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**Land Contamination and Impacts on the Water Environment**

Applies from February 2025

# Background

Land contamination is a legacy of historical land use across Scotland. It can pose a serious risk to the quality of our rivers, streams and groundwater and the people, businesses and ecosystems who depend on it.

Contaminants can be present in soil as a result of historical activities, due to factors including former leaks and spillages, deposition of industrial by-products, reclamation of land using anthropogenic material, waste disposal activities, and deposition from the atmosphere. Contaminants can then enter the water environment and affect receptors by a variety of pathways.

While all of the above soil sources represent land contamination, only some give rise to Contaminated Land as defined by [Part IIA of the Environmental Protection Act 1990](https://www.legislation.gov.uk/ukpga/1990/43/part/IIA)[[1]](#footnote-2) and the [Statutory Guidance.](https://www.gov.scot/publications/environmental-protection-act-1990-part-iia-contaminated-land-statutory-guidance/) In relation to the water environment, Contaminated Land is defined as land where significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused.

Part IIA Contaminated Land legislative regime is only one mechanism by which land contamination is dealt with in Scotland. Where action can be taken under other existing legislation or routes, Part IIA is not used (but can influence decisions regarding remediation). Therefore, land contamination is often routinely addressed through the planning and development regime or voluntary remediation (e.g., due diligence).

When a site is redeveloped, adherence to [Planning Advice Note 33](https://www.gov.scot/publications/pan-33-development-of-contaminated-land/#:~:text=%20Planning%20Advice%20Note%2033%3A%20Development%20of%20contaminated,public%20safety%2C%20the%20natural%20and%20built...%20More%20) and the use of appropriate planning conditions ensures that any land contamination is addressed and that the site is suitable for its proposed use. Planning authorities are also required to comply with the requirements of water environment protection legislation when carrying out their duties under the Town and Country Planning (Scotland) Act 1997.

Scottish local authorities are the lead regulator for both Part IIA and the planning regime. SEPA also has several duties and responsibilities under Part IIA. These roles, responsibilities and interactions are laid out in [Section 4](#_Roles,_responsibilities_and) of this guidance.

SEPA and other public bodies have a responsibility to work with third parties such as landowners and developers to ensure pollution from land contamination is remediated. By doing so, we can protect and enhance Scotland's environment and help communities and businesses thrive within the resources of our planet.

# Purpose

This guidance:

* Provides a brief overview of legislation, roles and interactions in relation to historical land contamination and the water environment.
* Sets out how to assess of impacts on the water environment from land contamination:
  + in relation to planning and development
  + in relation to Part IIA.
* Summarises the remediation requirements and considerations in relation to the Part IIA and planning and development regimes.

# Scope

This document is only applicable in Scotland. It considers impacts on the water environment from chemical contaminants as a result of historical land contamination. This does not include land contamination associated with regulated activities or recent pollution incidents.  The term “water environment” means all surface water, groundwater and wetlands.

This guidance does not cover radioactive substances in the water environment under Part IIA. It also does not cover the risks to human health other than via a drinking water abstraction route.

You should read this guidance in conjunction with the relevant SEPA supporting technical and policy guidance which is signposted throughout the document.

You may also need to refer to other publications for details on specific aspects relating to any individual site.

# Roles, responsibilities and legislative setting

When it comes to protecting our water environment from the impacts of land contamination, both the local authorities and SEPA have key roles and responsibilities**.** However, in the majority of cases, it is the responsibility of site owners/operators to investigate, manage and remediate their sites**.**

## 4.1 Planning and development

Frequently the most logical and timely opportunity to address pollution of the water environment is when a site is being redeveloped. The vast majority of land contamination is remediated through this route.

The planning authority (Local Authorities) is the lead regulator in relation to the impact of land contamination on the water environment when a site is re-developed.

SEPA is not a statutory consultee for land contamination being dealt with through the development process. However, SEPA has a liaison agreement with local authorities to provide advice and guidance on pollution of the water environment wherever necessary. This guidance forms part of that advice.

Planning Advice Note 33 states that ‘it is in the developer’s interests to ensure that development of a site will not result in designation as Contaminated Land under Part IIA’ and that ‘the planning authority is responsible for ensuring that remediation leaves the land in a condition suitable for the proposed use’.  In addition, the planning authority is required to exercise its functions to secure compliance with the Water Framework Directive, the Groundwater Directive and the Priority Substances Directive as now applicable to Scotland. This includes functions under the Town and Country Planning (Scotland) Act 1997). This requirement is set out in section 2(2) of the [Water Environment and Water Services (Scotland) Act 2003](https://www.legislation.gov.uk/asp/2003/3/contents) and Article 3 of The [Water Environment (Relevant Enactments and Designation of Responsible Authorities and Functions) (Scotland) Order 2011](https://www.legislation.gov.uk/ssi/2011/368/made).

What this means in practice is that, in relation to land contamination and the water environment, ‘suitable for use’ includes identifying and considering impacts on the water environment which is set out in [Section 5](#_Assessment_of_impact).

The planning authority can apply planning conditions to require site investigation, risk assessment and remediation by the developer. Remediation is enforced through the planning permission and/or conditions, wherever possible.

## 4.2 Part IIA

[Part IIA](http://www.legislation.gov.uk/ukpga/1990/43/part/IIA) of the Environmental Protection Act (EPA90) is the primary legislation in relation to contaminated land and is designed to capture the most pressing and serious problems. The regime is subject to further regulations and statutory guidance in the form of:

* [The Contaminated Land (Scotland) Regulations 2000 (SSI 2000 No.178)](http://www.legislation.gov.uk/ssi/2000/178/contents/made) and its [amendments](http://www.legislation.gov.uk/ssi/2005/658/contents/made)
* [The Statutory Guidance: Edition 2,](http://www.gov.scot/Publications/2006/06/05131212/0) prepared by the Scottish Government, which provides the detailed framework for the operation of the regime.

Scottish local authorities are the lead regulator dealing with land contamination under Part IIA. They are responsible for assessing and identifying land as contaminated and are responsible for securing the remediation of that land. Land is identified as Contaminated Land if substances in, on or under that land result in:

* Significant harm being caused, or a significant possibility of such harm being caused; or
* Significant pollution of the water environment being caused, or a significant possibility of such pollution being caused. [Part IIA section 78A(2)].

The decision as to whether significant pollution is occurring rests with local authorities. When making a determination regarding significant pollution of the water environment, Part IIA requires local authorities to consult with and adopt an approach consistent with that of SEPA.

The measures of significant pollution are set out in A.46 of the Part IIA Statutory Guidance and are reproduced in Appendix 3 of this document.

Significant pollution is where contamination is entering or is likely to enter the water environment at a level sufficient to cause exceedance of an appropriate statutory or operational standard as set out in Appendix 3. However, local pollution of the future groundwater resource is not sufficient to cause “significant pollution”. So, in relation to the future groundwater resource, “significant pollution” will only occur when a very serious degree of impact on the future groundwater resources has occurred.

SEPA is responsible for securing remediation of Contaminated Land that has been designated a special site. Special sites are particular categories of Contaminated Land, the descriptions of which are laid out in the Contaminated Land (Scotland) Regulations 2000 (as amended). A site can be a special site by virtue of its impact on the water environment, but it can also become a special site because of non-water environment related issues, for example former land use. This aspect is not covered further in this document.

## 4.3 Other legislation

There may be other regulatory regimes that might apply during remedial works. [Land remediation and waste management guidelines](https://www.sepa.org.uk/media/28317/land-remediation-and-waste-management-guidelines.pdf) provide further details.

# Assessment of impact on the water environment

You need to assess the impact of the degree of actual or potential impact on the water environment. This may be different to deriving remedial targets. You can find information on remediation targets in [Section 6](#_Remediation).

## 5.1 Undertaking a risk assessment

You need to carry out a risk assessment to assess the degree of actual or potential impact on the water environment. You should a take a staged approach to this assessment in line with industry good practice. You must identify whether any water environment receptor is being or could be impacted**.**

Firstly, you should characterise the site adequately. You must include the information set out in Appendix 4. This list is by no means exhaustive and there are many other, relevant, guidance sources (including local authority guidance) on what may be required by the regulator.

You should identify potential pollutant linkages and you should describe these in a Conceptual Site Model. Information on Conceptual Site Models is covered in other reference documents and British Standards (see References section of this document) and is not discussed further here. The conceptual site model should take into account any potential future changes associated with climate change.

For the purposes of Part IIA, you need to determine if the source of any potential pollutant linkage meets the two following criteria:

* Substances must be present in, on, or under land; and
* Substances must be entering, have the potential to continue to enter or be likely to enter the water environment.

The more confidence you have in the site conceptual model and the site data provided to back up the conceptual model, the greater confidence there will be in reaching any decision regarding the degree of impact on the water environment.

## 5.2 Assessing the degree of impact

You should assess the degree of actual or potential impact on the water environment, taking into account any risk management arrangements that are in place. This helps to inform what, if any, remedial action is required. You should consider any limitations in the data and uncertainty in the risk assessment.

You should consider current impacts upon the water environment. If it can be demonstrated that the land in question is, or there is a significant possibility that it is, causing a water body to be at less than good status, then this would also represent evidence of significant pollution.

There are different bars set under different legislation to assessing the degree of impact. Under planning you should aim to comply with all the objectives set out in The Water Framework Directive, the Groundwater Directive and the Priority Substances Directive as now applicable to Scotland. Under Part IIA the threshold is significant pollution. The assessment required is set out in the sections below.

### 5.2.1 Planning

When a site is being considered under planning, the planning authorities must use the Town and Country Planning (Scotland) Act to secure compliance the Water Framework Directive, the Groundwater Directive and the Priority Substances Directive. Section 2.1 gives the legislative background to this.

To do this when carrying out a risk assessment you must check whether:

* There are, or there are likely to be, inputs of a hazardous substance into groundwater.
* Pollutants are causing pollution of the water environment.

SEPA guidance WAT-PS-10 provides further information.

PAN33 also highlights that ‘It is in the developer's interests to ensure that development of the site will not result in designation as Contaminated Land under Part IIA’.  The requirements of NPF4 should also be taken into account.

### 5.2.2 Part IIA

To assess the degree of impact on the water environment in relation to Part IIA, you need to determine if any linkage is resulting in, or could result in, significant pollution of the water environment (SPWE) or the significant possibility of significant pollution of the water environment (SPSPWE). You can find the measures of significant pollution in A.46 of Environmental Protection Act 1990: Part IIA, Contaminated Land Statutory Guidance: Edition 2 (reproduced in Appendix 3).

To determine if there is SPWE or SPSPWE when carrying out a risk assessment you must check whether:

* Pollutants are causing pollution of the water environment, other than impacts on the future groundwater resource.
* There is a breach of the status standard for future groundwater resources.

WAT-PS-10 provides information on how to determine this. ‘Significant pollution’ does not include the input of small amounts of hazardous substances into groundwater or local pollution of the future groundwater resource. This is because Part IIA is a regime designed to capture the most pressing and serious problems.

### 5.2.3 Part IIA Special Sites Water Related Criteria

There are criteria which make a site a special site under Part IIA. The regulation of these fall to SEPA.  Some of these criteria relate to the site’s impact on the water environment.

* Pollutants listed in Schedule 1 of the Contaminated Land (Scotland) Regulations are affecting the water environment; and
* The pollutants are affecting groundwater wholly or partly within the Devonian Sandstone or Permo-Triassic Sandstones.
* Pollutants have caused or are likely to cause an abstraction for human consumption to require an increased level of treatment.

# Remediation

## 6.1 Planning and development

Your remedial action should aim to comply with the Water Framework Directive, the Groundwater Directive and the Priority Substances Directive. Section xx provide details on how to assess this.

However, it may not always be feasible to achieve these aims and there are some circumstances where this requirement may be relaxed. For example, where entry of hazardous substances cannot be prevented either because the measures would increase risks to human health or the environment as a whole or would be disproportionately costly or technically infeasible. In these cases, some more limited remediation will normally be required. Appendix sets out principles you can take into account when determining remediation that is reasonable.

SEPA will endeavour to respond to local authority consultation requests regarding remediation of water pollution in complex situations or if the site is causing or likely to cause significant pollution of the water environment.

## 6.2 Voluntary remediation

If you are undertaking voluntary remediation, you should design your remediation strategy in line with the planning requirements as far as is practicable to reduce the requirement for further remediation being required in the future.

## Part IIA

Local authorities have a duty to secure remediation of land identified under Part IIA as Contaminated Land. SEPA has the same duty for Special Sites.

Annex 3, Chapter C of the published Statutory Guidance deals with the remediation of Contaminated Land.  The Statutory Guidance sets out the aims of any remediation and provides that in evaluating the seriousness of any significant pollution of the water environment the enforcing authority should consider:

1. Whether significant pollution of the water environment is already being caused.
2. The likelihood of the significant pollution of the water environment being caused.
3. The nature of the significant pollution of the water environment involved with respect to:
   1. The nature and importance of the water environment which might be affected.
   2. The extent of the effects of the actual or likely significant pollution on that water environment.
   3. Whether such effects would be irreversible.
4. The context in which the effects might occur, in particular:
   1. Whether the water environment has already been polluted by other means and, if so, whether further effects resulting from the pollution would materially affect its condition.
   2. The relative risk associated with the pollution in the context of wider environmental risks.

Your remedial works should aim to stop significant pollution occurring or likely to be occurring and should remedy the effects of any significant pollution that has already occurred. You can also carry out remediation on a broader basis than this, if you consider it in in your interests to do so[[2]](#footnote-3). For example, your remediation strategy may incorporate further Water Framework Directive, Groundwater Directive or human health requirements in order to ensure the land is ‘development ready’. For further information on Water Framework Directive, Groundwater Directive requirements and environmental objectives see section xx.

The standard of remediation that can be required under Part IIA of the Environmental Protection Act 1990 depends on what can be regarded as reasonable, having regard to the cost likely to be involved, the benefit that would result, the seriousness of the pollution and the best practicable remediation techniques. You can find some broad guidelines to help this assessment in Appendix 3.

Where it is not reasonable under Part IIA to require remediation for all or some significant pollutant linkages, or just part of a particular linkage, a remediation declaration will be issued by the enforcing authority. Enforcing authorities are required to place remediation declaration particulars on their public register.

# References

Environment Act 1995. Available from Her Majesty’s Stationery Office.

Environmental Protection Act 1990. Available from Her Majesty’s Stationery Office.

The Contaminated Land (Scotland) Regulations 2000. SSI 2000 No.178. <http://www.opsi.gov.uk/legislation/scotland/ssi2000/20000178.htm>*As amended by:* The Contaminated Land (Scotland) Regulations 2005. SSI 2005 No.658. <http://www.opsi.gov.uk/legislation/scotland/ssi2005/20050658.htm>

The Scottish Executive. Environmental Protection Act 1990: Part IIA Contaminated Land  Statutory Guidance: Edition 2. May 2006. Paper SE/2006/44. <http://www.scotland.gov.uk/Publications/2006/06/05131212/0>

The Scottish Executive Development Department, Planning Advice Note 33: Development of Contaminated Land. <http://www.scotland.gov.uk/Publications/2000/10/pan33>

Scottish Environment Protection Agency (SEPA) Position Statement [WAT-PS-10] [“*Assigning groundwater assessment criteria for pollutant inputs*”](https://consultation.sepa.org.uk/circular-economy/637d721c)

Scottish Environment Protection Agency (SEPA) Supporting Guidance (WAT-SG-53) Environmental Standards for Discharges to Surface Waters <http://www.sepa.org.uk/water/water_regulation/guidance/pollution_control.aspx>

Scottish Environment Protection Agency (SEPA) WAT-SG-11: Modelling Discharges to Coastal and Transitional Waters.

<https://www.sepa.org.uk/regulations/water/pollution-control/pollution-control-guidance/>

The Scottish Government, The Scotland River Basin District (Standards) Directions 2024.

Supplementary Report 2 of the SuRF-UK Framework: Selection of indicators/criteria for use in sustainability assessment for achieving sustainable remediation ISBN 978-1-905046-34, Contaminated Land: Applications in Real Environments (CL:AIRE),July 2020, <https://www.claire.co.uk/component/phocadownload/category/16-surf-uk-bulletins?download=720:sr2-selection-of-indicators-criteria>

# 8. Further information sources

BRITISH STANDARDS INSTITUTION.  [BS 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of practice.](https://www.britishstandard.org.uk/sustainability-standards/environmental/bs-101752011a22017-9780580989964.aspx)

BRITISH STANDARDS INSTITUTION. BS 5930:2015+A1:2020. Code of Practice for Ground Investigations.

[BS 10176:2020 Taking Soil Samples for Determination of Volatile Organic Compounds (Vocs) – Specification](https://www.ags.org.uk/2020/07/bs-101762020-taking-soil-samples-for-determination-of-volatile-organic-compounds-vocs-specification/)

CL:AIRE <https://www.claire.co.uk/home>this site provides lots of useful information on land contamination.

Supplementary Report 2 of the SuRF-UK Framework: Selection of indicators/criteria for use in sustainability assessment for achieving sustainable remediation ISBN 978-1-905046-34, Contaminated Land: Applications in Real Environments (CL:AIRE),July 2020, <https://www.claire.co.uk/component/phocadownload/category/16-surf-uk-bulletins?download=720:sr2-selection-of-indicators-criteria>

Technical Guidance for England and Wales

<https://www.gov.uk/government/collections/land-contamination-technical-guidance>

# Appendix 1: Assessing impacts on surface waters

A surface water is an inland water (other than groundwater), transitional water and coastal water. Inland waters include all standing or flowing water on the surface of the land and includes canals and ditches. Pollution of a surface water feature constitutes significant pollution.

## A1.1 Watercourses

To assess current and predicted impacts on watercourses you should determine if:

Step 1: Contaminants from the site are entering or likely to enter a watercourse.

Step 2: Contaminants are contributing to a watercourse being polluted or a risk of it being polluted.

* You should determine if the concentration of relevant contaminants in the watercourse downstream of the site are already above the environmental standard. If so, you need to determine if, considering upstream concentrations, if this is this likely to be due to the contaminant inputs from the site. You should consider groundwater baseflow routes or other flow paths when deciding what is “downstream”. For example, this might not occur immediately adjacent to the site and you should consider the potential for additional pathways during extreme events such as floods; or
* You should determine if there a risk that contaminants from the site could result in the environmental standard being exceeded downstream of the site once fully mixed. This must take into account low flow conditions (Q95) and upstream concentrations.  Your assessment should take into account the potential impact that climate change may have on this assessment.

Step 3: The contaminants are contributing to a watercourse being at poor status or a risk that it will deteriorate in *status e.g. good to moderate, moderate to poor etc.*

* You should determine if the river a classified water body and if so whether there is any evidence to suggest that the spatial environmental standards have been exceeded.
* You should determine if the spatial extent of the impact will be or is likely to be greater than the spatial environmental standards[[3]](#footnote-4).  This should take into account any increase in flow (and additional dilution) as the surface water moves downstream and any attenuation that will occur.

You should not use impacts on SEPA monitoring points in watercourses in isolation to determine if the site is causing the watercourse to be at less than good status. You should also consider your conceptual site model and other potential sources of contaminants.

## A1.2 Lochs

To assess current and predicted impacts on lochs, you should determine whether:

Step 1: Contaminants from the site are entering or likely to enter a loch.

Step 2: Contaminants are contributing to a significant[[4]](#footnote-5) area of the loch exceeding the standards.

Step 3: Contaminants are contributing to the spatial standard in a loch being exceeded:

* You should determine if the loch a classified water body15 and whether there is any sampling evidence to suggest that the extent of an environmental standard exceedance extends beyond the spatial environmental standards 16.
* You should determine if it is likely that the spatial extent of the impact will be greater or is likely to be greater than the spatial environmental standards[[5]](#footnote-6). For example, a simple screen could be carried out to determine if the load of contaminants entering the loch is sufficient to exceed the spatial environmental standards when mixed in a volume of water equivalent to the areal environmental standards.

## A1.3 Coastal and Transitional Waters

To assess current and predicted impacts on coastal and transitional waters you should determine whether:

Step 1: Contaminants from the site are entering or likely to enter a coastal or transitional water

Step 2: Contaminants are contributing to a coastal or transitional water being polluted or there is a risk of it being polluted

You should follow [WAT-SG-11: Modelling discharges to coastal and transitional waters](https://www.sepa.org.uk/media/152879/wat_sg_11.pdf) to assess the impact on coastal and transitional waters[.](https://www.sepa.org.uk/media/152879/wat_sg_11.pdf)

Step 3: Contaminants are contributing to a coastal or transitional water body being at poor status or if there is a risk that it will be at poor status.

* You should determine if there is any sampling evidence to suggest that the extent of an environmental standard exceedance extends beyond the spatial environmental standards[[6]](#footnote-7).
* You should determine whether the spatial extent of the impact will be greater than the spatial environmental standards. For example, you could carry out a simple screen to determine if the load of contaminants entering the coastal or transitional water is sufficient to exceed the spatial environmental standards when mixed in a volume of water equivalent to the areal spatial environmental standards.

# Appendix 2: Remedial targets

There are many sources of guidance on remediation, including SuRF-UK guidance on sustainable remediation18.

This section sets out the broad principles that you can apply when determining the remediation that would be reasonable.

Compliance with the hazardous substances and pollution assessment criteria can only be relaxed if measures to achieve the criteria are technically infeasible, disproportionately costly or would increase the risks to human health or the quality of the environment as a whole.

The assessment of disproportionate cost may include several factors such as:

* The scale of the contamination impacts and the sensitivity of affected receptors.
* The expected timescales for contamination impacts to persist without remediation.
* Socio-economic factors relating to the redevelopment works.
* The likely cost of remedial works including monitoring and validation.

Even if complete remediation can be demonstrated to be technically infeasible or disproportionately costly at a particular site, this does not necessarily mean that partial remediation of that site will also be infeasible or disproportionately costly.

You should always:

* Remediate the sources of groundwater hazardous substances as far as practicable. Sources are considered to include:
  + Tanks and associated pipework or other underground infrastructure or services containing hazardous substances.
  + Free product non-aqueous phase liquids.
  + Soil and made ground containing leachable concentrations of hazardous substances that could result in groundwater pollution.
* Carry out source management to break the pollutant linkage where inputs of groundwater hazardous and non-hazardous substances are causing groundwater or surface water pollution. This is unless a detailed assessment demonstrates that measures to achieve the objectives are disproportionately costly or would increase the risks to human health or the quality of the environment as a whole. Where a site is affected by contamination upgradient or adjacent to their sites, you should, as a minimum, focus on breaking the pollutant linkage so that the site would not be causing pollution if the other pollutant sources were not present.
* You must take action to prevent a deterioration in status. This only applies where deterioration has not yet occurred or to prevent further deterioration of status. You can’t argue that this is not required because it is disproportionally costly or there are risks to human health or the quality of the environment as a whole. The action you could take could be to control inputs from contaminated soil and/or remedial action within a water body e.g. pump and treat or permeable reactive barrier.
* You should take action to restore water bodies that are less than good status where this was as a result of land contamination provided this is technically feasible and not disproportionately costly. Where you can show that it is technically infeasible or disproportionately costly you need to improve the quality of the water body as much improvement as possible. This could include soil remediation, groundwater remediation such as bioremediation, permeable reactive barriers or sediment management where this is required to remedy the impact on a surface water.  Where the impact is on the future groundwater resource, you will normally need to carry out remedial action to:
  + Prevent expansion of the plume
  + Prevent an upward trend in concentration at the source.
  + Secure a long-term downward trend in contaminant concentration such that the groundwater resource will be restored to good status within an agreed reasonable timescale.  Ideally this timescale would be a matter of a few years, but as a maximum of a generation (20-40 years).

Any proposals for remediation that will not meet this objective must be supported by a detailed cost-benefit assessment.

* You should take speedy action to prevent or remedy impacts on groundwater dependent wetlands or water supplies used for human consumption. You will not normally be able to argue that this is not required.

# Appendix 3:  Statutory guidance description of significant pollution

Paragraph A.46 of the Statutory Guidance provides that when determining whether pollution of the water environment is "significant pollution of the water environment" for the purposes of section 78A(2)(b), the local authority shall have regard to seven measures of significant pollution. Paragraph A.46 containing the seven measures is reproduced below. If you can show the assessment criteria for significant pollution and operational standards for significant pollution are met, then the additional objectives set out here are captured and met.

* Whether there is a breach of, or failure to meet, any statutory quality standard for the water environment at an appropriate pollution assessment point. In the absence of any suitable UK or EU standard, other international standards can be used where demonstrated to be appropriate.
* Whether there is a breach of, or a failure to meet, any operational standard adopted by SEPA for the protection of the water environment.
* Whether the pollution results in an increased level of treatment for an existing drinking water supply to ensure it is suitable for use and to comply with the requirements of Council Directive 98/83 /EC on the quality of water intended for human consumption. The potential for an increased level of treatment must also be considered for future use in drinking water protected areas as defined in sections 6 and 7 of the Water Environment and Water Services (Scotland) Act 2003.
* Whether the pollution results in an increased level of pre-treatment of water abstracted for industrial purposes.
* Whether the pollution results in:
  + deterioration in the status of a water body or failure to meet good status objectives, as defined in the Water Framework Directive 2000/60/EC; and/or
  + the failure of a Protected Area to meet its objectives, as defined in the Water Framework Directive 2000/60/EC;
* Whether there is a significant and sustained upward trend in the concentration of pollutants in groundwater being affected by the land in question.
* Whether there is a material and adverse impact on the economic, social and/or amenity use associated with a particular water environment.

# Appendix 4: List of the types of data to be included in submissions to SEPA

You must provide supporting data to SEPA with any site characterisation submissions in support of the interpretation of risks to the water environment. This covers submissions made in respect of both the Planning and Development Control and Part IIA regimes.

You must undertake a site characterisation and risk assessment in line with this and other appropriate guidance e.g. Local Authority and SEPA guidance on ‘Land contamination and development management’ and [BS 10175: Investigation of potentially contaminated sites – code of practice](https://shop.bsigroup.com/ProductDetail?pid=000000000030362551) and [BS 5930: Code of practice for ground investigations.](https://shop.bsigroup.com/ProductDetail?pid=000000000030268443)

You must include the supporting data listed in [Section A4.1](#_A4.1_Raw_data) in any submission.

If you don’t include this information SEPA cannot initiate any review of the submission. You must indicate if there are information deficiencies resulting from ongoing ‘phased’ investigations.

Once, the information has been provided and a full review is undertaken by SEPA staff, you may still need to supply additional information. For example, you may be required to model the impact that the contamination is having on the water environment or you may need to install further boreholes in more appropriate locations.

## A4.1 Raw data to be supplied

### General Information

* Site name
* NGR of centre of site
* Plan showing the location of the site boundary.
* Name of the developer or owner
* Local authority area

### Previous work

* Any previous reports

### Sources of contamination

* Accurate site investigation plans showing the location and depth of any sources of any contamination including the location of spills, leaks, discharges, working/storage areas and tanks and pipes. Details of the type of contamination should be marked against each area.
* Accurate site investigation plans with the locations of exploratory holes from current and historical investigations e.g. boreholes, trial pits, window samples. These should be clearly labelled on a map/plan.

### Receptors

* Location of potential receptors. This should include:
  + Groundwater.
  + Surface waters.
  + Wetlands (including if they are groundwater fed).
  + Abstractions. You should include the location of authorised abstractions and private water supplies. You can find out the location of authorised abstractions from SEPA and private water supplies from the local authority.

### Hydrogeology

* Methods used for forming exploratory holes, for example boreholes, trial pits and window samples.
* Trial pit logs. Elevation must be surveyed with reference to Ordnance Datum (mAOD).
* Borehole logs, including construction details such as casing depth, screened/open intervals, method of sealing borehole annulus, position of water strikes or seepage and details of the strata thickness and nature of the geological units. Details of any cores/samples taken for testing. Borehole elevation should be surveyed with reference to Ordnance Datum (mAOD).
* Groundwater levels for individual boreholes in meters below ground level (mbgl) and meters above Ordnance Datum (mAOD) with reference to location, response zones and date/time.
* Water levels of surface water features included in the site conceptual model (in meters above Ordnance Datum).
* Results of any in situ or laboratory testing such as hydraulic conductivity testing. This should include the method statements, raw data and interpreted results. The date, location and depth of any testing or sampling should be provided.
* Identification of preferential flow pathways; natural geological conditions and man-made structures such as drainage, utility ducts or mine workings.

### Soil and Groundwater Quality Monitoring

* Environmental quality monitoring. This includes soil, ground gas and vapour, leachability tests & water environment. Sampling details including sample reference information, date, depth and strata and results. You must employ sufficiently low limits of detection with the laboratory analyses to enable comparison of data against appropriate assessment criteria. All relevant original data should be included e.g., sample records and laboratory certificates.
* Field observations (thickness, visual and olfactory) or non-aqueous phase liquids (NAPL). This should include the location of observations e.g. BH1 and date.

Investigation design, logging and sampling techniques should be carried out in accordance with current codes of practice, such as

* [BS 10175:2011+A2:2017 Investigation of potentially contaminated sites – code of practice](https://shop.bsigroup.com/ProductDetail?pid=000000000030362551)
* [BS 5930:2015+A1:2020 Code of practice for ground investigations](https://shop.bsigroup.com/ProductDetail?pid=000000000030268443)

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1. which was inserted by section 57 of the Environment Act 1995. [↑](#footnote-ref-2)
2. In line with Section C.17 of the Part IIA Statutory Guidance. [↑](#footnote-ref-3)
3. The Scotland River Basin District (Standards) Directions 2024 [↑](#footnote-ref-4)
4. This can be an area greater than or equal to 100 x 100π m2 [↑](#footnote-ref-5)
5. The Scotland River basin District (Standards) Directions 2024 [↑](#footnote-ref-6)
6. The Scotland River Basin District (Standards) Directions 2024. [↑](#footnote-ref-7)