

GroundSure Commercial Environmental Reports User Guide

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To be used with the
Risk Screening Report
GroundSure Environmental Review

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1. Introduction

GroundSure's Commercial Reports provide high quality environmental intelligence that allows property professionals and their clients to make informed property decisions.

As UK leaders in the production of a wide range of **risk rated and interpreted environmental reports**, our Institute of Environmental Management and Assessment (IEMA) accredited professionals give intelligent balanced advice on the environmental issues you face. GroundSure also provides peace of mind – not least because we reduce exposure to negligence claims for property professionals, enabling property purchasers to conduct well informed property negotiations and help to guard buyers from property blight.

2. What is a Commercial Report?

In each of our Commercial Reports, we answer a range of pertinent questions. The scope of these questions is set out in Section 9.0 of this User Guide. In preparing its reports, GroundSure uses a comprehensive range of regulatory and private data sources that also contain historical land use information dating back to the late 19th Century.

The Risk Screening Report (RSR) is a review by our IEMA accredited experts of the environmental data for the requested site. The experts review available historical mapping at the scale of 1:10,000 and 1:10560. In London and Bristol, this data collection is supplemented by analysis of 1:2,500 scale maps providing additional detail. We aim to produce the report within two working days.

The GroundSure Environmental Review (GER) is an expert assessment of both the available historical Ordnance Survey mapping at the scale of 1:1,250 and 1:2,500 to a minimum radius of 250m from the study site boundary, and also of the specified environmental data for the requested site. This is supplemented by data drawn from the database generated by a systematic analysis of 1:10,000 and 1:10,560 scale mapping across England, Wales and industrialised areas of Scotland. We aim to produce the report within five working days.

3. Why do you need a Commercial Report?

Implementation of Part IIA of the Environmental Protection Act (EPA) 1990 now places **liability** for **contaminated land** on the current owner or occupier where a 'past polluter' cannot be traced.

There have been a growing number of instances where a failure by a Solicitor to advise on environmental risks and to make diligent environmental enquiries has led to a successful claim for damages.

As a result, in June 2001, The Law Society warned all Solicitors to be aware of the liabilities attached to contaminated land. Further details and guidance are available in the following publications:

The Environmental Handbook, 2002, Fifth Edition, *The Law Society*

Local Authorities and other statutory bodies do not yet have the full range of information required to determine risk for all environmental issues. Specialist environmental advice is essential for information on historical land use, flooding, subsidence, and risk from toxic substances.

4. How to order Reports

Commercial reports can be ordered through our Online Ordering System; this can be accessed through www.groundsure.com. If you require advice on any aspect of our service, or require a User Guide for our Online System please contact our Technical Helpline on 01273 819 700. Commercial reports can be expedited and are covered by our professional indemnity insurance.

GroundSure's Online system uses the latest mapping techniques and technology to enable you to locate your property. However, if you are unable to locate your property using our system, we also provide a manual option which enables you to send a request with a site location plan or Land Registry Plan by post (including DX), fax or via email.

GroundSure's Online system also allows the user to specify the current and proposed land use which assists us during the risk assessment procedure.

5. Paying for Reports

Commercial Reports can be ordered and paid for by cheque on an ad hoc basis. Alternatively, account arrangements can be set up for customers who use GroundSure's services regularly. This involves sending you a single itemised monthly invoice listing all the reports you have ordered during that period. GroundSure's unique referencing system ensures a clear audit trail for every report purchased.

6. Report Limitations

We do not undertake a physical site inspection of the property/site for either our Risk Screening Report or GroundSure Environmental Review.

Although we take professional care to identify, prepare and use the best databases available for reasonable cost, it is not always practicable to make any large environmental database error free. GroundSure cannot be held responsible for errors held with third party datasets used within our reports.

If we issue a copy of an existing Commercial Environmental Report to a third party that wishes to rely on it, we will not reassess the Site.

The data used in all of our reports is derived from the databases detailed within the appendices of this user guide. GroundSure may use a substitute database at its discretion and will not usually inform the client of this.

We obtain historic maps from various sources, none of which can guarantee access to any particular map. It may therefore be impractical to obtain a copy of all of the maps that we would ideally inspect in the time available. We will inform you if we consider that we have not been able to obtain enough maps to make a reasonable judgement of the environmental risks.

All of our assessments are based upon the current and proposed use of the study site as indicated by the Client. If the Client does not specify a current and proposed use, GroundSure will make assumptions based upon the information available to us. If this use of the site is incorrect or is changed, it may render the site more sensitive and increase the risk of the site being designated as "Contaminated Land".

Our assessments do not take account of any factor that is not discernible from our sources of information, such as the structural integrity of any building on the site, or the presence of asbestos containing materials contained within the fabric of the building.

Information made available to GroundSure on site plans provided by Clients will not be used to assess Environmental Hazards within our reports.

You must satisfy yourself that the report is suitable for your needs. The higher the specification of the report you order, the more reliable the risk assessment will be. GroundSure suggests that you should carry out a cost benefit analysis before selecting your preferred report.

7. Our Terms and Conditions

GroundSure's Commercial Reports are covered by our Professional Indemnity Cover and are governed by our Terms and Conditions, a copy of which is provided with each report. The Terms and Conditions can be seen in Appendix I, on the GroundSure website (www.groundsure.com) or provided by post on request.

8. GroundSure's Data

8.1 How is the Report Organised?

GroundSure prides itself on the clarity of the data provided and the interpretations made ensuring that you can identify the relevant information immediately and understand it. The report sections are:

- Expert Assessment
- Executive Summary (identifying contamination sources, contaminant pathways and sensitive receptors, including recommendations where necessary)
- Risk Rating and Guidance
- Environmental Sensitivity
- Additional Comments and Findings
- Contacts
- How to Use the Report
- Historical Mapping and other Environmental Data
- GroundSure's Risk Assessment Methodology

8.2 How is the Data Organised?

The data within GroundSure's Commercial Reports is arranged in logical sections to help you interpret the results. The report sections are:

- Historical Industrial Sites
- Incidents and Registers
- Landfills and Other Waste Sites
- Current Land Use
- Natural Hazards
- Ground Workings
- Environmental Setting

Each section deals with a specific range of environmental information and provides a summary of the information found within the search radii. If no information is found under a particular search category, then a negative response is reported.

Datasets are also represented on the maps presented within the report. These give a graphical representation of the findings of the report. Each data record has a unique identification number that links it to its map position. Each data record provides the distance and direction from the study site of that record.

8.3 Data Quality

Where the data used is not owned by GroundSure we use third party data. We only select those suppliers who can provide high detailed, quality data that is both accurate and reliable at a reasonable cost. Where we modify data, strict quality control procedures are used, as set out by our in-house panel of IEMA accredited environmental consultants.

GroundSure encourages and promotes the continuous improvement of its products and operates a continual data enhancement program in order to identify and correct errors. If a potential inaccuracy is found in a report, it should be reported to GroundSure who will log, check and amend it if necessary.

8.4 Data Sources

Data contained in the Commercial Environmental Report is gathered from a wide range of regulatory and commercially owned data sources, including our own. These data sources together with their update cycles are outlined in Appendix II. A summary of the data we provide (including the search radii used) can be found in Table 1 below.

Table 1 – Data Sources

Dataset	Search Radius from the boundary of the Site (metres)	
	RSR	GER
Historical Land Use (1:2,500)	500 ¹	250
Historical Land Use (1:10,000 and 1:10,560)	500	500
Environment Agency Recorded Pollution Incidents	250	250
Sites Determined as 'Contaminated Land' (Part IIA)	500	500
Landfill Sites ²	1500	1500
Other Waste Sites	500	500
Environment Agency (REGIS) Waste Sites	1500	1500
Current Industrial Sites Data	500	500
Part A Licences (IPC & 1PPC Processes)	1000	1000
Radioactive Substance Licences ³	250	250
Water Industry Referrals	500	500
Red List Discharge Consents	500	500
Dangerous Substance Inventory Sites	500	500
Part B Licences (LAPPC Processes)	250	250
Licensed Discharge Consents	250	250
Petrol and Fuel Sites	500	500
Dangerous or Hazardous Sites	500	500

¹ London and Bristol only

² Environment Agency Registered Landfill Sites are only searched to 1000m

³ Category 3 and 4 Radioactive Substance Authorisations are only searched to 250m

Environment Agency Zone 2 Floodplains	25	25
Environment Agency Zone 3 Floodplains	25	25
Areas Benefiting from Flood Defences	25	25
Natural Subsidence	75	75
Radon Affected Areas	75	75
Radon Protective Measures	75	75
Coal Mining	75	75
Shallow Mining	75	75
Potentially Infilled Land (1:10,000 and 1:10,560)	500	500
Groundwater Vulnerability	200	200
Soil Leaching Potential	200	200
Water Abstraction Licences	1000	1000
Source Protection Zones	500	500
River Quality	500	500
Designated Sites	500	500

8.5 What Does the Data Mean?

GroundSure has carefully selected a range of key datasets for use in Commercial Reports. These clarify a range of factors, which may present a human health or property valuation issue, and have been chosen on the basis of their potential to cause harm. The following section is intended as a basic outline of the implications of these sets of data and the possible effects specific factors may have.

8.5.1 Past Land Uses

Information on potentially contaminative historical land uses in a Risk Screening Report is gathered from a review of data drawn from a database generated by a systematic analysis of 1:10,000 and 1:10,560 scale mapping across England, Wales and industrialised areas of Scotland. In London and Bristol, this data collection is supplemented by analysis of 1:2,500 scale maps providing additional detail.

Information on potentially contaminative historical land uses in a GroundSure Environmental Review is gathered from a manual review of actual, large scale (1:2500 and 1:1,250) historical mapping of the study site and immediate surrounding area. This is supplemented by data drawn from the database generated by a systematic analysis of 1:10,000 and 1:10,560 scale mapping across England, Wales and industrialised areas of Scotland. The shapes identified from pre 1955 large scale mapping are superimposed upon a recent Ordnance Survey map covering the study site within 250m radius of the study site. Due to copyright, post 1955 shapes can not be represented on mapping but are indicated as point references, marking the centre of a particular land use.

Map Epochs

Map surveys across England, Scotland and Wales have taken place by the Ordnance Survey at intervals since around 1870, although surveys in rural areas have been conducted less frequently than in urban areas.

The term 'map epoch' refers to the general date at which a particular survey took place, as exact dates for the same map edition can vary from area to area. Some map epochs may relate to several map surveys, however generally the categories used by GroundSure relate to the time periods presented in the table below.

Table 2 – Interpretation of Map Epochs

Map epoch	Approximate time of survey
1	1880
2	1900
3	1910
4	1930
5	1950
6	1980

The length of time and the date at which particular land uses took place is important for a number of reasons. Generally, contaminants tend to break down over time and therefore the longer the time period since activities at a site ceased, then the less likely it is that residual contaminants may remain. This of course is highly dependent upon the specific nature of activities and the properties of underlying soils at a site. Similarly, the greater the length of time that activities took place, then the greater the likelihood that contaminants may be present. Using their knowledge, personal experience and available literature, experienced consultants can make further informed assessments based on this information. For example, a consultant may know that industries operating at specific time periods present a particular risk.

Historical Land Use Risk Rating

Risk assessment of historical data is a complex discipline and generally should only be undertaken by suitably qualified professionals. However, it is feasible to ascertain the generic risk and potential for contamination from some past operations using specialist documentation and relevant site experience. GroundSure currently holds, and continues to add to, an extensive list of almost 6000 different potentially contaminative land uses identified from historical mapping.

The generic risk and site-specific contamination associated with a range of past industrial uses is detailed in Appendix III. This is intended to provide general information to users of Commercial Reports, but it should not be used as a definitive guide to site-specific risk and contamination. If you are in any doubt about the risk a site may pose, you are advised to contact GroundSure's Free Technical Helpline.

Infilled land

Infilled land is a term that is used to describe any area of land identified from examination of historical mapping that can be inferred to have been infilled at some point in the past. For example, a former quarry may appear on early map editions, but later map editions may show that the quarry is then occupied by an industrial estate.

These types of sites can include quarries, canals, small pits, ponds, streams, bogs, lagoons and drainage channels. For ease of reference GroundSure has merged the water based infilled features (ponds etc.) and non-water based infilled features (pits and quarries etc.) to provide a single data source.

Areas of infilled land may be significant, as sometimes the material used to fill such features is not documented. Subsequently, problems may occur if the material used to fill such areas is harmful. Infilling often occurs from unauthorised dumping or from the use of industrial waste products to fill excavated areas adjacent to industrial sites. For example, brickfields may initially be excavated to supply clay for brick production and then be infilled with wastes from nearby brick kilns. Such wastes, although largely inert, can contain high concentrations of arsenic and other heavy metals. Additionally infilled areas can present structural problems such as subsidence.

8.5.2 Landfill and Waste Sites

The Control of Pollution Act (CoPA), 1974 introduced for the first time a licensing regime for waste disposal and treatment facilities in the UK. Prior to 1974 such activities were not controlled and very little in the way of records for such activities exist. More recently, increasingly stringent legislation has been enacted following the implementation of the EU Landfill Directive (2002), to manage such facilities and reduce their environmental impacts. Currently waste management licenses are used to regulate landfill sites, transfer stations and chemical treatment works. These licences have been issued under the EPA 1990.

Information contained in this section is provided by various suppliers including the Environment Agency and the British Geological Survey (BGS) as well as GroundSure's own enhanced Local Authority Landfill Sites Database.

Waste sites can vary greatly in the risk they may pose, both in terms of health and/or financial liability. Sites can range from small local waste transfer sites (civic amenity and recycling centres) through to extensive landfills, which may be licensed to accept hazardous materials (asbestos and solvents etc). The following description outlines the different sites that are categorised within the GroundSure Commercial Reports.

Landfill sites

Landfill sites pose an environmental risk due to the potential for the generation of ground gases (methane and carbon dioxide) and leachate (a toxic liquid). Landfill gases can migrate up to 500m from their source, and if a site is not properly lined, leachates may move through soils and porous rocks significant distances depending on the underlying ground conditions. If a landfill site is close to a property, it is often advisable to contact the Local Authority or Environment Agency who may hold further information regarding the site. Key factors in assessing the risk a site may pose include the length of time the site was operational, the type of waste materials accepted at the site, whether the site was properly engineered and whether or not any subsequent soil or gas investigations have been carried out.

It should be noted that grid references supplied in relation to many closed landfill sites relate to a centre point or sometimes even a site entrance. Landfills can be extensive in size and if no boundary information is readily available or quality assured, additional caution should be exercised. In light of this, GroundSure search for landfill sites to a distance of at least 1500m and recommend further enquiries for sites which do not pass the GroundSure assessment process.

For historical and operational landfill sites, GroundSure use the latest polygonised data supplied by the Environment Agency. This provides boundary information illustrating the extent of historic and currently operating sites. In cases where these may correspond with other landfill data within our reports a greater level of confidence for risk assessment decisions regarding landfills can be assumed.

Waste Treatment, Transfer and Disposal Sites

These records relate to sites where waste is temporarily stored and/or treated before it is then recycled or transported to landfill. Examples of such facilities include civic amenity sites and waste transfer stations where materials are sorted and bulked up prior to disposal.

Most civic amenity sites normally accept small quantities of materials, of which only a small proportion may be putrescible (i.e. capable of decomposing). The main risk at these sites relates to the storage of used engine oils, batteries and other more toxic materials on site. In addition, if such sites are poorly managed they may create a nuisance factor through the creation of noise, dusts and odour.

Some larger transfer stations may accept large quantities of domestic wastes, much of which may be putrescible in nature. Refuse is transported to the site in refuse trucks operated by local contractors and deposited in concrete lined storage areas which are usually under cover. On some sites, fine water jets are positioned along the borders of this storage area to prevent dust particles becoming airborne.

Once this waste has built up, larger vehicles (in some cases trains) transport the waste to licensed landfill sites or waste incinerators. Modern transfer stations are normally carefully managed and covered with extensive hard standing (concrete or similar material), so in this instance risks are limited to the generation of odours and airborne particles. However, this may not apply to all sites and therefore each location should be assessed on an individual basis depending upon the nature of wastes stored, the environmental sensitivity of the area and the standards of environmental management.

For example, transfer stations licensed for the treatment and transfer of difficult wastes may hold significant quantities of potentially contaminative, toxic, carcinogenic and/or explosive materials. If managed effectively these sites may only pose a low risk. However, careless operations could allow the release of contaminative materials and therefore pose an environmental risk.

Scrap Yards

Scrap yards can pose a significant hazard due to the nature of materials stored on site and because some sites may not be operated effectively. Potential contaminants include oils, solvents, asbestos and radioactive materials. The transfer of contaminants may occur by leaching of water-soluble compounds through soils and groundwater and by the wind-borne dispersion of materials such as asbestos fibres. Scrap yards include a wide range of sites ranging from car dismantlers or breakers to metal recycling sites.

Incinerators

If managed effectively incinerators should not pose a significant public health risk. However, there have been cases where such sites have released quantities of hazardous substances (most notably dioxins) to the environment. Therefore, such sites may pose a higher risk than other types of waste sites. Modern incinerators operate under Integrated Pollution Prevention and Control (IPPC) regulations and are strictly monitored by statutory bodies. They also incorporate complex technology in order to minimise any risk they may pose.

8.5.3 Industrial Sites and Processes

This section of the report covers a wide range of current industrial uses and activities some of which may be regulated under current environmental legislation. Within this section, searches are made of the following databases:

- PointX Dataset of Current Industrial Uses
- Catalist Petrol and Fuel Sites
- Part A Licences (IPC & IPPC Processes)
- Part B Licences (LAPPC Processes)
- Radioactive Substance Authorisations
- Licensed Discharge Consents
- Dangerous Substance Inventory
- Dangerous or Hazardous Sites
- Sites Determined as Contaminated Land
- Recorded Pollution Incidents

Current Industrial Uses

Data on potentially contaminative current industrial uses is sourced from the PointX Dataset of Current Uses. Such sites have been chosen following careful consideration of the industrial classifications provided by Thompson Directories. GroundSure then analyses this data and selects specific sites for inclusion in the GroundSure database dependent on the potential for contaminative activities having taken place.

Petrol and Fuel Sites

Petrol and fuel sites may pose a risk due to spillages and leakage of hydrocarbons from above or below ground storage tanks and associated pipework. In some situations petrol and diesel can migrate significant distances through underlying soils and groundwater.

The risk a specific site may pose will depend upon the age of the site, the integrity of fuel storage tanks and the specific nature of operations at the site. Generally, more modern petrol and fuel sites will pose less of a risk than older sites. More dated smaller rural facilities often pose an elevated risk, although such stations have witnessed a sharp decline in recent times and are often redeveloped for residential purposes.

Data on petrol and fuel sites is derived from data supplied by Catalist Limited. This data includes information on current, closed and redeveloped sites and is summarised in the following table.

Table 3 – Petrol and Fuel Sites Data Fields

Data Field	Description
Not Surveyed	No further information is yet available on this site and a site survey is required.
Open	Site is currently operating.
Under Development	Site is closed for development or redevelopment and there is evidence to suggest that construction work is in progress.
Closed	Site is not retailing petrol, however the canopy and pumps are still present.
Out of Industry	Site is not retailing petrol and likely to be in other use such as car sales.
Obsolete	Site is not retailing petrol, and has been redeveloped for alternative use (flats, offices etc.).

The data held by Catalist is constantly being updated along with improvements to the locational accuracy of such sites. GroundSure also maintains its own fuel station database. This information has been obtained through the systematic analysis of high detailed mapping.

Part A Licences (IPC and IPPC Processes)

Part I of the EPA 1990 introduced the concept of Integrated Pollution Control (IPC) for potentially polluting large scale industrial (Part A) processes such as chemical manufacture, oil refining and paper manufacture. Such sites carrying out such activities need to apply to the Environment Agency (or Scottish Environmental Protection Agency (SEPA) in Scotland) for an authorisation to operate such a process. In turn, the Environment Agency will regulate and check the process to ensure that it meets current good practice and that any emissions (to land, air and water) are within prescribed limits. In some cases, emissions may be monitored by the Environment Agency and the levels of such compounds are kept on a register of chemical releases (Chemical Releases Register).

Under recent legislation, IPC or Part A processes will be regulated under the concept of IPPC. This is required by the Integrated Pollution Prevention and Control Directive (1996) and will be

implemented via the Pollution Prevention and Control (England and Wales) Regulations 2000. Once all sites have been brought within the new regulations, Part I of EPA 1990 will be revoked.

Part B Licences (LAPPC Processes)

Under the EPA 1990 Local Authorities now have powers to control air pollution from a range of prescribed (Part B) processes. In Scotland the same powers were transferred to the SEPA. The prescribed processes include operations such as the burning of waste oils, paint spraying operations and petrol vapour recovery processes.

Under recent legislation Local Authority Pollution Prevention and Control (LAAPC) or Part B processes will be regulated under the concept of Integrated Pollution Prevention and Control, as required by the Integrated Pollution Prevention and Control Directive (1996). This will be implemented via the Pollution Prevention and Control (England and Wales) Regulations 2000 and once all sites have been brought within the new regulations, Part I of EPA 1990 will be revoked. Under this legislation some sites will be classified as A2 sites and will then be regulated by the Environment Agency, the remainder will stay within the jurisdiction of Local Authorities.

Radioactive Substance Authorisations

The keeping, use, accumulation and disposal of radioactive substances in the UK is regulated under the Radioactive Substances Act (RAS) (1993). The main purpose of this Act is to provide protection to members of the public from radiation.

RAS sites are divided into four categories depending upon the potential risk to the public, these categories are described in greater detail in the table below.

If managed correctly and regulations are not breached, most low category (RAS 3 and RAS 4) sites pose a relatively low risk. However, higher category sites (nuclear power stations and reprocessing sites) are no longer allowed to be shown within the report due to national security.

Table 4 – Radioactive Substance Authorisation Sites

Site Category	Description
RAS1*	Large nuclear installations that both store and re-process nuclear fuels on-site e.g. Sellafield.
RAS2*	Large nuclear installations that both store and process nuclear fuels on-site e.g. nuclear power stations.
RAS3	Registered sites that are authorised to accumulate and dispose of radioactive materials. Only non-nuclear operations are carried out on site e.g. Hospitals.
RAS4	Registered sites that keep and use radioactive material e.g. mobile laboratories and plants. Only non-nuclear operations are carried out on site.

*RAS1 and 2 data are no longer permitted to be shown within our reports due to a change in Government Regulations

Licensed Discharge Consents

Any site wishing to discharge either treated or untreated effluent to controlled waters (e.g. a stream, river, lake) requires a Discharge Consent. These consents are granted and controlled by the Environment Agency under the Water Resources Act 1991 and the Environment Act 1995 (regulated by SEPA in Scotland). If consent is granted, then conditions will be included to ensure compliance with Statutory Water Quality Objectives (SWQOs) for that particular water body. Absolute limits will be set for discharges and other factors such as provision of facilities for sampling and monitoring provided.

Furthermore, GroundSure's Commercial Reports includes records of sites discharging Red List substances to controlled waters. Under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991, sites discharging certain substances, regarded as exceptionally toxic, persistent or bio-accumulative, must hold consents to discharge under these Regulations. The Regulations provide a full listing of the substances in question, identified as Red List substances. Such discharge consents will set absolute limits for discharges and detail other factors such as provision of facilities for sampling and monitoring. Consents aim to ensure that the stringent SWQS provided under The Surface Waters (Dangerous Substances) (Classification) Regulations 1989 (as amended) are met.

Also included within this category are Water Industry Referrals. A sewage undertaker makes a Water Industry Referral to the Environment Agency when an industry applies to discharge a Special Category Effluent. This is a trade effluent that discharges to the public sewer that contains particular substances, or that derives from specific processes.

Under the Trade Effluents (Prescribed Processes and Substances) Regulations 1989 (SI No.1156) (as amended), the Environment Agency has powers to regulate the discharge of Special Category Effluents, including Red List substances, effluents from the production of chlorinated organic chemicals, effluents from paper board and pulp processes into public sewers.

Once a Consent to Discharge has been granted, details will appear on the Trade Effluent public register which is held by the relevant Water Utility Company.

Dangerous Substance Inventory

The Dangerous Substances Inventory dataset includes site discharges regulated under The Surface Waters (Dangerous Substances Classification) Regulations 1989 (SI 2286), amended in 1992 and The Surface Waters (Dangerous Substances Classification) Regulations 1997 (SI 2560) and 1998 (SI 389).

These regulations specify water quality objectives for a number of key substances specified by various European Union Directives. Such substances include specific Black List (List I) substances and a total of 20 List II substances that are highly toxic and include a number of chlorinated solvents. The main sources of such substances include large heavy industrial processing and manufacturing plants and large sewage treatment works.

The Environment Agency is responsible for ensuring compliance with these Regulations and routinely conducts sampling, analysis and monitoring of the watercourses to determine any detrimental effect these discharges may be having. Monitoring is usually carried out by the Environment Agency downstream of the discharge on a quarterly basis. The Environment Agency also determines whether the requirements of each classification are being met. Every dangerous substance listed has a concentration limit known as the Environmental Quality Standard (EQS). This is normally an upper limit set for each watercourse that receives a dangerous discharge.

Dangerous or Hazardous Sites

This section of the report provides information on sites that operate under the Control of Major Accident Hazards (COMAH) Regulations which came into effect in England and Wales in April 1999, these regulations amend both the Planning (Hazardous Substances) Act 1990 and implement the requirements of the COMAH Directive (1996). The section also includes sites that come under the Notification of Installations Handling Hazardous Substances (NIHHS) Regulations (1982).

The aim of the COMAH Regulations is to require the development of land use policies around COMAH sites and ensure an increased emphasis on safety management. Under this legislation, the planning authority must take land-use controls into account when considering modifications to COMAH sites or new developments in the vicinity of COMAH sites. The Planning Authority must also ensure that development decisions in relation to COMAH sites should aim to minimise any risks to human health and the environment.

COMAH sites are regulated by the Health and Safety Executive (HSE). They are categorised according to the amount of specified hazardous substances that they store, above a controlled quantity either singularly or in aggregate. Applications, consents and their conditions, modifications, revocations etc. are all recorded on a public register (these regulations do not apply to controlled wastes or radioactive wastes which are subject to control under the EPA 1990 and the Radioactive Substances Act 1993 respectively).

Examples of COMAH sites would include large chemical and petrochemical installations and similar sites which produce or use substances with flammable, toxic or explosive properties, or that are hazardous to the environment.

The operators of certain sites with very high quantities of dangerous substances must now record their safety procedures in a safety report. Safety report is a document written by the site operator to demonstrate to regulators that all the necessary measures have been taken to prevent a major accident. This document is independently checked by the HSE and Environment Agency (SEPA in Scotland) inspectors and is reviewed every five years. The document includes policy on how to prevent major accident hazards, as well as information about the emergency plan for the site. It is also used by the relevant Local Authority and fire brigade when drawing up an off-site emergency plan.

Further information regarding COMAH sites is available at the following website – www.hse.gov.uk/comah/

The dataset also provides detailed information on sites that come under the Notification of Installations Handling Hazardous Substances (NIHHS) Regulations 1982 (as amended). These regulations specify dangerous substances and the quantities of these substances trigger obligations to notify the HSE of their use three months before such use commences. Such sites that require notification include gasholder sites, nitrate storage, gas cylinder storage and refilling depots.

Sites Determined as Contaminated Land (Part II A)

The implementation of Part IIA of the EPA 1990, on the 1st April 2000 in England and Wales, places responsibility on Local Authorities to identify contaminated land within its boundaries that may have a detrimental effect on human health, ecosystems or controlled waters. There are three sets of regulations that relate to England, Scotland and Wales. They are Contaminated Land (England) Regulations 2000 (SSI 227), Contaminated Land (Scotland) Regulations 2000 (SI 178), and Contaminated Land (Wales) Regulations 2001 (WSI 2197) respectively.

In essence, the Local Authority must identify a source of contamination, a pathway for contamination to migrate and a sensitive receptor which is or may be significantly affected by such contamination. This concept is commonly known as the Source-Pathway-Receptor paradigm.

Sites that have been determined as contaminated land by the relevant authority is collated by GroundSure from records held on the public register from Local Authorities and are routinely updated to reflect any changes.

Recorded Pollution Incidents

The Environment Agency (SEPA in Scotland) is required to investigate any pollution incidents and maintain a list of such occurrences. Pollution incidents are recorded as either a breach of a permit, license or consent or to an incident at an unregulated site. Such incidents are recorded as affecting either land and/or water. Typical recorded pollutants include asbestos, builders' waste, waste oil, fire fighting runoff etc.

The Environment Agency records four types of pollution incident categories depending on their severity to the environment. After careful consideration and consultation with the regulatory authority GroundSure only provide information on Major and Significant Recorded Pollution Incidents. Further information on Recorded Pollution Incidents is provided in the table below.

Table 5 – Recorded Pollution Incident Categories

Category	Description
Category 1 (Major)	Persistent effect on water quality, closure of abstraction point, extensive fish mortality, excessive breaches of consent conditions, significant effect on amenity value or conservation.
Category 2 (Significant)	Potential or actual effect on water quality, notification to water abstractors, significant fish mortality, water unfit for stock watering, bed of watercourse contaminated, reduction in amenity value.
Category 3 (Minor)	Low fish mortality, bed of watercourse only locally contaminated around point of discharge, minimal impact and amenity only marginally affected.
Category 4 (Unsubstantiated)	Reported incident, upon investigation no evidence can be found of incident having occurred.

8.5.4 Other Environmental Factors

This section of the report covers a wide range of naturally occurring environmental risks that commonly affect residential properties. When a property may be at risk from an environmental influence GroundSure highlights this in the Expert Assessment ('Certificate') page and the Risk Rating and Guidance page within a Commercial Environmental Report.

Flooding

GroundSure's Commercial Reports comment upon whether a property lies on or within 25m of an Environment Agency Zone 2 and Zone 3 floodplain. The Government's Planning Policy Guidance 25 on Development and Flood Risk (PPG25) explains how flood risk should be considered at all stages of the planning and development process in order to reduce future damage to property and loss of life. The Government looks to planning authorities to ensure that flood risk is properly taken into account in the planning of developments to reduce the risk of flooding and the damage which floods cause.

The Environment Agency Flood Mapping Strategy covers a five-year period from 2003 to 2008 and sets out to improve the quality and coverage of data and information on flood risk. One of the key outputs of the strategy is the production of the flood zones, which have been produced in accordance with Table 1 note (a) of PPG25, to enable planning authorities to apply the sequential test for development proposals and prevent inappropriate development.

PPG25 defines the flood zones as: -

- Zone 1 – little or no risk with an annual probability of flooding from rivers and the sea of less than 0.1%
- Zone 2 – low to medium risk with an annual probability of flooding of 0.1-1.0% from rivers and 0.1-0.5% from the sea.
- Zone 3 – high risk with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.

The flood zones are based on annual probabilities of flooding. It is unlikely, but possible, that a flood with, for example, an annual probability of 1% will occur two years running. The flood zones show the flooding that would occur to land without the presence of flood defences.

The flood zones provide more accurate and consistent information on flood risk using the definitions detailed in PPG25 than the previous Indicative Floodplain Map (IFM). GroundSure will continue to update and provide improved flood zone information over time and as it is released by the Environment Agency. The flood zones are the main constraint map underpinning decisions on development and flood risk.

The Zone 2 flood zone is represented on the Natural Hazards map by a green coloured polygon, the Zone 3 flood zone is represented on the same map by a blue coloured polygon where applicable. Areas that benefit from flood defences are identified by an orange hatched polygon. It should be noted that for any new development within such areas, the Environment Agency recommends a more detailed flood risk study.

Natural Subsidence

The overall risk rating is obtained from the amalgamation of six datasets, which are supplied and digitally combined by the BGS. More detailed information is also provided on the six individual datasets under the following headings.

Shrink swell – Clay rich ground has the ability to shrink or swell with seasonal changes in moisture content, or local changes such as leaks from drains etc.

Landslides - This is the outward and downward movement of rock or soil on a slope.

Soluble rocks - Soluble rocks such as moderately soluble limestone and chalk to highly soluble gypsum and salt can dissolve causing subsidence.

Compressible Ground – In certain areas if the ground is extremely compressible the building or parts of the building may sink below the surface of the surrounding ground.

Collapsible Rocks - These rocks usually consist of silt and can become unstable, resulting in a sudden collapse under load.

Running Sand – This is the flow of sand into an excavation or void due to water pressure.

Radon Potential

Radon is a radioactive gaseous element emitted naturally from rocks and minerals where radioactive elements are present. The Health Protection Agency (HPA) (formerly the National Radiological Protection Board) recommends an Action Level of 400 Becquerels per cubic metre. Where more than 1% of properties are estimated to exceed the Action Level the area should be regarded as radon affected, and limited preventative measures may be required such as underfloor extraction, internal ventilation or underfloor ventilation. Further information regarding such measures is freely available from the HPA and the following literature may be of use:

- Health and Safety at Work Act (1974)
- Management of Health and Safety at Work Regulations (1999)
- Ionising Radiations Regulations (1999)
- Building Regulations (2000)
- Construction, Management and Design (CDM) Regulations (1994)

Further information regarding radon, and a useful question and answer section, is available on the HPA website www.hpa.org.uk/radiation/

Assessing the levels of radon protection for new buildings is highly site specific and a complex issue. Due to the localised nature of Radon gas, an actual reading is suggested as the only sure way of assessing the radon level at a specific site. Additionally, local building regulation officers may be able to provide additional guidance regarding radon protective measures. Solicitors and other professional consultants are advised to consult this documentation for further information on this issue.

Radon Protective Measures

A guide has been published by the Building Research Establishment in conjunction with HSE offering practical cost-effective advice on remedies for most workplaces. For new properties, the Construction Design and Management (CDM) Regulations place a duty on the Planning Supervisor to identify all foreseeable hazards, including radon gas, which should be recorded in the Health and Safety Plan along with any mitigating measures required. Furthermore, the Building Regulations Officer is a Consultee during the planning process and should be able to

provide further information regarding radon protection requirements for new properties. GroundSure provides within the Commercial Environmental Reports an indication whether radon protection may be required at a site.

In many areas no radon protection will be required, however in areas where a high percentage of properties are radon affected basic or full radon protection may be necessary. Although GroundSure is able to indicate whether a property lies in such an area, because data on specific radon readings at individual properties is not yet available, a site-specific geological assessment and liaison with the local Building Control Officer would be needed to confirm the level of protection required. A geological assessment involves checking whether a site is on or close to a geological unit with elevated radon potential. These reports are available from the BGS via their enquiry service 0115 936 3143, or online at www.bgs.ac.uk.

When a property lies in an area which may require radon protective measures, GroundSure highlights this in the Expert Assessment ('Certificate') page and the Risk Rating and Guidance page within a Commercial Environmental Report.

Coal Mining

The Commercial Environmental Reports provide information as to whether the property lies within a coal mining affected area. If a positive response is returned, then a coal mining report should be purchased from the Coal Authority. This can provide the following information:

- Past and Present Underground Coal Mining
- Past and Present Opencast Coal Mining
- Future Underground Coal Mining
- Presence of Shafts and Adits around the Property
- Details of geological faults or other mines of weakness activated by coal mining that may have affected the property
- Details of any coal mining related subsidence (as required under the Coal Mining Subsidence Act, 1991)

The amount of information provided may vary according to the records in the possession of the Coal Authority.

Shallow Mining

Many types of mining such as ironstone or limestone extraction take place close to the surface. These types of mining can pose a subsidence risk as they sometimes cause surface collapse.

This data is provided by the BGS and areas of England and Wales are rated on a five point scale ranging from negligible risk to very high risk. If the property is in a high risk area then further advice should be sought from a Royal Institute Chartered Surveyor (RICS), the local Building Control Officer, or by ordering a Geological Hazards Report from the BGS.

8.5.5 Environmental Setting

This section of the report provides a valuable overview of a property's environmental surroundings.

Please note that some of this information is gathered from digital interpretations of available Environment Agency maps. All maps involve a degree of compromise between the representation of natural complexity and ease of interpretation of the map. Such compromises place limitations on the resolution and precision of information presented on the mapping. For example, in the case of information relating to groundwater vulnerability and soil leaching potential the actual geological strata and soil types is commonly heterogeneous, therefore the classification used is, of out necessity, typically generalised. Individual sites and circumstances

may therefore require further and more detailed assessment to determine the specific impact on groundwater resources.

Groundwater Vulnerability

Groundwater is termed as water that has percolated through permeable rocks to below the water table and is stored in slowly flowing and slowly renewed underground reservoirs commonly called aquifers. There are various types of aquifers across the country and are typically classified by the ability of soil or rock to hold water. These vast reserves of water are often pumped from boreholes for use in agriculture, industry and for direct potable supply. Contamination can affect water stored in aquifers and this is why such information is significant in the assessment of site specific risk.

Aquifers are classified into three main categories shown in the table below, with minor and major categories being most at risk from contamination.

Table 6 – Aquifer Classification

Aquifer Type	Characteristics
Major Aquifers	Highly fractured and porous rock such as chalk and limestone, containing large quantities of water. Generally very sensitive to contamination
Minor Aquifers	Fractured or potentially fractured rocks, not possessing a high permeability and seldom yielding water in sufficient quantities for large-scale abstraction purposes. Can be important for local water supplies
Non-Aquifers	Rocks generally regarded as containing insignificant quantities of groundwater. Some may yield small quantities for local water supplies

Soil Leaching Potential

Soils have varying degrees of leaching potential. The leaching potential of soils is an indication of how easily water-soluble pollutants may pass through it. Soils with a low leaching potential indicates that pollutants will pass through the soil slowly, whilst soils of a high leaching potential indicates pollutants will pass through the soil relatively quickly. The leaching potential of the soil is determined by factors such as texture, clay content, structure and stratification. Soil leaching potential can be divided into three main categories, high, intermediate and low.

Soil Classes

Each soil leaching classification group is further sub-divided into sub-classes. Each is based on soil physical and chemical properties which affect the downward passage of water and contaminants and include texture, structure, soil water regime and the presence of distinctive layers such as peaty topsoil and rock or gravel at shallow depth. This classification is not applied to soils above non-aquifers. Please refer to the table below for further information.

Table 7 – Soil Classes

Major Aquifers	
Soil Class	Characteristics
1	Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid flow directly to rock, gravel or groundwater.
2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.
3	Coarse texture or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges, but which have some ability to attenuate absorbed pollutants because of their clay or organic matter content.
U	Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst-case vulnerability classification is therefore assumed for these areas until proved otherwise.
Minor Aquifers	
Soil Class	Characteristics
1	Soils which can possibly transmit a wide range of pollutants.
2	Soils which can possibly transmit non-or weakly absorbed pollutants and liquid discharges but are unlikely to transmit absorbed pollutants.
U	Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst-case vulnerability classification is therefore assumed for these areas until proved otherwise.

Abstraction Licences

This section provides information on water abstraction licences granted by the Environment Agency under the Water Resources Act (1991). These apply to anyone who wishes to abstract from controlled waters (either surface or groundwater). The purpose and quantity permitted by each abstraction licence may vary. However, the presence of an abstraction point in proximity to a commercial site may render the area more sensitive to pollution.

Source Protection Zones

Source Protection Zones (SPZs) have been defined by the Environment Agency for nearly 2,000 groundwater sources (wells, boreholes and springs) used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area, the closer the activity, the greater the risk. The Environment Agency use the zones in

conjunction with their Groundwater Protection Policy to set up pollution prevention measures in areas which are at a higher risk, and to monitor the activities of potential polluters nearby.

The shape and size of a zone depends on the condition of the ground, how the groundwater is removed, and other environmental factors. When the Environment Agency defines a zone they investigate how the groundwater behaves in that area, what constructions there are to get the water out into the public water supply and the process for doing this. From this the Environment Agency can develop a model of the groundwater environment on which to define the zones.

The Environment Agency divides groundwater source catchments into four zones which are presented in the table below.

Table 8 – Source Protection Zones

SPZ Type	Characteristics
Zone 1 (Inner protection zone)	Any pollution that can travel to the borehole within 50 days from any point within the zone is classified as being inside zone 1. This applies at and below the water table. This zone also has a minimum 50 metre protection radius around the borehole. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.
Zone 2 (Outer protection zone)	The outer zone covers pollution that takes up to 400 days to travel to the borehole or 25% of the total catchment area – whichever area is the biggest. This travel time is the minimum amount of time that the Environment Agency believes pollutants need to be diluted, reduced in strength or delayed by the time they reach the borehole.
Zone 3 (Total catchment)	The total catchment is the total area needed to support removal of water from the borehole, and to support any discharge from the borehole.
Zone of Special Interest	Sometimes, the Environment Agency defines a fourth zone. This is usually where local conditions mean that industrial sites and other polluters could affect the groundwater source even though they are outside the normal catchment area.

River Quality

Regulations, established under the Water Resources Act (S.82 - S.83) 1990 classify water quality and set SWQOs for individual stretches of water. SWQOs are to be set for some 40,000 km of rivers and canals as well as estuaries, coastal waters, lakes and groundwater.

GroundSure provides information on recent Environment Agency surveys of surface waters. The classification provided relates to one of six grades (A to F) awarded depending upon biological or chemical water quality parameters. These grades are described in the table below.

Table 9 – General Quality Assessment

Grade	Environmental Quality
A	Very Good
B	Good
C	Fairly Good
D	Fair
E	Poor
F	Bad

The biological scheme is based on the macro-invertebrate communities of rivers and canals. Macro-invertebrates are small animals that can be seen with the naked eye. They include insects such as mayflies and caddis-flies, together with snails, shrimps, worms and many others. Macro-invertebrates are the most widely used organisms for biological assessment because they are found in virtually all fresh waters. What is more, they do not move far and respond to everything contained in the water, as well as to physical damage to their habitat.

Pollutants that occur infrequently, or in very low concentrations, and which may be missed by chemical sampling can affect the populations of macro-invertebrates therefore indicating a more robust assessment of water quality.

The chemical scheme is based on direct laboratory measurement of sampled water. Water is tested for a number of key environmental parameters that are chosen to provide a good indication of the overall environmental quality of the watercourse. This includes biological oxygen demand (BOD), chemical oxygen demand (COD), turbidity and the concentration of specific chemicals.

Designated Sites

This section includes information on Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Special Areas of Conservation (SAC), Special Protection Areas (SPAs) and Ramsar Sites. This information is provided by English Nature and The Countryside Council for Wales from records created under statutory legislation. These records indicate the presence of an area of land which will be particularly sensitive to pollution and environmental disturbance.

SSSIs are given a statutory designation under the Wildlife and Countryside Act 1981 by Natural England or the Countryside Council for Wales because they are particularly important, on account of their nature conservation value.

SPAs are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), also known as the Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds, listed in Annex I to the Birds Directive, and for regularly occurring migratory species.

SACs are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended).

Both SPAs and SACs are normally underpinned by SSSI legislation.

NNRs were established to protect tracts of land and managed to preserve its flora, fauna and physical features.

Ramsar Sites are internationally important wetland sites adopted from the Convention of Wetlands of International Importance (1971) especially as water fowl habitats and ratified by the UK government in 1976.

Geological Classification

The GroundSure Environmental Review includes a geological classification for the site. This is generated by manually reviewing the relevant BGS 1:50,000 scale geological map for the site.

9. How is the Data Interpreted?

In assessing specific site risk, GroundSure follows principles used extensively throughout the environmental consultancy sector. Our system is based upon the potential for specific industries to have generated residual contamination and for this contamination to remain at a site, or to have migrated to neighbouring sites. The system also utilises specific knowledge of the site (built up through database and map interrogation), such as groundwater vulnerability, soil leaching potential and geology.

In addition, factors such as the presence of residential properties, surface water features, abstraction licences and sensitive habitats can be used to build up a picture of a site's sensitivity to contamination. GroundSure has developed spreadsheets and guidance notes to help with assessments.

Our step-by-step risk assessment process classifies three levels of risk on a site-specific basis.

This assessment relates only to contaminative liabilities, the risk posed by natural hazards is assessed by the suppliers of this information (HPA, BGS and the Environment Agency). Natural hazards in this context relate to flooding, subsidence and radon, whilst contaminative liabilities relate to the past and current land use of the site and surrounding area.

Contaminative liability is assessed using a source-pathway-target approach. A high contaminative risk does not necessarily mean that the study site is 'contaminated' (as defined under Part IIA EPA 1990, but only that sources of potential contamination exist together with pathways for contaminants to migrate to the study site.

GroundSure provides a professional assessment of the risks posed using key environmental information which could indicate that the property may be designated as 'Contaminated Land' as defined under Part IIA of the EPA 1990. This assessment is based on the following data:

- Historical Industrial Sites (High detail historical mapping)
- Pollution Incidents and Contaminated Land Register
- Landfill Sites
- Other Waste Sites (waste treatment, transfer or disposal sites)
- Current Industrial Uses (PointX data)
- Industrial Sites Holding Licences / Authorisations (including Part A and Part B Licences)
- Petrol and Fuel Sites (Catalist data)
- Dangerous / Hazardous Sites (COMAH and NIHHS)

From this information GroundSure provide a statement regarding the likely designation of the property under Part IIA of EPA 1990 and the level of risk associated with the property is either 'Suitable for Purchase' or 'In need of Further Assessment'. If the site is 'In need of Further Assessment' it does not necessarily mean that the site is unsuitable for purchase, but only that further assessment of the risk associated with the site is required. When a site is 'In need of Further Assessment' then the practitioner may, if required, discuss the case with one of the GroundSure consultants. Where a site cannot be determined as 'Suitable for Purchase'

following further assessment with the regulatory body or through the assessment of further information GroundSure could assist the client in placing environmental insurance to underwrite this risk or by carrying out intrusive site investigations where appropriate.

In our Commercial Environmental Reports GroundSure answer a range of standard questions:

- (a) Is the site suitable for Purchase or Loan Security?
- (b) Is there a risk of the site being investigated further by regulatory authorities, either formally or informally, under Part IIA of EPA?
- (c) What is the risk of 'Direct Remedial Action' or 'Necessary Remedial Action' under 'Relevant Legislation'?
- (d) What is the most sensitive use for which the site is likely to be suitable in its current condition?

We also provide a section for general guidance and recommendations.

Please note that we do not cover questions (b) and (d) in our Risk Screening Report.

(a) Is the site Suitable for Purchase or Loan Security or in Need of Further Assessment?

All of our commercial reports indicate whether GroundSure consider the site to be Suitable for Purchase or Loan Security. This statement is made on the assumption that the interested party is seeking to purchase or take as a security a 'clean' site, i.e. one that does not have any significant contaminated land liabilities.

This statement is based on whether GroundSure consider there is risk of 'Direct Remedial Action' or 'Necessary Remedial Action' under 'Relevant Legislation'. Please see question (c) for a definition of these terms.

(b) Is there a risk of the site being investigated further by regulatory authorities, either formally or informally, under Part IIA of EPA 1990?

In undertaking their duties under Part IIA, Local Authorities are employing various strategies to identify sites that fall within the definition of Contaminated Land. Further information regarding the definition of Contaminated Land is available from DEFRA Circular 02/2000. In essence, if a source of potential contamination has been identified that could emanate from the study site, if there is a sensitive receptor (defined in DEFRA Circular 02/2000) that could be affected by such contamination and a pathway has been identified by which contaminants could mobilise to affect the receptor, a site is likely to require further assessment as it may fall within the definition of Contaminated Land.

The Local Authority strategies may take many forms, from causing sites to be investigated when redevelopment applications are made, through to identifying all potentially contaminated sites in their area and investigating them in turn. All investigated sites are likely to be subject to an initial desk-top review and depending on the findings and may be followed up by more detailed intrusive investigations. Observations of current practice indicate that not all sites are being formally investigated under Part IIA, but that site owners are offering information (from investigations) informally to avoid regulatory 'identification' and associated stigma that may affect site value. Therefore GroundSure states the risk of investigation as 'formal or informal'.

It should be noted that a site may be investigated further but that this investigation is limited to the desk-top phase due to an absence of any potential plausible 'source-pathway-receptor' relationships. Therefore, if the stated use of the site and surrounding sites remains unchanged, the site is unlikely to present a significant liability.

(c) What is the risk of 'Direct Remedial Action' or 'Necessary Remedial Action' under 'Relevant Legislation'?

The aim of this assessment is to provide an indication as to whether there is the potential for significant liability to be associated with the study site.

Where:

'Direct Remedial Action' means: action taken to carry out 'Remedial Works' at the site as a consequence of a legal requirement on the site owner under 'Relevant Legislation'.

'Necessary Remedial Action' means: the voluntary carrying out of 'Remedial Works' at the site by the site owner on the basis that such 'Remedial Works' would be necessary in order to avoid a substantial and imminent risk of 'Direct Remedial Action'.

'Relevant Legislation' means: Part IIA of the EPA 1990, the Water Resources Act 1991 and the Common Law.

'Remedial Works' means: remedial measures undertaken to identify, remediate or contain any contaminative substances at the site (but not non-intrusive investigations).

(d) What is the most sensitive use for which the site is likely to be suitable in its current condition?

"Source-Pathway-Receptor" analysis may suggest that the site is likely to be suitable for one use, but not a more sensitive use as this may lead to 'significant harm' being caused to a receptor, leading to the site falling within the statutory definition of Contaminated Land.

Statutory Guidance on the definition of Contaminated Land is provided by DEFRA (Circular 02/2000). This guidance relates to Part IIA of the EPA1990 (inserted by Section 57 of the Environment Act 1995).

To identify whether a site is 'Suitable for Use' requires an assessment of potential Source-Pathway-Receptor relationships. In this assessment the following are considered; the environmental sensitivity of the site, the probable concentrations of any pollutants in soils and/or groundwater, and the existence of pathways allowing contaminants to reach and significantly affect sensitive targets. If a Source-Pathway-Receptor relationship is proven, then a site may fall within the definition of Contaminated Land as provided by Part IIA of the EPA 1990.

10. Further Actions

Where appropriate, GroundSure's Commercial Environmental Reports provide recommendations for further action. Such actions range from gathering additional information from the statutory bodies through to review of additional mapping or other documentation.

In these circumstances, GroundSure offers access to its renowned commercial consultancy services. These services offer a cost effective solution to resolving any problems identified in our reports and include:

- Bespoke enquiries to statutory bodies such as the Local Authority, County Council, Environment Agency and other organisations such as the National House Building Council (NHBC);
- Technical report appraisal;
- Site assessment and intrusive ground investigations;
- Detailed desktop reviews; and
- Additional information requests e.g. to the Property Developer.

Please contact our Helpline (01273 819 700) for a quotation or advice on any aspect of our commercial consultancy services.

11. Advice and Guidance

We provide a FREE Technical Helpline so that Solicitors or their clients may clarify any matter in a report about which they are unsure. The Technical Helpline is manned by the same experts who write the reports. You can contact the Helpline (01273 819 700), by email (helpline@groundsure.com), or through our website www.groundsure.com.

If we clarify any matter which you wish to rely on, GroundSure strongly suggests that you should ask for the Helpline advice to be put in writing.

12. Future Improvements

GroundSure aims to constantly improve its services, both in terms of the products supplied, the datasets used and the continual professional development of all our staff. We consistently invest in compiling, updating and maintaining our numerous in-house databases as well as requiring our data suppliers to provide the most robust datasets available. GroundSure welcomes any suggestions or comments from our customers. Please contact us if there is particular information you would like to see included in our reports.

Glossary of Terms

Aquifer – A body of rock through which appreciable amounts of water can flow. Aquifers are an important source of fresh water in many parts of the UK.

Asbestos – Asbestos is a naturally occurring mineral and has been used in buildings predominantly for fire protection, thermal insulation and as a binder in thousands of products the importation of which was banned in November 1999.

Biological Oxygen Demand (BOD) – BOD is the measure of the quantity of dissolved organic pollutants that can be removed in biological oxidation by bacteria.

British Geological Survey (BGS) – The BGS is the world's longest established national geological survey and the UK's centre for earth science and information and expertise.

Buildings Research Establishment (BRE) – The BRE is owned by the BRE Trust, a registered charity with a mission to champion excellence and innovation in the built environment.

Chemical Oxygen Demand (COD) – COD measures the quantity of dissolved organic pollutants that can be removed in chemical oxidation.

Control of Major Accident Hazards Regulations (COMAH) – COMAH applies mainly to the chemical industry, but also to some storage activities, explosives and nuclear sites, and other industries where threshold quantities of dangerous substances identified in the regulations are kept or used.

Department for the Environment, Food and Rural Affairs (DEFRA) – This is the government department responsible for formation of UK environmental policy and monitoring of standards and practices.

Dioxins – A general name for a family of chlorinated hydrocarbons, $C_{12}H_4O_2Cl_4$, typically used to refer to one isomer, TCDD, a by-product of pesticide manufacture: a toxic compound that is carcinogenic and teratogenic in certain animals.

Environment Agency – The Environment Agency is the government body responsible for the protection of the environment including rivers, flooding, and pollution in England and Wales.

Health Protection Agency (HPA) – The HPA is an independent body that protects the health and well-being of the population.

Health and Safety Executive (HSE) – This government body is responsible for the regulation of almost all the risks to health and safety arising from work activity in Britain.

Hydrocarbons – A class of chemical compounds containing only the elements hydrogen and carbon. Petroleum hydrocarbons are obtained from naturally occurring reservoirs of crude petroleum, formed from the natural breakdown of plant and animal debris. The most common petroleum hydrocarbons include petrol, diesel, heating oils and lubricants.

Institute of Environmental Management & Assessment (IEMA) – This is the professional body responsible for promoting best practice standards in environmental management, auditing and assessment.

Integrated Pollution Prevention and Control (IPPC) – The IPPC Directive (96/61/EC) is being introduced across Europe to improve environmental protection standards. It lays down

measures designed to prevent, or where that is not practical, reduce emissions to air, land and water.

Integrated Pollution Control (IPC) – Integrated Pollution Control is a system established, under Part I of the EPA 1990, to control pollution from industry. It applies to the most potentially polluting or technologically complex processes in England and Wales and is enforced by the Environment Agency.

Local Air Pollution Prevention Control (LAPPC) – The Local Authority Pollution Control system was introduced under Part I of the EPA 1990. The system controls emissions to the atmosphere from various industrial sectors covering approximately 17,000 individual processes. It will gradually be replaced by the similar LAPPC system under the Pollution Prevention and Control Act 1999.

Leachate – A liquid, which seeps through a landfill, and by so doing, extracts substances from the deposited wastes.

Macro-invertebrates – Larger creatures which lack a backbone such as worms, molluscs and insects.

Map Epoch – The time period during which a map survey was carried out.

Main River – Main Rivers are usually larger streams and rivers, but also include smaller watercourses of strategic drainage importance.

Notification of Installations Handling Hazardous Sites Regulations (NIHHS) – The NIHHS Regulations require emergency plans to be kept up to date and regularly tested.

National Nature Reserves (NNRs) – National Nature Reserves were established to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research.

Radioactive Substance Authorisations (RSA) – Radioactive Substances Authorisations are granted under the Radioactive Substances Act (RSA) 1993. This Act controls the storage, use and disposal of radioactive substances, through authorisation and registration systems and provides for access to information regarding sites holding such consents.

Scottish Environmental Protection Agency (SEPA) – The Scottish Environmental Protection Agency is responsible for the protection of the environment in Scotland.

Special Areas of Conservation (SACs) – Special Areas of Conservation are strictly protected sites designated under the EC Habitats Directive.

Site of Special Scientific Interest (SSSI) – SSSIs are the country's very best wildlife and geological sites.

Source Protection Zones (SPZs) – Show the risk of contamination from any activities that might cause pollution in the area.

Special Protection Areas (SPAs) – Special Protection Areas are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), also known as the Birds Directive, which came into force in April 1979.

SWQOs – For each stretch of a river the Environment Agency establishes a river quality objective. This reflects the uses to which the waters are put and is the basis for deciding the discharges which can be allowed.

Appendix I – GroundSure’s Terms and Conditions

TERMS AND CONDITIONS FOR DATA REPORTS SOLD DIRECTLY BY GROUNDSURE LIMITED

1. DEFINITIONS

In these Terms and Conditions the following words and phrases will have the meaning(s) set out below:

‘Client’ means the contracting party (or parties) which are either named on the Order Form or in the Data Report;

‘Consultancy Services’ means any service involving physical site inspections (including investigations involving the taking of samples);

‘Contract’ means the contract between GroundSure and the Client for the performance of the Services which shall incorporate these Terms and Conditions;

‘Data Provider’ means any third party providing maps, data or information to GroundSure;

‘Data Report’ means any of the following - Homebuyers Review, Risk Screening, GroundSure Environmental Review and Commercial Risk Study; and includes any further advice or information ancillary to the Data Report supplied to the Client, including any ancillary Consultancy Services.

‘GroundSure’ means Groundsure Limited and its holding and subsidiary companies (as defined in Section 736, Companies Act 1985) and includes any employee or subcontractor of Groundsure Limited;

‘Legal Search Services’ means any conveyancing search prepared by a third party (such as a Local Authority search);

‘Order Form’ means any standard order form produced or accepted by GroundSure, including any ordering system on the GroundSure website;

‘Services’ means any service performed by GroundSure pursuant to the Contract;

‘Site’ means the parcel of land specified on the Order Form; and

‘User Guide’ means the relevant current version of the user guide, available on request and displayed on the GroundSure website

The “Homebuyers User Guide” is the User Guide for the Homebuyers Review. The “Commercial Environmental Report Reference Guide” is the User Guide for Risk Screening, GroundSure Environmental Review and Commercial Risk Study.

2. GENERAL

2.1 These Terms and Conditions apply to the provision of Data Reports by GroundSure to the Client. There are separate Terms and Conditions for Consultancy Services and for Legal Search Services.

2.2 Headings have been included for convenience only and shall not affect the construction or interpretation of the following conditions.

3. GROUNDSURE’S ASSURANCE

3.1 GroundSure will exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services in accordance with the Contract.

3.2 GroundSure will provide the Data Report for the Site requested on the Order Form by the Client.

3.3 The specifications of the Data Report will follow the specifications set out in the relevant User Guide.

4. CONFIDENTIALITY AND ASSIGNMENT

4.1.1 The Client may without further charge make the Data Report available to (i) any person who purchases the whole of the Site, (ii) any person who provides funding secured on the whole or part of the Site, (iii) any person for whom the Client acts in a professional or commercial capacity, and (iv) any person who acts for the Client in a professional or commercial capacity. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client.

4.1.2 Each of those persons referred to in Clause 4.1.1 shall have the benefit of the Client’s rights under these Terms and Conditions as if those persons were parties to the Contract. The limitations of GroundSure’s liability as set out in Clause 7 shall apply.

4.1.3 GroundSure will make further copies of the Data Report for the Client as requested for payment of a reasonable administration fee.

4.2 The Data Report is to be used solely for the benefit of the Client and such persons as are set out in Clause 4.1, and GroundSure excludes all liability to all other persons unless GroundSure has expressly agreed in writing to the assignment of the benefit of the Data Report and has been paid GroundSure’s reasonable fees for so doing.

4.3 Upon full payment of GroundSure’s fees the Client is granted an irrevocable royalty-free licence to use the information contained in the Data Report for the purpose of assessing the Site.

4.4 Subject to Clause 4.3, unless expressly agreed in writing to the contrary GroundSure and its Data Suppliers retain all intellectual property rights and proprietary rights they may have in all information and data reproduced in the Data Report.

4.5 Any information provided by the Client to GroundSure will be treated as confidential to the Client except so far as GroundSure may be authorised by the Client to provide such information (in whole or part) to a third party.

5. APPLICATION OF CONDITIONS

5.1 Save as otherwise expressly agreed in writing and signed on behalf of GroundSure by a duly authorised person these Terms and Conditions shall apply to the Contract to the exclusion of any other terms and conditions.

5.2 In the event that these Terms and Conditions are not expressly accepted by the Client, they shall be deemed to have been accepted by the Client upon the Client making any request application or payment to GroundSure for the provision of Services.

6. FINANCIAL ARRANGEMENTS

6.1 Invoices are payable within 30 days of issue.

6.2 GroundSure will be entitled to charge the Client simple interest on overdue accounts. The rate of interest will be 0.05% per day from the day on which the account became overdue.

6.3 VAT shall be payable in addition to GroundSure's fees at the rate prevailing at the date of the invoice.

7. LIMITATION OF GROUNDSURE'S LIABILITY

7.1 Nothing in the Terms and Conditions shall limit GroundSure's liability for causing death or personal injury.

7.2 GroundSure shall not be liable for any errors or inaccuracies in any Databases or Maps supplied to GroundSure by a Data Provider, nor for any inaccurate statement or risk rating in a Data Report which reasonably resulted from the interpretation of such Databases or Maps.

7.3.1 Subject to the other provisions of this Clause 7 and except where prohibited by statute, GroundSure's liability in contract, tort (including negligence or breach of statutory duty) or otherwise arising in connection with these Terms and Conditions shall be limited in respect of each Data Report to:

(a) £500,000 in the case of a Homebuyers Review; or

(b) £3,000,000 in the case of any other Data Report,

which amount shall first include the whole of any sum payable for death or personal injury.

7.3.2 For the avoidance of doubt, if multiple parties make use of the same Data Report, the limit referred to in Clause 7.3.1 applies to all users of that Data Report in aggregate.

7.4 GroundSure's liability under the Contract shall cease upon the expiry of six years from the date when the Client or any person making use of the Documents in accordance with Clauses 4.2 and 4.1.1 became aware that it may have a claim against GroundSure in respect of a particular Data Report provided always that there shall be no liability at the expiration of twelve years from the completion of the Contract. For the avoidance of doubt, any claims in respect of which proceedings are notified to GroundSure prior to the expiry of the time periods referred to in this clause shall survive the expiry of those time periods.

7.5 GroundSure shall have no liability in law to any party other than the Client or any person entitled to make use of the Documents in accordance with Clauses 4.2 and 4.1.1.

7.6 No person may rely on any Data Report more than one year after its original date of issue.

7.7 Subject to the exclusions and limitations set out in Clause 7, GroundSure does not exclude liability (i) for the cost of remediation of the Site, (ii) for the reasonable rental costs of an alternative comparable Site (iii) for reasonable removal costs to and from the alternative comparable Site (iv) loss in value of the Site as remediated, which shall be assessed as at the time of reliance on the Data Report. GroundSure does exclude liability for any loss of profit caused by the suspension or reduction of activity on the Site.

7.8 If a Client wishes to vary any limitation of liability, the Client must inform GroundSure before the report is ordered and GroundSure will use its best endeavours to obtain a quote for suitable insurance to enable such variation.

7.9 GroundSure shall not be liable if the Services are used otherwise than as provided or referred to in these Terms and Conditions.

8. INSURANCES

GroundSure undertakes for the duration of the 12 year period of liability provided for by Clause 7.4 to maintain and renew annually insurance cover for Public Liability and Professional Indemnity Insurance in respect of the Services provided, with a limited liability being not less than £3,000,000 provided that such insurance is available at commercially reasonable rates. (Details of our Public Liability and Professional Indemnity Insurance are available on request.)

9. FORCE MAJEURE, ETC

9.1 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by any one or more of the following circumstances:

- (a) The Client's failure to provide facilities, access or information;
- (b) Fire, storm or tempest;
- (c) Process shutdown;
- (d) Acts of God or the public enemy;
- (e) Riot or civil commotion or war;
- (f) Strikes or labour disputes or industrial action;
- (g) Acts or regulations of any governmental or other agency.

9.2 In any of those events GroundSure and the Client shall enter into negotiations in good faith with a view to agreeing such amendments or variations to the Contract as shall be acceptable to them. If such negotiations do not result in agreement GroundSure reserves the right to treat the Contract as terminated by the Client.

10. NOTICES

Any notice to be given under the Contract shall be in writing and be sent by facsimile transmission or first class post to the receiving party at its business address as last notified in writing to the other party and shall be deemed to have been given on the date of the facsimile transmission or on the day following that on which the notice was posted in the case of a first class letter to an address in the United Kingdom or after 5 days in the case of an overseas letter sent by Air-Mail.

11. DUTIES OF CLIENT

11.1 The Client shall inform GroundSure of any specific and unusual environmental information relating to the Site of which the Client is aware.

11.2 While GroundSure has a duty to prepare the Data Report in accordance with the Client's instructions, the Client shall take reasonable steps to check that the Data Report has been prepared for the correct Site. 11.3 The Client agrees that the Client and any person who is provided with a copy of the Data Report (pursuant to Clause 4 or otherwise) shall not: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to a Data Supplier from the Data Report; (b) create any product which is derived directly or indirectly from the data contained in the Data Report; (c) combine the Data Report with or incorporate the Data Report into any other information, data or service; (d) re-format or otherwise change (whether by modification, addition or enhancement) data contained in the Data Report; (e) provide data derived from a Data Report to third parties without the express written permission of the Data Suppliers; (f) use (directly or indirectly) any data on any public website.

11.4 Notwithstanding Clause 11.3, and for the avoidance of doubt, a client who acts in a professional capacity may make reasonable use of the Data Report to advise his client.

12. ORDNANCE SURVEY

12.1 Ordnance Survey (the Secretary of State for Transport and the Office of the Deputy Prime Minister (acting through Ordnance Survey or its successor)), may enforce breach of Clause 4.4 of these Terms and Conditions against the Client subject to Clause 12.2 below and in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.2 GroundSure and the Client agree not to rescind or vary these Terms and Conditions to Ordnance Survey's or its successor's detriment without obtaining Ordnance Survey's or its successor's prior written consent.

13. RIGHTS OF THIRD PARTIES

Save to the extent that Clauses 4.2 and 4.1.1 shall apply, no person who is not a party to the Contract shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

14. ARBITRATION

If any dispute arises out of or relating to this Contract including but not limited to any dispute between the parties in connection with the provision Services or Documents or out of any contested invoice, then the dispute shall be submitted to arbitration by a sole arbitrator. If the parties cannot within 14 days of service of a notice of arbitration identifying a sole arbitrator agree to the appointment of an arbitrator, then the sole arbitrator shall be appointed by the President for the time being of the Institution of Civil Engineers. The arbitration shall take place in London and shall be conducted in English and according to the laws of England.

15. GOVERNING LAW

The formation, existence, construction, performance, validity and all aspects whatsoever of this Contract and any term of it will be governed by the law of England and Wales.

16. ENTIRE AGREEMENT

16.1 This Contract represents the entire contract between GroundSure and the Client and supersedes all prior negotiations, representations or agreements, either written or oral.

16.2 Each of the provisions of this contract is severable and distinct from the others and if at any time one or more provisions is or should become invalid, illegal or unenforceable the validity and enforceability of the remaining provisions hereof shall not in any way be tainted or impaired thereby.

17. VERSION DETAILS

These Terms and Conditions were produced on 28th April 2004.

Appendix II – GroundSure’s Data Guide

GroundSure Data Guide

Version 4.1

Name	Description	Source	Type	Date	Update
BGS/DoE Recorded Landfill Sites	These records relate to a survey of active landfill sites conducted on behalf of the DoE in 1973. The data are geocoded by BGS and includes over 3000 sites accepting waste prior to the Control of Pollution Act 1974. Such sites would not have been subject to any strict regulation or monitoring. More information relating to these records may be available from the BGS archives.	British Geological Survey	Point and Text	As at 1973	Not Applicable
Coal Mining Areas	This data comprises areas which may be affected by Coal Mining activity. The data is made up of 1km square polygons.	Coal Authority	Polygon	Not Applicable	Variable
COMAH Sites	<p>These records relate to the COMAH (Control of Major Accident Hazards Regulations) 1999 (SI 981) which came into effect in England and Wales in April 1999 and amend both the Planning (Hazardous Substance) Act and the Regulations which implement requirements of the 1996 EU Directive on the Control of Major Accident Hazards.</p> <p>Under this legislation, planning authorities must take land-use controls into account when considering modifications to COMAH sites or new developments in the vicinity of COMAH sites. They must also comply with the regulations' further objectives that development decisions, in relation to COMAH sites, should aim to minimise any risks to human health or to the environment.</p> <p>COMAH sites are categorised on the basis on the storage of certain hazardous substances above a controlled quantity, either singly or in aggregate and are regulated by the Local Authority. Applications, consents and their conditions, modifications, revocations etc are all put on a public register. These regulations do not apply to controlled wastes or radioactive wastes, which are subject to control under the EPA 1990 and the Radioactive Substances Act 1993.</p> <p>Although supplied as point data by the HSE, many COMAH sites have had their boundaries digitised by GroundSure and are now provided as polygon data. Due to security concerns, updates to this dataset have been withheld on national security grounds.</p>	Health and Safety Executive	Polygon & Text	1999 -	Variable

Dangerous Substances Inventory (Sites 1 & 2)	<p>These records relate to industrial site discharges regulated under The Surface Waters (Dangerous Substances Classification) Regulations 1989 [SI 2286], amended 1992 and The Surface Waters (Dangerous Substances Classification) Regulations 1997 [SI 2560] and 1998 [SI 389].</p> <p>These regulations set water quality objectives for a number of key substances specified by various EU Directives. These substances include specific Black List (List I) substances and a total of 20 List II substances. These substances are highly toxic and include a number of chlorinated solvents. The main sources of such substances include large industrial plants and sewage treatment works.</p>	Environment Agency	Point and Text	-	Bi-Annually – with incremental updates as available
Designated Sites	A number of datasets are available from Natural England, Countryside Commission for Wales, the Environment & Heritage Service for Northern Ireland and Scottish Natural Heritage. These include SSSIs, NNRs, SPAs, SACs & Ramsar Sites.	Various	Polygon & Text	-	Variable
Discharge Consents, Red List Discharge Consents	<p>These records relate to sites regulated under the Water Resources Act 1991 wherein the discharge or other entry to Controlled Waters (rivers, streams, lakes, groundwater etc.) of any poisonous, noxious or polluting matter is prohibited. Businesses that discharge trade or sewage effluent to controlled waters require a consent from the Environment Agency.</p> <p>Both 'red list' substance and non 'red list' substance consents are geo-coded by the Environment Agency using 1:50,000 mapping. Records without valid grid references are further reviewed and geo-coded by GroundSure if sufficient information is present.</p>	Environment Agency	Point and Text	1950s -	Bi-Annually – with incremental updates as available
Environment Agency Registered Active Landfill Sites	These landfill records relate to sites issued with a licence to operate from the Environment Agency. This provides accurate boundary information illustrating the extent of currently operating sites. In some cases these may correspond with closed licences.	Environment Agency	Polygon & Text	1976 -	Variable
Environment Agency Registered Historic Landfill Sites	These landfill records relate to sites issued with a licence to operate from the Environment Agency. This information data is included in reports as indicative and is currently being quality checked by the Environment Agency.	Environment Agency	Polygon, Point & Text	1970s -	Variable

<p>Extreme Flooding from Rivers or Sea without Defences (Zone 2)</p>	<p>Flood Zones are defined by the Government's Planning Policy Guidance 25 on 'Development and flood Risk' for England (PPG25), July 2001. The Flood Zones illustrate the probability of flooding across England for planning consultation. The Flood Zones have been identified using the best available data held by the Environment Agency ignoring the presence of flood defences (as required by PPG25, reference table 1 note (a)).</p> <p>Flood Zones or flood extents included in the Flood Map are the Agency's best estimate of the areas of land, ignoring the presence of defences. Areas classified as being within 'Flood Zone 2' have an annual probability of flooding of 0.1% (1 in 1000) or greater from rivers and the sea, but less than 1% from rivers or 0.5% from the sea.</p> <p>This definition of Flood Zone 2 applies only in England. Equivalent data is also provided for Wales, although in Wales the data on this layer of the Flood Map does not have the same relationship to Planning Guidance and is not referred to as Flood Zones.</p>	Environment Agency	Polygon and Text	2005 -	Quarterly
Flood Defences	<p>This is the Environment Agency's holding of Linear Flood Defences. This dataset contains all flood defences constructed during the last five years with a standard of protection equal to or better than 1% for rivers and 0.5% from the sea. Some additional defences, which may be older or may have been designed to provide a lower standard of protection, are also shown where the information is currently available. This layer comprises linear flood defences, for example flood embankments and walls.</p>	Environment Agency	Polygon and Text	2005 -	Quarterly
<p>Flooding from Rivers or Sea without Defences (Zone 3)</p>	<p>Flood Zones are defined by the Government's Planning Policy Guidance 25 on 'Development and Flood Risk' for England (PPG25) dated July 2001. The Flood Zones illustrate the probability of flooding across England for planning consultation. The Flood Zones have been identified using the best available data held by the Environment Agency ignoring the presence of flood defences (as required by PPG25, reference table 1 note (a)).</p> <p>Flood Zones or flood extents included in the Flood Map are the Agency's best estimate of the areas of land, ignoring the presence of defences. Areas classified as being within 'Flood Zone 3' have an annual probability of flooding of 1.0% (1 in 100) or greater from rivers, and 0.5% (1 in 200) or greater from the sea.</p> <p>This definition of Flood Zone 3 applies only in England. Equivalent data is also provided for Wales, although in Wales the data on this layer of the Flood Map does not have the same relationship to Planning Guidance and is not referred to as Flood Zones.</p>	Environment Agency	Polygon and Text	2005 -	Quarterly

<p>Groundwater Vulnerability</p>	<p>Groundwater is contained within water bearing rocks, or aquifers, of which there are various types across the country. These vast reserves of water are often pumped from boreholes for use in agriculture, industry and for domestic use. Contamination can affect water stored in aquifers and this is why such information is significant in the assessment of site-specific risk.</p> <p>Aquifers are classified into three main categories of major, minor and non-aquifer.</p> <p>Soils have varying degrees of leaching potential. This indicates how easily water-soluble pollutants may pass through it. Low leaching potential indicates that pollutants will pass through the soil slowly, whilst high leaching potential indicates pollutants will pass through the soil relatively quickly. The leaching potential of the soil is determined by factors such as texture, structure and stratification and can be divided into three main categories: high intermediate and low.</p> <p>This dataset is provided by the Environment Agency and is based on 1:100,000 scale digitised data.</p>	<p>Environment Agency</p>	<p>Polygon and Text</p>	<p>Not applicable</p>	<p>Variable</p>
<p>Integrated Pollution Prevention and Control</p>	<p>Part I of the EPA 1990 introduced the concept of Integrated Pollution Prevention and Control (IPPC) for potentially polluting large scale industrial (Part A) processes such as chemical manufacture, oil refining and paper manufacture. Large sites operating such processes need to apply to the Environment Agency (or SEPA in Scotland) for an authorisation to operate such a process. The processes are regulated and checked by the Environment Agency to ensure that they meet current good practice and that any emissions are within prescribed limits. In some cases, emissions may be monitored by the Agency and the levels of such compounds are kept on a register of chemical releases (Chemical Releases Register).</p> <p>Under recent legislation, IPPC or Part A processes will be regulated under the concept of Integrated Pollution Prevention and Control, as required by the 1996 EU Integrated Pollution Prevention and Control Directive. This will be implemented via the Pollution Prevention and Control (England and Wales) Regulations 2000 and once all sites have been brought within the new regulations, Part I of EPA 1990 will be revoked.</p>	<p>Environment Agency</p>	<p>Point and Text</p>	<p>1991 -</p>	<p>Bi-Annually – with incremental updates as available</p>

NIHHS Sites	<p>These records relate to sites that come under the Notification of Installations Handling Hazardous Substances (NIHHS) Regulations 1982. These Regulations specify dangerous substances and substance quantities that trigger obligations to notify the Health and Safety Executive (HSE) of their use. Notification is required for all sites proposing use of such substances.</p> <p>Although supplied as point data by the HSE, many NIHHS sites have had their boundaries digitised by GroundSure and are now provided as polygon data.</p>	Health and Safety Executive	Polygon & Text	-	Variable
Petrol and Fuel Sites	These records relate to petrol and fuel sites held by Catalist and include information on current, closed and redeveloped petrol sites.	Catalist Limited	Point and Text	1995 -	Quarterly
Pollution Incidents Relating to Controlled Waters	These records relate to data collated and geo-coded by the Environment Agency. Such incidents can relate either to breaching of a Discharge Consent or to an incident at an unregulated site.	Environment Agency	Point & Text	1990 -	Bi-Annually
Potentially Contaminative Land Uses (Current land Use)	These records relate to a sub-set of data derived from PointX database and focuses on those sites most likely to be carrying out potentially contaminative activities. The data is geo-coded by OS PointX.	PointX	Point & Text	-	Annually
Potentially Contaminative Land Uses (Past Land Use) & Potentially Infilled Land	<p>Comprises records derived from the systematic review of 1:10,000 and 1:10,560 scale historical mapping covering England, Wales and Industrial Scotland.</p> <p>Additionally for some urban areas data from larger scale 1:2,500 mapping is available.</p> <p>This dataset comprises records of industrial land use dating back to the 1860s and includes reference to up to 6 editions of historical maps.</p>	GroundSure	Point, Polygon & Text	1860 -	Not applicable
Radioactive Substance Consents (Higher Risk)	<p>These records relate to licences granted under the Radioactive Substances Act 1993. This Act controls the storage, use and disposal of radioactive substances.</p> <p>Sites which fall into the Higher Risk category include nuclear installations that both store and process nuclear fuels on-site e.g. nuclear power stations.</p> <p>Although supplied as point data by the Environment Agency, RAS 1 & 2 sites can no longer be shown within our reports due to changes in Government Regulations.</p>	Environment Agency	Polygon & Text	1991 -	Bi-Annually – with incremental updates as available.
Radioactive Substance Consents (Lower Risk)	<p>These records relate to licences granted under the Radioactive Substances Act 1993. This Act controls the storage, use and disposal of radioactive substances.</p> <p>Sites which fall into the Lower Risk category include non-nuclear sites that either accumulate and/or dispose of radioactive materials. e.g. Hospitals and Research Centres.</p>	Environment Agency	Point and Text	1991 -	Bi-Annually – with incremental updates as available.

Radon Affected Areas	<p>This dataset provides information on the probability of high radon levels in properties in England & Wales. The data is based on 5km square areas and shows the probability of properties being Radon Affected. The data is banded into 5 levels ranging from less than 1% to more than 30% of properties being above the action level of 200 Becquerels per cubic metre (for residential properties). The action level for Commercial properties is 400 Becquerels per cubic metre but currently this dataset for the UK is not yet commercially available.</p> <p>Where more than 1% of properties are estimated to exceed the Action Level (200 Becquerels per cubic metre) the area should be regarded as Radon Affected and limited preventative measures may be required such as underfloor extraction, house ventilation or underfloor ventilation.</p>	Health Protection Agency	Polygon & Text	Not Applicable	Variable
Registered Landfill Sites	<p>These records relate to sites issued with a consent by either the Environment Agency or the Scottish Environmental Protection Agency under the Control of Pollution Act 1974 and Section 36 of the EPA 1990. The data is updated by regular visits to local office public registers.</p> <p>This subset of data relates to operational and non-operational sites licensed for the landfill of waste.</p>	SiteFile	Point & Text	1976 - 2002	Static
Registered Waste Treatment & Disposal Sites	<p>These records relate to sites issued with a consent by either the Environmental Agency or the SEPA under the Control of Pollution Act 1974 and Section 36 of the EPA 1990. The data is updated by regular visits to local office public registers.</p> <p>This subset of data relates to operational and non-operational sites licensed for waste treatment or disposal.</p>	SiteFile	Point & Text	1976 - 2002	Static
River Quality Data	<p>The Water Resources Act (Sections 82 to 83) provides for the establishment, via regulations of systems of classifying water quality according to various criteria and for the setting of SWQOs for individual stretches of water. SWQOs will eventually be set for some 40,000 km of rivers and canals as well as estuaries, coastal waters, lakes and groundwater.</p> <p>GroundSure provide information on these surveys that have been undertaken by the Environment Agency. The classification provided relates to one of six grades (A to F) awarded depending upon biological or chemical water quality parameters.</p>	Environment Agency	Point and Text	-	Variable
Shallow Mining Risk	<p>These data relate to areas where bedrock may have been extracted in mine workings close to the ground surface (within 40m) that could cause surface collapses. This includes coal and many other forms of mineral extraction e.g. ironstone.</p>	BGS	Polygon and Text	-	Bi-Annually
Source Protection Zones	<p>Indicate the parts of the aquifers which, according to current techniques and methodologies, are considered to form the catchments to public water supplies and certain other private supplies have been defined as Source Protection Zones (SPZ).</p>	Environment Agency	Polygon and Text	-	Variable

Subsidence Risk	These records relate to the combined hazard level attributed for all geo-hazards by BGS geoscientists. Information from the six datasets making up the overall hazard rating are also detailed.	BGS	Polygon and Text	-	Bi-Annually
Water Abstraction Licences	<p>These records relate to information collected under the Water Resources Act 1963.</p> <p>Groundwater stored in aquifers can be abstracted by boreholes or wells, as well as surface waters. The water abstracted can be used for a number of purposes such as drinking water or for use in industrial and agricultural purposes. Contamination can affect the quality of this water and problems can arise if contamination migrates to these abstraction points. The Commercial Environmental Report incorporates details of abstraction licences held by the Environment Agency [excluding agricultural and private water supplies].</p> <p>The data is geo-coded by the Environment Agency based on 1:50,000 mapping.</p>	Environment Agency	Point, polygon, line and Text	1963 -	Bi-Annually
Water Industry Referrals	<p>The Water Industry Act 1991 (WIA 91) provides for the Environment Agency to have powers to regulate some discharges into public sewers of certain dangerous substances. This gave effect to a number of EC Directives, in particular 76/464/EEC.</p> <p>These powers and the Regulations SI No.1156 of 1989 (and amendments) establish the regulatory regime and Schedules of prescribed processes and prescribed substances which are to be controlled, often referred to as the "red list" although the Act defines them as a Special Category Effluents which is a trade effluent discharging to public sewer containing particular substances or that derives from specific processes.</p> <p>These records relate to information provided by the Environment Agency. This is not a complete list and does not indicate whether a referral has been given consent or otherwise. Once a consent has been granted, details will appear on the Trade Effluent public register which is held by the relevant Sewerage Undertaker.</p>	Environment Agency	Point and Text	1991 -	Bi-Annually – with incremental updates as available