227
- Contaminated Land (England) (Amendment) 2001; SI 663
- The Conservation (Natural Habitats, &c.) Regulations 1994; SI2716
- Water Industries Act 1991 (c.56); (Water Supply)
- Water Resources Act 1991 (c.57); (Classification of Quality of Waters)

13.2 Documents referenced

13.2.1 Associated guidance

- *'Contaminated Land Inspection strategies, technical advice for local authorities' [“The Statutory Guidance”]; DETR, & EA; May 2001; Available free of charge from DEFRA's Web Site;*

<http://www.defra.gov.uk/environment/landliability/pdf/la-inspect.pdf>

- *'Local Authority Guide to the Implementation of Part IIA of the Environmental Protection Act (c.43) 1990'; DEFRA, EA, CIEH & LGA; July 2001; available free of charge from LGA's Web Site;*

<http://www.lga.gov.uk/lga/enviroment/contamination.pdf>

- *'DETR Circular 2/2000, 'Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990'; DETR; 2001; ISBN: 0 11 753544 3 (£13.50). Also Available free of charge from DEFRA's Web Site;*

<http://www.defra.gov.uk/environment/landliability/circ2-2000/>

13.2.2 Referenced Documents & Information resources

- *'Communicating Understanding of Contaminated Land Risks'* SR97(11); Available free of charge from:

SNIFFER
SEPA Head Office,
Erskine Court,
The Castle Business Park,
Stirling,
FK9 4TR

Tel 01786 457700

Environment Agency
R&D Dissemination Centre,
c/o WRC
Frankland Road,
Swindon,
Wilts
SN5 8YF

Tel 01793 865000

Email publications@wrcplc.co.uk.

The Foundation for Water Research
Allen House,
The Listons,
Liston Road,
Marlow,
Bucks
SL7 1FD

Tel: 01628 891589,

email: office@fwr.org.uk,
web site www.fwr.org

- *'Solent European Marine Site, Regulation 33(2) document'* (under the Habitat regulations 1994); Available free of charge from:

English Nature,
Hampshire & Isle of Wight Team Office,
1 Southampton Road,
Lyndhurst,
Hampshire

SO4 7BU

- *'Havant Borough Council District Wide Local Plan'*; Available online, free of charge at:

<http://www.havant.gov.uk/Council/localplan/Page03.pdf> - For an overview layout of Mainland Maps (Nature Conservation Areas etc.), Map Legend, and links to smaller scale map tiles

<http://www.havant.gov.uk/PDF/Hayling%20Overview.pdf> - For an overview layout of Hayling Island Maps (Nature Conservation Areas etc.), Map Legend, and links to smaller scale map tiles

- *'Havant Borough Council River GQA Results'* (and additional environmental information); available free of charge online at:

<http://environment-agency.gov.uk/yourenv/?lang=e> ; follow links to 'what's in my back yard' for graphical representation of a range of environmental quality mapping information, along with associated archive information; or

http://www.environment-agency.gov.uk/yourenv/eff/water/213902/river_qual/?version=1&lang=e for an overview of the principles and methods behind GQA's.

- *'A guide for safe working on contaminated sites'*, CIRIA Report 132, Steeds JE et al., 1996; ISBN 0 86017 451 4

List of Abbreviations

13.2.3 Agencies / Authorities / Organisations

BGS	- British Geological Survey
CIEH	- Chartered Institute of Environmental Health
CIRIA	- Construction Industry Research & Information Association
DEFRA	- Department for the Environment, Farming & Rural Affairs
DETR	- Department for the Environment, Transport & Regions
<i>DfT</i>	- Department for Transport
DoE	- Department of the Environment
EA	- The Environment Agency
EH	- English Heritage
EN	- English Nature
FSA	- Food Standards Agency
HBC	- Havant Borough Council
HCC	- Hampshire County Council
HMSO	- Her Majesties Stationers Office
HPA	- Health Protection Agency
HSE	- Health & Safety Executive
LGA	- Local Government Agency
PCT	- (East Hampshire) Primary Care Trust
SEPA	- Scottish Environmental Protection Agency
SNIFFER	- The Scotland and Northern Ireland Forum for Environmental Research
SoS	- Secretary of State

13.2.4 Conservation Designations

ANOB	- Area of Outstanding Natural Beauty
LNR	- Local Nature Reserve
RAMSAR	- Site Designated under the RAMSAR Convention on Wetlands of International Importance
SAC	- Special Area of Conservation
cSAC	- Candidate SAC (See above)
SINC	- Site of Importance for Nature Conservation
SPA	- Special Protection Area
SSSI	- Site of Special Scientific Interest

13.2.5 General

GIS	- Geographical Information System
GQA	- General Quality Assessment
IPC	- Integrated Pollution Control
SIS	- Spatial Information System
SPT	- Source, Pathway, Target (i.e. 'pollutant linkage' definition)