

# Guidance for Pollution Prevention

## Working at construction and demolition sites: GPP 6

Version 1. April 2023

This guidance has been produced by the Northern Ireland Environment Agency (NIEA) and the Scottish Environment Protection Agency (SEPA). (Not yet reviewed by Natural Resources Wales (NRW)). For Northern Ireland, Scotland and Wales, this document provides guidance on environmental legislation. These guidelines are not endorsed by the Environment Agency as regulatory guidance in England.

For guidance on environmental regulations in England go to [www.gov.uk](http://www.gov.uk) .  
To find the relevant regulations visit [www.legislation.gov.uk](http://www.legislation.gov.uk) .

Guidance for Pollution Prevention (GPP) documents are based on relevant legislation and reflect current good practice. Following this guidance will help you manage the environmental responsibilities to prevent pollution and comply with the law.

If you cause pollution or allow it to occur, you will be committing a criminal offence. Following these guidelines will help you reduce the likelihood of a pollution incident. If one does occur contact the environmental regulator immediately on the relevant incident hotline number: In Northern Ireland and Scotland call **0800 80 70 60**, in Wales call **0300 065 3000**.

## Acknowledgements

We wish to acknowledge the assistance provided by MacKenzie Construction in the development of this guidance.

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## Section 1: Introduction

### 1.1 Who is this guidance for?

This guidance is for anyone carrying out works or activities on construction or demolition sites. Any building or development works are considered to be construction sites. Such activities have the potential to cause pollution and harm to the environment.

This document is split into the following key sections:

- Introduction.
- Managing water on construction sites.
- Soils and nature.
- Storing and using fuels.
- Waste management.
- Working with concrete, hazardous materials and recyclates.
- Pollution incident response planning.
- Reporting an incident.

### 1.2 Legal requirements

Formal approval may be required when carrying out any works or activities that may have impacts on the environment. It can take up to four months to process an application for formal approval, it is therefore important you contact the environmental regulator early in the project.

There are laws that protect land, water, air, wildlife, and people from pollution. If you cause pollution you will be committing an offence. Penalties include fines, imprisonment, Fixed Penalty Notices, stopwork notices or equivalent, and having to pay clean-up costs, along with damage to your reputation.

The Legal requirements are different throughout the United Kingdom (UK) (England, Northern Ireland, Scotland and Wales).

***Only clean uncontaminated water can be discharged without formal approval.***

See **Reference 1**: CIRIA – Environmental good practice on site guide. (C741)

If you are located in **Scotland** or **Northern Ireland**, you can find information on your legal environmental obligations by visiting the NetRegs website (see **website list**).

In **Scotland**, also read **Reference 2** SEPA: Guidance for construction.

In **Wales** guidance on regulations can be found on the Natural Resources Wales (NRW) and Welsh Government website (see **website list**).

### 1.3 Which type(s) of formal approval may I need?

In this document we refer to 'formal approval', which covers the authorisation(s) you may need from the environmental regulator. A formal approval may be called a consent, licence or permit. You may be committing an offence if you carry out your works or activities without all the relevant formal approvals in place. See **Appendix A** for the main ones that apply in your area.

You are responsible for ensuring that you understand and comply with all applicable legislation wherever your site is located. If you have any concerns, or require clarification, contact your environmental regulator before taking action. Ignorance is no defence under law, so you need to understand which laws apply to you and your activities.

#### **1.4 Scoping your project**

Allowing time to plan and prepare before work starts on site can significantly reduce the risk of a pollution incident. Once you have identified all the potential sources of pollution, including land contamination on your site, you can put in place measures to avoid or reduce the risk of these causing problems.

Planning ahead will:

- help the job run smoothly.
- improve risk management, reducing risk of pollution incidents and enforcement action.
- help identify efficiencies and potential cost savings.
- improve relationships with clients, local regulators and neighbours and reduce likelihood of complaints.
- reduce damage and clean-up costs if an incident does happen.
- help you win and maintain contracts.
- protect and enhance your reputation.

When planning works, take into account sensitive times for any wildlife species that might be affected, for example fish spawning season or breeding birds. Make sure you can complete the works before any issues arise. If there are delays, or works overrun, you could for example find that works in or near water are overlapping with spawning time for fish. This could cause delays to the project or risk causing serious environmental harm if you go ahead. Your planning should allow plenty of time for these works to be carried out.

## Plan to protect the environment:

**Start your Plan here.**



**Figure 1: Plan to protect the Environment (courtesy NetRegs 2016)**

You can get information on local surface and groundwater water sensitivity from the environmental regulator before you start any work. In addition to preventing pollution of surface waters and groundwater you should take precautions to prevent blocking of channels and culverts, and erosion of the riverbank or bed.

This information should form part of the environmental aspects and impact assessment and Site Environmental Management Plan (SEMP) or Construction Environmental Management Plan (CEMP).

## 1.5 Pollution Prevention

It is important to understand how activities could affect the environment and cause pollution. Think about what pollution linkages there are (see **Figure 2**).



**Figure 2: Example of a pollution linkage using the source > pathway > receptor model.**

**Note:** Groundwater is both a pathway and a receptor, and some sites may already be contaminated and require additional management measures.

The site and activities will only cause a risk to the environment or people if you have all three parts of the pollutant linkage present i.e. a source, a pathway and a receptor. Bear in mind that a pathway can be created in the course of your activities, such as vehicle tracks across stripped soil.

You should put in place measures to prevent or minimise or mitigate the effects of any risks. This will break the pollutant linkages between the source, pathway and receptor. Monitor the measures you have put in place in case new sources, pathways or receptors appear during works.

**Surface water drains go directly to a watercourse and therefore should only carry clean uncontaminated rainwater.**

By doing this, you can identify how to prevent or reduce the likelihood of pollution and reduce the impact of any risks that may occur.

It is important that you fully understand the local drainage network as pollution is often caused by mistaking a surface water drain for a foul sewer. Contact your local water company for advice on this.

Colour coding drains can help prevent mistakes. Use blue (or the yellow fish symbol) for connections to surface water drains, and red for connections to the foul sewer. Make sure this is understood by all staff on site.

If you cause pollution you will be responsible for the clean-up cost. This can be expensive and time consuming particularly if groundwater has become contaminated. There may be additional costs associated with recovering the cost for the environmental regulator's response (in line with the Polluter Pays Principle), you may receive fines through the criminal courts or civil claims, and you may experience a reputational cost i.e. loss of future work.



Following this Guidance for Pollution Prevention will help you reduce the likelihood of an incident. However, if one does occur contact the environmental regulator immediately on the relevant Incident Hotline number. A rapid response to incidents will help to minimise the environmental impact and could reduce the overall costs.

In **Northern Ireland, Scotland and England**: Call 0800 80 70 60

In **Wales**: Call 0300 065 3000

### 1.6 Emergency works

Even if the works you are carrying out are required because of an emergency, this Guidance for Pollution Prevention should be followed as closely as possible. An emergency can be defined as an occurrence, which presents a risk of:

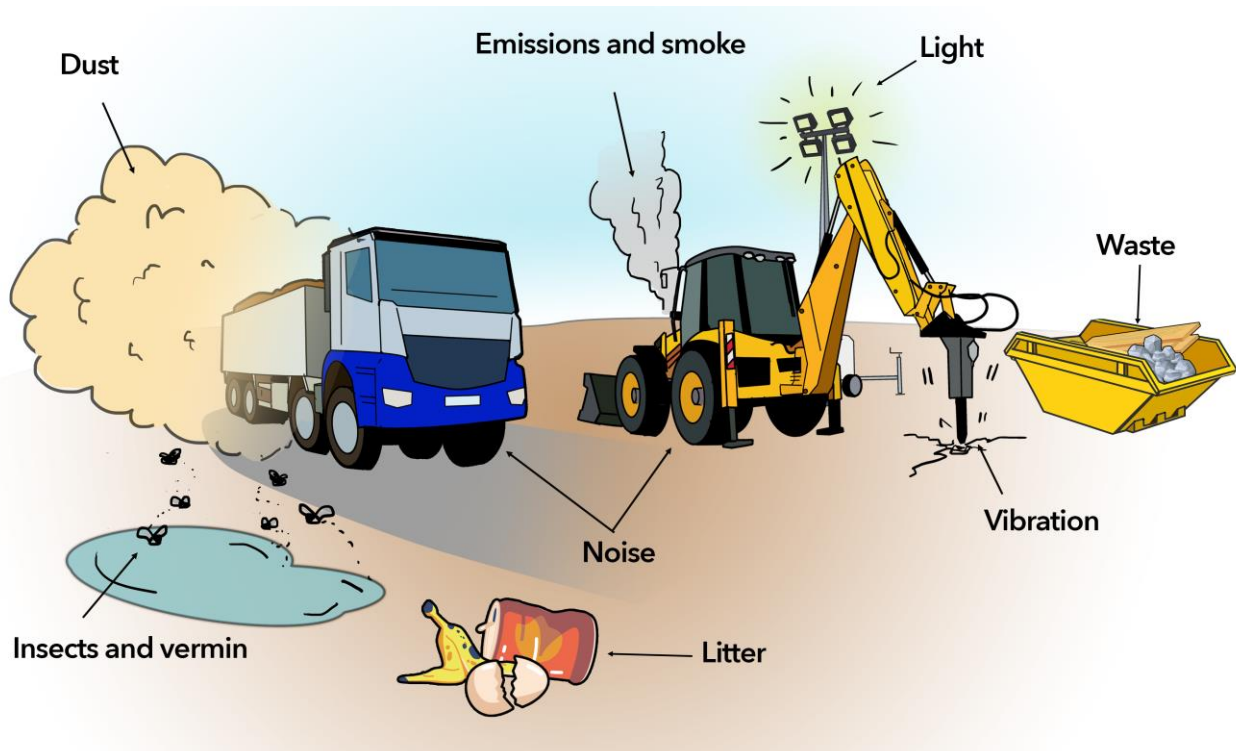
- serious flooding.
- serious detrimental impact on drainage.
- serious harm to the environment or people.

Contact should be made with the environmental regulator as soon as practicable to discuss if further approval is required. If works are carried out without the knowledge of the environmental regulator, enforcement action may be considered whether it is an emergency or not.

### 1.7 Preventing nuisances

Many forms of pollution that affect people are classed as statutory nuisance. Noise is the largest cause of complaint against construction and demolition sites. Nuisances can also affect the environment, in particular ecology; for example, noise or light pollution can disturb nesting birds, which can result in enforcement action under the Wildlife and Countryside Act.

#### Common nuisances



**Figure 3 Common nuisances**

Common nuisances include:

- **Dust** – if there's the potential to generate dust on site, can you erect a physical barrier at the site boundary to prevent it becoming a nuisance to your neighbours?
- **Litter** – from packaging and materials that can blow around the site and end up in watercourses or adjacent sites.
- **Light** – can cause disturbance to adjacent residents and ecology, especially temporary lighting. This nuisance can be prevented through screening, effective programming of work, directional lighting and type of lights used.
- **Insects and vermin** – standing water, or unclean sites, can lead to insects and vermin breeding and creating a nuisance.
- **Emissions/smoke** – can be caused by poorly maintained plant, exhausts near to neighbours and/or property (nuisance only). There should be no reason for generating smoke on site through normal activities. But if you expect to generate smoke, contact your regulator to approve the method of work before work starts.
- **Burning waste.** All waste must be stored securely, segregated as required and removed from the site by a licenced carrier. Never burn waste on site.
- **Vibration** – is caused by the same sources as noise but travelling through solid objects. This can cause a nuisance to neighbours and to ecological habitats. You should identify your potential to cause vibration nuisance in line with noise.
- **Noise** – generated throughout construction activities. Establish baseline noise levels, the noise levels before you start work, and identify who and what may be affected by noise, i.e., neighbours and ecology.

If you expect to generate considerable noise – above the baseline – throughout the contract or for specific activities, such as piling, then you should apply to your local council before you start work for consent. This consent allows only for the **noise made by your construction activities**.

In **Scotland**, this is known as a Section 61 consent. In **Northern Ireland**, this is known as an Article 41 consent. Approval can take time and you will need to fully consider the work and methods to reduce noise.

Once approved, you must complete the work in accordance with the approved methods, including monitoring requirements. Note that consents from your Council only apply to statutory nuisance, and don't consider disturbance to ecology. Possible disturbance to wildlife and ecology is covered in Section 3 of this guide. NatureScot and the NIEA deal with issues relating to protected sites or species.

The best way to prevent nuisance is early planning and adopting good practice, which will also reduce the risk of complaints. If you cause a statutory nuisance, you can be served an 'abatement notice' by the local council. These notices require you to stop or will impose restrictions on your operations.

Throughout your time on site you should undertake **regular monitoring** of activities that can cause nuisance, including checking that actions designed to reduce or eliminate nuisance are working. This doesn't need to be an additional activity – simply ensure that site employees with responsibilities are aware and look out for potential nuisance whilst on site.

Consider the potential for nuisance in the planning stage for the site. Discuss the potential for nuisance with local regulators. Arrange a meeting with your local council's Environmental Health Officer (EHO) before work starts on site, to put forward nuisance mitigation proposals and to take on board any suggestions from the EHO. If the site is affected by land contamination as a result of previous land uses, additional considerations may be required during construction and

demolition activities. For example, if soil is contaminated with hydrocarbons you may need to treat the soil before it can be reused on site. The time required for this treatment would have to be taken into consideration when planning your works.

### **Operating vehicles and machinery**

- Where possible, use machinery or plant with noise control measures e.g. silencers, mufflers, acoustic covers.
- Ensure that potential to cause nuisance through exhaust emissions is minimised by maintaining plant to prevent black smoke and positioning mobile or fixed plant away from site boundaries.
- Comply with any restrictions on operating hours or emissions set out in the planning consent.
- Ensure machinery and vehicles are well maintained to meet necessary standards, minimise emissions and noise.
- Use one-way traffic systems to minimise the annoyance caused by vehicle reversing alarms.
- Small plant can be further silenced by building straw bale barriers or plywood walls around them.
- Co-ordinate deliveries to your site to reduce traffic noise and emissions. Investigate consolidating deliveries from different suppliers into one single vehicle movement.

### **Consider the neighbours, and make sure they are well informed**

- Talk to your neighbours, explain what you're doing and try to find solutions before problems arise.
- Give neighbours your contact details so that they can speak to you directly if they need to.
- Respond to any requests or complaints from neighbours or regulators.
- Only use temporary lighting where absolutely necessary and use low power lighting or down lighting, or erect physical barriers such as screens.
- Consider the impact and potential for nuisance outside your site boundary, for example dust from vehicles making deliveries.
- Make sure all waste is stored securely in covered skips/containers to prevent wind blown litter causing a nuisance.
- Install dust monitors if your site borders other buildings: especially schools, housing, or urban streets with pedestrians. Takes steps such as re-routing vehicles or damping down dusty areas to reduce dust. Regularly check dust levels.
- You should fit anti-vibration mountings to rotating / impacting equipment where practical.
- Place / use site compound buildings, soil mounds, embankments, or other site features as noise barriers where possible.
- Keep haul roads as smooth as possible and maintain them to reduce vibration impacts caused by heavy plant movements.

**Consider joining the Considerate Constructor Scheme – see Reference 12 for details.**

## Section 2: Managing water on construction sites

### 2.1 Water Management hierarchy



**Figure 4. The water management hierarchy**

During the initial planning stages, you should include details on how you are going to manage water from your site.

The water hierarchy, **Figure 4**, indicates the steps to take when managing water.

**Note:** You may need to carry out more than one of the options to manage water.

### 2.2 Minimise 'dirty' water

You should minimise the amount of 'dirty' water produced from your site (**See section 1**) you will have less silty water to treat for discharge to land or water, or to the sewer network.

**Reduce the area of stripped soil** - Plan your works so that you only strip soils where you need to for the next part of the development. Keep vegetation cover where possible to prevent silty run-off. The less bare soil the less silty run-off will need to be dealt with. Take into account the lay of the land, for example working around contours, and leaving extra width of buffer strips on sloping land.

**Stop water entering working areas** - Use cut-off ditches on the edge of your site to collect surface run-off from neighbouring land. Use the cut-off ditch to intercept water from any existing ditches or field drains that enter your site.

This will reduce the amount of water entering your site and help to reduce the scale of any treatment system such as settlement ponds or Sustainable Drainage Systems (SuDS) that you will need to build.

**Keep nearby roads clean** - Where your site has access to public roads you must make sure that silty run-off, or soil and debris from vehicles does not end up on the highway. You must make sure that drainage on the site takes run-off away from roads, and you must provide some wheel-washing facilities for vehicles that leave the site.

Even clean water should be prevented from leaving your site onto nearby roads. This can cause a hazard for traffic and can lead to icing in the winter months.

**Protect watercourses** - Do not strip soil up to the edges of any watercourse, stream, or drainage ditch because loose soil can be washed into the watercourse. This can silt-up the riverbed and harm wildlife. Leave at least a 10m buffer strip between works and watercourses.

This should be increased where the land slopes, or where there is a significant amount of bare earth upslope. Check that no pathways for pollution run through the buffer strip, for example storm drains. You can be liable for causing pollution even if the pollution was only caused by your indirect actions.

Before you start work, identify and mark out any areas of land you intend to use for sacrificial or temporary surface water drainage measures. This may include temporary settlement ponds or Sustainable Drainage Systems (SuDS). Make sure that adequate land is set aside for these features.

Existing field drains can provide a route for the discharge of polluted water to watercourses. It is essential that you know where they are and do not allow polluted run-off to enter them. This is particularly important where you choose to treat run-off by discharging silty water over the ground. This is only possible where conditions allow infiltration into the soil as a way of removing silt. In most cases you will need to contain and treat silty water before discharging to land. This is particularly important where you choose to treat runoff by discharging silty water over the ground using a SuDS.

Plan to manage silt run-off so that it does not pollute watercourses or ruin any SuDS designed for the completed phase.

### 2.3 Onsite water treatment

If silty water is produced, you should treat the water to remove contaminants. This could be achieved using Sustainable Drainage Systems (SuDS), or other treatment systems such as settlement tanks/lagoons. Plan for the removal of temporary water treatment measures once construction is complete.

If the site is affected by land contamination as a result of previous land uses, additional considerations may be required during construction and demolition activities.

**Contain and treat silty water** before discharging to land or water.

You must put in place a surface drainage system that is able to contain the maximum amount of water that might be expected to run off the site during the period of construction.

This includes working areas and areas used for movement or parking of vehicles. In Scotland this will involve the construction of temporary SuDS with the correct capacity.

**Effective settlement** allows silty water to be eventually discharged over land or to watercourses.

To work, the flow of water through a water settlement tank must slow down sufficiently for suspended solids to settle out.

To achieve this, the settlement facility must be the correct size for the volume of water that will flow through it and the size of the particles suspended within it. The smaller the particle sizes, the longer they will take to settle out.

The greater the volume of water that you anticipate, the larger the capacity of the lagoon required. You may need to use a series of connected ponds, depending on the type and amount of silt that is held in suspension.

You must make sure that you:

- design your settlement pond(s) carefully so it can take the amount of water that will flow through it.
- can stop discharges from your pond if the water becomes contaminated.
- do not cause water pollution from any flocculants you use, such as polyelectrolytes or alum.
- treat water entering your settlement pond if it is contaminated by pollutants other than suspended solids.
- plan for the removal of the feature once the construction work is finished.

CIRIA have produced a document called 'Control of Water Pollution from Construction Sites - Guidance for consultants and contractors' (2001) which outlines methods of water control including retention time calculations for settlement lagoons. See **Reference 3** CIRIA – Control of water from construction sites.

### Alternative methods

On site where there is no room for settlement ponds then alternative methods may be used, including the use of bespoke filtration systems designed to remove silt. These can be of assorted sizes and require regular maintenance to work effectively.

For more information on water treatment See **Section 2.4**: Treatment options.

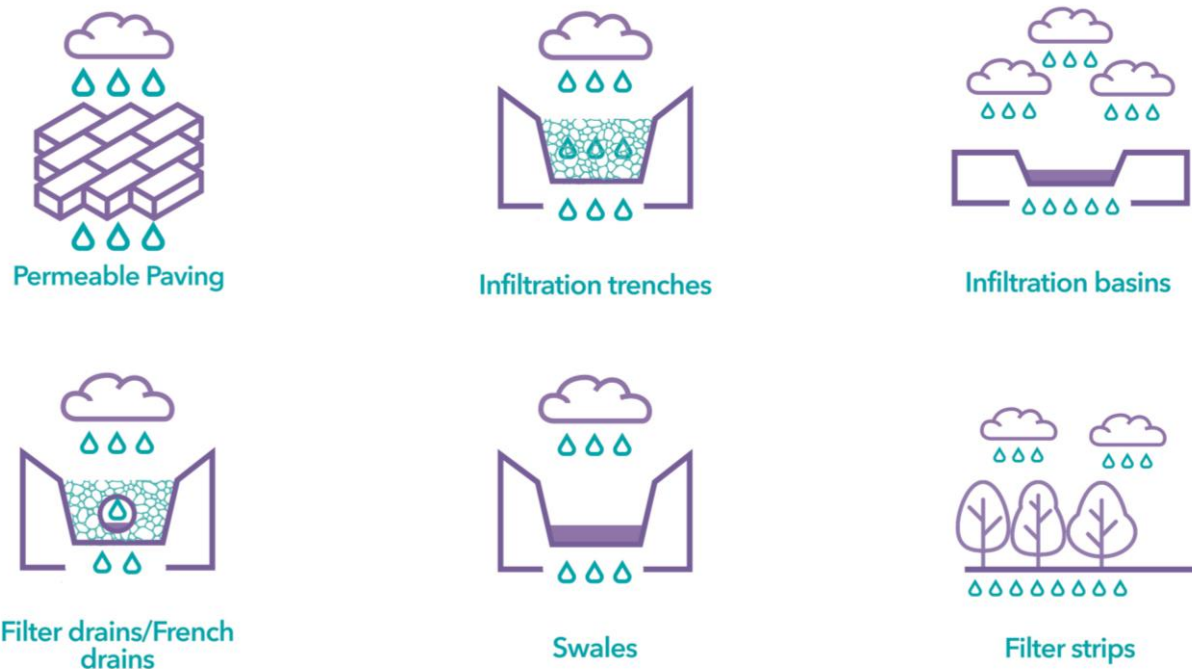
## 2.4 Treatment Options

### 2.4.1 Sustainable Drainage Systems (SuDS)

Sustainable drainage is the practice of controlling and managing surface water run-off as close to its origin as practicable by slowing and reducing flows, allowing adequate settlement and potentially biological action to take place before water is discharged to the water environment. The most effective SuDS use a series of drainage components to imitate natural drainage rather than traditional end-of-pipe drainage solutions. Well designed, easy to maintain SuDS will deliver a range of important benefits; they can:

- reduce flood risk from development within a catchment by slowing down run-off reaching the water environment.
- minimise diffuse pollution arising from surface water run-off.
- minimise the risk of pollution to groundwater.
- minimise environmental damage, such as bank erosion and damage to habitats.
- maintain or restore the natural flow regime of the receiving watercourse.
- maintain recharge to groundwater.
- achieve environmental enhancements, improvement to wildlife habitats, amenity, and landscape quality.
- help meet conditions set in license or consents.

## Source control SuDS



**Figure 5. Source control SuDS examples**

**Permeable/porous surface pavements** – water permeates into the soil or subsurface reservoir, which can then be allowed to discharge slowly rather than immediately running off. This will minimise the volume of water that you might need to treat and can also recharge groundwater. Permeable/porous pavements need to be protected during installation from blocking by excessive silt-contaminated water.

**Infiltration trenches** – a shallow excavated trench backfilled with stone to make an underground reservoir. Run off is diverted into the trench and then filters into the subsoil. The closer to the source the more effective this method will be.

**Infiltration basins** – a shallow surface impoundment where water is stored until it gradually infiltrates into the soil of the basin floor. The performance of the basin depends on the permeability of the soil and the depth of the water table.

**Filter drains or French drains** - these are like infiltration trenches but also allow movement of run off slowly towards a watercourse allowing time for filtration, storage, and some loss of water due to evaporation / infiltration.

**Swales** – grassed wide shallow depressions, which lead water overland from a drained surface into a storage or discharge system. They provide temporary storage for run off reducing high flows. Solids are retained and oily residues and organic matter broken down in the top layer of the soil and vegetation.

**Filter strips** – vegetated sections of land designed to accept run off as an overland sheet flow. To be effective they should be 5 – 15 metres wide and are best employed on the upstream end of a drainage system. They are most effective at removing excess solids and pollutants before discharging to downstream system.

Other SuDS can be considered including ponds, retention basins (dry ponds) and wetlands.

At the planning stage of your project, consider how your drainage can be managed by using SuDS.

This will ensure that SuDS infrastructure is properly maintained and functions effectively for its design life. It is advisable to begin discussions at an early stage to help ensure that sufficient land is made available to implement SuDS. Depending on design and soil type, you might consider lining the banks of a SuDS pond to make sure they function effectively, by reducing the influx of suspended solids from exposed banks.

Make sure you consider the soil type (necessary to determine the settlement rate for suspended solids), any chemical contaminants present in the soils, and the volume of water the SuDS may need to deal with. If the site is affected by land contamination as a result of previous land uses, additional considerations will be required to prevent pollution resulting from this during construction and demolition activities.

Pre-application discussions between the developer, local planning authority, water and sewerage provider and other relevant bodies will help to identify the most cost-effective way to integrate SuDS within the emerging scheme design.

For phased developments, the design should indicate how SuDS features will be:

- managed,
- protected,
- commissioned, and
- decommissioned

This is especially important in instances where the SuDS components use may change throughout the construction programme. This should also include any consents required for different activities.

Pollution removal by these methods is achieved by sedimentation, adsorption, absorption, filtration, and microbial action.

CIRIA have more detailed information on SuDS which can be found on the [CIRIA website](#) (See website list at the end of this document) or in:

- **Reference 4** Susdrain – Pollution prevention.
- **Reference 5:** SuDS.

In **Scotland**, discharges of water run-off from construction sites are required to be treated by either a SuDS or an equivalent system which is equipped to avoid pollution. However, equivalent systems are not permissible for treatment of run-off water from completed developments - See **Reference 6**.

#### **2.4.2 Settlement lagoons or tanks**

To be effective, a settlement lagoon or tank should retain contaminated water long enough for silt to settle out. The length of time will depend on the type of silt, with finer clay solids taking longer to settle. If you use flocculants to aid settlement you must discuss this option with your environmental regulator before use. Flocculants can themselves be polluting and/ or toxic and need careful use and monitoring to be effective. The checklist below gives guidance on lagoon/tank operation.



Table 2.1 gives guidance on the volume of lagoon or tank needed for a three-hour settlement at a defined rate of inlet discharge. **Note:** *This may not be suitable for the settlement of fine clay solids.*

Typical dimension of a settlement lagoon / tank for a three-hour settling time			
Pump Diameter	Discharge rate into the lagoon	Length	Width
6-inch pump	3000 l/ min	60 m	20 m
	6000 l/ min	80 m	27 m
4-inch pump	1000 l/ min	30 m	10 m
	2500 l/ min	50 m	17 m
Assuming a tank / lagoon depth of 1 m, where length = three times the width			

**Table 2.1: Settlement Pond dimensions - the size of the tank/lagoon is determined by the rate of introduction of water.**

#### Settlement lagoon/tank – good practice checklist

- maintain a constant pumped inlet rate.
- minimise the inlet flow as much as possible by using energy dissipaters or rip rap.
- position inlet pipework vertically to dissipate energy.
- provide lined inlet chamber to reduce velocity of flow.
- line the inlet chamber and outlet weir with materials like geotextiles, brickwork, polythene, or timber.
- In **Wales**, provide an impermeable liner for the lagoon, otherwise a permit is required.
- have a long outlet weir to minimise disturbance.
- provide two or three lagoons in series or parallel to increase silt retention, preferably with a bypass facility to allow maintenance, when necessary.
- de-silt inlet chamber regularly.
- monitor discharge quality frequently.

See **Reference 7:** Good practice for construction of settlement ponds.

#### 2.4.3 Filtration

If you do not have the space for lagoons and the water is contaminated with coarse silt only (not fine clay silts or any other pollutants), you may be able to use tanks filled with filter material. Single sized aggregates 5–10 mm, geotextiles, silt socks/bags or straw bales wrapped in geotextiles can also be used as a filter.

You must monitor the inlet pump rate and discharge quality carefully, to ensure only clean, uncontaminated water is discharged. Discharge should then be to foul sewer (with the water and sewerage company's permission), land (with the environmental regulators and landowner's permission), or to surface water drains (with the environmental regulator's permission).

#### 2.4.4 Oil separators

If there is a risk of oil being discharged to the water environment or foul sewers, you may need to install an oil separator.

Oil separators (also known as oil interceptors) are fitted to surface water drainage systems to prevent pollution from oils and to prevent disruption to sewage treatment works. They are designed to separate the oil from the water, and to collect the oil for removal. They can be installed at the point where potentially contaminated water leaves a site, and protect water courses, groundwater, land, SuDS or the sewer system. They are often used to contain leaks from vehicles and plant, and where oils are handled, and accidental spills are possible.

See **Reference 8** [GPP3: Use and design of oil separators in surface water drainage systems](#).

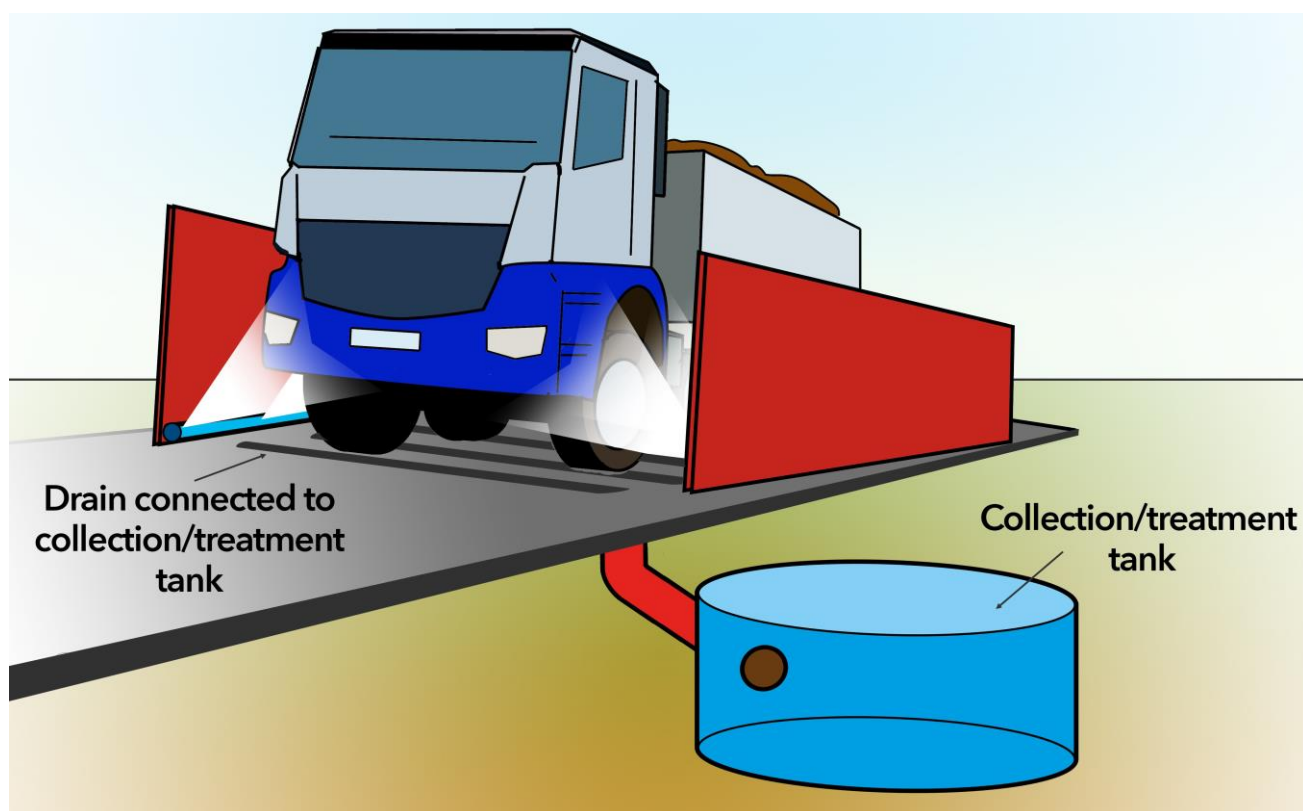
#### 2.5 Recycle water

In certain circumstances it may be possible to recycle water, such as rainwater harvesting, or re-use of treated water – for example in wheel washing.

##### 2.5.1 Rainwater harvesting

Capture rainwater from any buildings or roofed storage areas and use on site for mixing cement or washing down equipment. This reduces the amount of rainwater leaving the site and reduces the amount used from other supplies.

##### 2.5.2 Wheel washing systems



**Figure 6. Wheel washing**

Wheel washing systems will capture wash-water then filter and allow it to settle before being reused for washing other vehicles. These systems reduce the demands for clean water and reduce the amount of contaminated water that needs to be dealt with.

**Note:** *Water that may be contaminated with hazardous substances, such as concrete, cement or grout is not suitable for re-use in wheel washing systems or for dust suppression.*

If wheel washing is carried out without the use of a bespoke system, it is important to treat the run-off by allowing settlement of the suspended solids. If a settlement tank/pond is used then it is important that no detergents are used in the washing process. The run-off from this should be directed to surface water management features (e.g. SuDS).

Wheel washing is an important way of preventing the spread of invasive non-native species. Make sure that a detailed check and risk assessment is carried out for non-native species when your initial site feasibility assessments and surveys take place.

If invasive non-native species are present, tyres can carry seeds or rhizomes around your site, or offsite to other locations. If invasives are present then collect wash water and have it disposed of by a licenced contractor.

Never carry out wheel washing where the run-off goes directly into surface water drains or into watercourses.

If wash water can't be treated then it must be collected and tankered off-site for treatment and disposal in accordance with the Duty of Care for Waste.

### 2.5.3 Recycle concrete wash down water

Wash down water arising from the washing of equipment that has come into contact with concrete must be collected in an impervious container and, if possible, treated to enable recycling/re-use within the wash down area or concrete batching process.

**Note:** *Wash down water cannot be used for wheel washes or dust suppression purposes.*

## 2.6 Disposal of water from your site

Where run off water is contaminated with silt or other pollutants, such as oil, this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. (**See Section 2.4 Treatment options**). You should minimise the amount of dirty water produced on site by diverting clean, uncontaminated water from areas such as roads. See **Section 2.2**.

Certain persistent pollutants will require specialist treatments or off-site disposal to an authorised treatment facility. Your water/sewage provider may also require the treatment of water prior to issuing a consent for disposal to the foul sewer.

Discharges to the water environment may require formal approval from the environmental regulator – **See sections 1.2 and 1.3, Appendix A** and contact details see **Further information**.

If you require formal approval, it may limit the volume, amount of silt and the presence of any oil in the discharge and may have conditions for additional substances.

In **Scotland** and **Wales** all surface water discharges from new developments require authorisation and to be treated by a Sustainable Drainage System (SuDS) or equivalent system. **See Section 2.4.1**

Discharges to public foul sewers will require consent from the water and sewerage provider and may require treatment. See **Reference 9** for details on the water and sewerage providers in your area. If the water and sewerage provider is unable to approve, it will be necessary to tanker the contaminated water off site for authorised disposal (**Section 2.6.3**).

The choice of method for the treatment and disposal of water will depend on:

- the volume of water.
- the area of land available for storage, treatment, or discharge.
- the amount and composition of the silt, e.g., heavy metals, labile organic matter.
- the presence and type of other substances in the water.
- the conditions of any consent or authorisation.
- ease of access and availability of utilities.

If you do not have the space for lagoons and the water is contaminated with coarse silt only (not fine clay silts or any other pollutants), you may be able to use tanks filled with filter material.

When disposing of water from construction sites you must prevent this from entering nearby roads.

### 2.6.1 Pump to grassland

This method of disposal is only suitable for water contaminated with silt only and you must have permission from your environmental regulator and landowner. The discharge rate must match the rate of infiltration into the soil, which will vary with the soil type (See **Table 2.2**), weather, amount of vegetation cover and the gradient. Discharges should be far away from excavations to avoid re-circulation through the ground and must be monitored to prevent scouring, waterlogging, overland flow, and sediment mobilisation issues.

If the site is affected by land contamination as a result of previous land uses, additional considerations will be required to prevent pollution resulting from this during construction and demolition activities.

***It is essential to minimise the volume of clean water that becomes contaminated, by diverting clean water away from working areas.***

Soil type	Infiltration co-efficient (m/h)
Gravel	10-1000
Sand	0.1-100
Loamy sand	0.01-1
Sandy loam	0.05-0.5
Loam	0.001-0.1
Silt loam	0.0005-0.05
Chalk	0.001-100
Cut off point for most infiltration drainage systems	0.001
Sandy clay loam	0.001-0.01
Silty clay loam	0.00005-0.0005
Clay	<0.0001
Till	0.00001-0.01
Rock	0.00001-0.1

**Table 2.2: Typical infiltration rates for different soil types (Bettess, 1996)**

(If the site is affected by land contamination as a result of previous land uses, additional considerations will be required to prevent pollution resulting from this during construction and demolition activities).

### 2.6.2 Discharge to sewer

If you plan to discharge to the public sewer you must:

- **Get permission from your sewerage provider** - Discharges to foul sewer will require the permission of the local water and sewerage provider. You must contact your local water and sewerage provider as early as possible in your project (See **Reference 9**).
- **Meet certain conditions** - If you get permission to discharge to the sewer system, you will have to meet certain conditions. This might include the volume of water discharged, the quality of the water and will also require pre-discharge treatment to be carried out to prevent silting up of the sewer network. The pH of the discharge may need to be adjusted if there is a risk of contamination from cement, grout or other chemicals.

Details will be included in your discharge consent.

You must apply for permission before works commence so you know in advance what treatment is required and adequate treatment areas can be designed for your site.

### 2.6.3 Tanker off site

If no other disposal routes are available, then contaminated water can be collected by tanker for authorised disposal or treatment off-site. This may be a costly option and must be discussed with your environmental regulator at the scoping stage of your project. This method of disposal is often appropriate for water used in recirculating systems for wheel-washing, or water collected from bunds used for oil, fuel and chemical storage.

You must comply with your Duty of Care obligations and obtain Waste Transfer Notes/ Consignment Notes for any waste leaving site.

## Section 3: Soils and nature

### 3.1 Natural Soils (Including peat)

Soil is a key part of our environment and impacts:

- air and water quality.
- climate.
- biodiversity.
- economy.

Soils perform a wide range of essential environmental, social and economic functions, such as growing food, forestry, controlling the quality and quantity of water flow, providing habitats and sustaining biodiversity, storing carbon and providing a platform for buildings and roads.

To protect soils, avoid:

- **Sealing soils** (capping soils with concrete, tarmac, for example). This can alter the soil structure and chemistry and affect the way water drains through it.
- **Contamination** (from spills of oil, cement or grout or other materials that leach into the soil).
- **Compaction** (running heavy plant across it or storing building materials can compact the soil. This can prevent any regrowth once works are complete and can prevent water drainage)
- **Mixing with subsoil or poor management of stockpiles**, (this reduces the quality and the options for re-use).
- **Wasting good soil** (mixing or contaminating with other waste, plastic, other contaminated soils, or materials). This might mean it all has to be landfilled or treated before reuse.

**Before starting work on a contract have a soil survey carried out.** Prepare a Soil Resource Plan (this should be done along with ecological, archaeological and invasive species surveys)

Prepare a soil resource plan:

- Include the areas of topsoil and subsoil to be stripped – the routes for vehicles and location of stockpiles.
- Set out how to reuse soil on site and to improve the soil for landscape/garden or ecological/habitat purposes.
- Make sure that soil storage periods are kept as short as possible.
- Show the types and management of stockpiles. This prevents good quality soil becoming contaminated with poor subsoil or chemicals/waste materials.
- Plan the position of stockpiles – not beside trees, next to ditches or any other watercourse or drains.
- If a stockpile is to be kept for a while (say 6 months or more) then seed with grass and clover. This prevents other weeds taking over.
- Cordon off stockpiles to protect them from construction works.

#### 3.1.1 Stockpiles

Making good stockpiles means you protect the soil for future use.

- Remove vegetation from the area to be used for the stockpile and keep vegetation out of the stockpile when stripping soil.

- Don't strip soils from below trees that are going to remain on the site.
- Dry soil lasts better and stays dry. Plan to strip soil during dry weather. If stockpiled when wet or plastic, it does not dry out and is more difficult to re-use. It may need to be spread and dried, - re-aerated and then used.
- If heavy rain is forecast (>10mm in 24 hours) suspend work until the ground has dried out. Don't strip soil after heavy rain and if there are pools of water on the surface.
- Don't strip soil too deeply. This could mix soil and subsoil. This reduces the soil fertility and makes it less useful for landscaping or habitat creation. Keep stockpiles of topsoil and subsoil separate.
- Use tracked equipment if possible, to reduce compaction, and stick to planned temporary haul routes.
- Don't make the stockpiles steep sided (greater than ~30 degrees) and if they will be there for more than a few weeks, seed them to prevent weeds taking over. Check for plants like rosebay willow herb (produces lots of seeds) or ragwort (poisonous). Remove them before they become established.
- Protect stockpiles:
  - Use cordons and signs to clearly mark stockpiles and the type of soil they contain.
  - Site stockpiles where vehicles will not run over them.
- Don't mix different quality soil or subsoil.
- Don't add soil from an area with invasive species to your stockpile.

Locate your stockpiles:

- away from trees, watercourses, ditches, and drains.
- on level ground, if possible.
- Avoid sloping ground, but, if necessary, then make sure the stockpile is stabilised to prevent slip.

Prevent run-off from stockpiles entering drains, ditches, watercourses. You can prevent pollution from silty run-off from stockpiles by:

- covering them.
- making the surface smooth and damped down in dry weather to prevent dust.
- using silt fencing around the base.
- seeding the stockpile and having a cover crop, if the stockpile is going to remain for any length of time (maybe 6 months or more).
- making sure any run-off from stockpiles is diverted to a grassy area to soak away or into a suitable settlement pond.

You should prevent stockpiles from:

- drying out – this will prevent windblown dust.
- getting above the height of the site boundary.
- being eroded by rain or surface water.

### Using soil from stockpiles

Before you place the topsoil, make sure the subsoil has been broken up, particularly if vehicles or machinery have crossed it. This helps with aeration of the soil, drainage, and root growth.

Before using topsoil make sure it is loose and in good condition. If it has been stored when wet, or for a long time, it might become compacted in the stockpile. Allow it to dry out and break it up before planting, seeding, or turfing.

Don't spread too much topsoil: Your soil survey will tell you the depths of the original topsoil layer. Try to stay close to that when re-applying the topsoil. More is not always better.

Don't plant into soil that is wet. Compacted or waterlogged soil has no air spaces in the structure. Plants will not survive and may need to be replanted at a later date. Planting is not always successful on newly laid soils. Monitor the plant health and correct any deficiencies as soon as they are detected.

### 3.1.2 Soils on brownfield and industrial sites

Many areas of land in the UK have been impacted by past industrial and other human activities, including former factories, mines, storage depots, steelworks, refineries, and landfills. Land at these sites could be contaminated by harmful substances such as oils and tars, heavy metals, asbestos, and chemicals.

Land contamination may also be caused by current operations or accidental releases of substances to the environment.

Understanding the condition of your land and preventing new land contamination are important. If you own land that is affected by contamination, or cause or allow land to be contaminated, you could be responsible for any harm or pollution it causes as well as the cost of cleaning it up.

CIRIA has produced free guides to identifying common causes of contamination. See **Reference 25**: CIRIA Site guides for contaminated soil.

#### Land contamination key points:

- Ensure you're aware of any planning conditions or requirements to investigate or remediate any land contamination.
- Before work starts, identify any potential contamination on site. Always check that a desk study, a site investigation and risk assessment has been carried out.
- Contact your local authority to find out if they are aware of any contamination issues at the site.

A specialist contamination assessment may have been undertaken; this is normally required at any brownfield site that is being redeveloped. This should help you identify the location of any contaminants and the measures required to manage them. If an assessment has not been previously carried out, you may need to arrange one.

- Seek expert advice on dealing with land contamination. if required, e.g. from a consultant with proven experience in the assessment and remediation of contaminated sites.
- Ensure you work to an agreed remediation strategy for dealing with contamination.
- Liaise with your local authority to discuss your proposed methods for dealing with contaminants.
- Ensure that you work to agreed methods to prevent pollution.
- Ensure that you have an incident/emergency plan for dealing with incidents on site such as a spillage.

**If you discover unexpected contamination on the site, stop works and seek advice from your environmental regulator or your local council.**



### Stockpiling contaminated material

If you have a stockpile that contains contaminated soil, it must be on an impermeable surface, in a bunded area at least 10m from any drain, ditch or watercourse. The contaminated soil should be covered to prevent contaminated run-off. It may be possible to re-use contaminated soil on site, either with or without treatment, subject to it being demonstrated as suitable for use. This will require an agreed remediation strategy.

Any contaminated run-off that does occur must be contained and either treated to an agreed standard or disposed of as waste, which may be classified as hazardous/special waste. If contaminated run-off contaminates clean ground, you will be responsible for the clean-up.

See **Reference 25** CIRIA: Site Guides for contaminated soil and SEPA: Land remediation and waste management.

### Disposing of contaminated material

Material contaminated with hazardous substances that you excavate on site and are not able to use will most likely be removed from the site. This material is considered to be waste, and you must remove it in accordance with the Duty of Care and hazardous/special waste regulations. Note that this could include any water that has been removed from excavations where the ground is contaminated. You may need to treat this water before disposal, or have it removed for treatment offsite.

One of the requirements of the duty of care is that you must provide a full and accurate description of any waste that you remove, for onwards transfer.

To satisfy this requirement, on your waste transfer note, you may have to supply laboratory-testing information. Consult the European Waste Catalogue and WM3 (**Reference 17**) to see if the type of waste that you are disposing of is listed as Hazardous Waste.

#### 3.1.3 Importing/exporting soil from a site.

At the planning stage it might be possible to design the site in such a way that all the top soil and subsoil that is moved on site can be reused in the final landscaping. See **Reference 25**: SEPA Guidance on Land Remediation and waste management.

If this is not the case, you might have to:

- bring in extra topsoil or subsoil.
- remove topsoil or subsoil; for use elsewhere, or for disposal.

#### Topsoil from outside your site

When bringing in soil from outside of your site you should consider the following:

- **Use a reputable supplier** - Check whether it is natural soil or manufactured soil, and make sure it is of good quality and is suitable for your site.
- **Ask for a soil analysis** - Check that the soil is suitable for the area and for the type of plants that you, or the landscaper, intend to use. Using just one type of soil might not be right for different areas that will have different types of plants, shrubs, or trees with different needs.
- **Don't accept undocumented loads of soil** - Don't accept soil that looks wet, has large clods, or is contaminated with any waste such as bricks, concrete, or plastic.
- **Consider manufacturing your own soil** - if there is a deficit on site and no suitable soil is available.

## Surplus soil for use off-site

### ***Soil from a greenfield site***

The Northern Ireland Environment Agency and the Scottish Environment Protection Agency have produced position statements that cover the use off site of excavated soils from Greenfield sites. If certain conditions are met, then this surplus soil can be reused without any waste controls.

See **Reference 24** Greenfield soils in construction.

### ***Soil from previously developed land***

If soil from a previously developed site is surplus to requirements, and you can show that it is suitable for use:

- **In Scotland**, a **Paragraph 9 or 19 exemption** can be used. Soil can be used for the treatment of land for agricultural or ecological benefit if it contains no hazardous substances and complies with any planning permission that might be required. It can also be used in construction or other relevant works.
- **In Northern Ireland**, a **Paragraph 9 exemption** can be used for soil if it is spread on agricultural land and can be shown to provide agricultural and ecological benefits. Soil and waste analysis and the crop requirement are used to determine the quantity. Soil can be spread on land not used for agriculture if it provides ecological benefit, i.e. other construction sites. A certificate outlining the ecological benefits is required.
- **In Wales a U10 Exemption** allows the spreading of soils on agricultural land to improve or maintain soil

See **Reference 23** - Paragraph 9 and 19 and U10 Exemptions

If you are stripping soil, or working on excavations, keep an eye open for anything unusual in the soil or in puddles This could be:

- An oily sheen on the water
- a smell of petrol/diesel
- an unusual colour.

These signs could indicate that there is contamination of the soil from hydrocarbons (diesel, petrol, or oils) or from other chemicals such as chromium.

You should also look out for the roots of plants that could be invasive non-native species (see next section)

### **3.1.4 Archaeology**

There may be conditions attached to the planning consent for your development that relate to archaeology. If you are a site owner or occupier, check your planning consent.

If you come across archaeological remains (possibly bones or remains of buildings):

- In **Northern Ireland**, any archaeological finds must be reported within 14 days to either the Northern Ireland Environment Agency (NIEA) Built Heritage Division, the Ulster Museum, or the Police Service of Northern Ireland. You will need to give details of where and how the object was found.
- In **Scotland** if you uncover archaeological features, you must stop work and contact the local planning authority and local council archaeologist immediately.

If you find human skeletal remains or evidence of a burial ground, stop work in that area. The main contractor or person in charge of the site should contact the Police immediately. The police will contact the Coroner in **Northern Ireland**, or in **Scotland**, the Procurator Fiscal and the local council archaeologist, if required.

### 3.1.5 Unexploded ordnance

In some areas there may be a risk of uncovering unexploded second world war bombs. CIRIA has produced a guide to unexploded ordnance. See **Reference 25** CIRIA Site guides for contaminated soil.

### 3.2 Invasive non-native species (INNS)

It is important that you can identify invasive non-native species (INNS) on your site. This will allow you to manage and deal with them in the most appropriate way.

An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health, and the way we live.

**Common examples include:**



Japanese Knotweed



Himalayan Balsam



Giant Hogweed



Asian Clam



Floating Pennywort

**Image 2 Examples of invasive Non-native species**, further descriptions can be found in **Section 3.2.2**

The regulations differ between countries, however in general:

- In **Wales**, and **Northern Ireland** it is an offence to plant or cause to grow in the wild certain listed invasive non-native species.
- In **Scotland**, it is an offence to plant or cause **any** non-native plant species to grow in the wild.

***You must avoid the introduction, movement and spread of invasive non-native species on and off your construction site.***

Identifying invasive non-native species on a site early lets you assess and cost options for destroying, disposing of, and managing them.

You should record any areas that are infested and restrict access. Maintain good site hygiene to ensure clothing, footwear, equipment and machinery do not spread invasive non-native species within or out of the site.

Don't add soil from an area with invasive non-native species to your stockpiles of soil. This will just spread the problem around your site.

There are different ways of dealing with invasive plants. Choose a method that is effective in preventing regrowth.

See **Reference 10** SEPA: Biosecurity and management of invasive non-native species for construction sites and controlled activities.

### 3.2.1. Use of pesticides

Everyone who uses plant protection products (pesticides) professionally must undertake training and obtain an approved certificate of competence in the use of pesticides. A list of the specified certificates can be found in **Reference 32**: Approved pesticide use certificates.

### 3.2.2 Common invasive non-native plant species

#### Japanese Knotweed

Japanese knotweed begins to grow in early spring and can grow in any type of soil, no matter how poor. It can grow as much as 20 centimetres per day and can reach a height of 1.5 metres by May and 3 metres by June. It does not produce viable seeds in the UK, but instead spreads through rhizome (underground root-like stem) fragments and cut stems.

Japanese knotweed:

- produces fleshy red tinged shoots when it first breaks through the ground.
- has large, heart or spade-shaped green leaves.
- has leaves arranged in a zig-zag pattern along the stem.
- has a hollow stem, like bamboo.
- can form dense clumps that can be several metres deep.
- produces clusters of cream flowers towards the end of July.
- dies back between September and November, leaving brown stems.
- rhizomes remain alive below ground all year round.

## Giant hogweed

You should take great care when working around giant hogweed. Contact with the plant, particularly the sap, can lead to severe blistering and scarring.

Giant hogweed closely resembles native cow parsley or hogweed. It normally grows large leaves in the first year, and in its second year grows a flower spike 3-5 metres high.

Giant hogweed:

- has a reddish-purple stem with fine spines that make it appear furry - like a stinging nettle.
- has hollow stems.
- has spotted leaf stalks.
- has leaves up to 1.5 metres wide.
- flowers in June and July.
- has flower heads that are usually 50 centimetres wide - each flower head is capable of producing 50,000 seeds.
- has seeds that can stay in the soil for several years before they develop.

## Himalayan Balsam

Himalayan balsam is often found on riverbanks, growing up to 2 metres in height. Each plant lasts for one year and dies at the end of the growing season.

Himalayan balsam:

- has reddish coloured stems.
- has dark green, lance-shaped leaves with jagged edges.
- flowers from June to October.
- has large, brightly coloured flowers that are usually in variable shades from purple to pale pink.
- can produce around 2,500 seeds per plant each year.
- has explosive seed pods that can throw seeds over 6 metres away from the plant.

### 3.2.3 Invasive non-native species and water

Invasive non-native species are often spread along watercourse, so take extra care when working in these areas. You can spot the Invasive non-native plant species during the growing season, and it is possible to identify the stems and remains of these plants at other times of the year. Although the plants may be dead, remember that seeds and roots will remain in the soil and can be spread on tyres or equipment.

Invasive non-native species in water, especially animals such as Zebra mussels or Asian clams, may not be easy to see. Extra care should be taken when working in water, even if there are no known records of aquatic invasive non-native species in the area.

Any pumps and associated pipework used should be:

- emptied, thoroughly cleaned using a disinfectant approved for aquatic use, rinse thoroughly without allowing the cleaning water to enter the main drainage system, and if possible dried before being taken to a site, and again before being removed from the site.
- positioned to avoid placing the inlet pipe amongst water plants.

- positioned with the inlet just below the water's surface, rather than on the bed of the water body.

A significant problem is invasive non-native species in watercourses or in SuDS schemes. Take care when introducing plants in these areas and avoid any that are listed as invasives.

SuDS schemes are often best left to allow natural colonisation from surrounding areas. If you do introduce plants, make sure you use native species. You should be particularly careful not to introduce soil or water containing invasive non-native plants such as New Zealand Pigmyweed.

You can use the GB Non-native Species Secretariat NNSS website to help identify any species that concerns you. See **Reference 10** Non-native species.

The GB Non-native Species Secretariat website has the latest Invasive non-native species good practice information including:

- a short e-learning training module to provide a basic understanding of INNS, the risks and what to do.
- more detailed biosecurity advice.
- further "Be Plant Wise" and "Check, Clean, Dry" information.

You should also make yourself familiar with the GB NNSS advice on:

- high priority alert species.
- how to report any suspected INNS sightings.

### 3.3 Biodiversity

#### 3.3.1 Protected sites and priority habitats

Many areas with distinctive plants, animals, habitats, geology, or landforms are protected at the international, national, and local level. (See the statutory designations below) Some habitats have been identified as needing priority conservation action. Some animals, such as badgers, have specific legislation to protect them.

If you own or work at a site that is in or next to a protected area, priority habitat, or location used by a protected species you're likely to face tighter restrictions on what activities and developments you can carry out at the site.

You may need to:

- obtain permission from the relevant organisation for your site (NIEA, NatureScot, NRW).
- carry out a survey.
- assess the potential impact of your business on the natural environment and biodiversity.
- explain how you will avoid or mitigate any potentially adverse impacts on the protected area.

## Common statutory designations

Statutory Designations		
Local	National	International
Local Nature Reserve	National Nature Reserves  Areas of Special Scientific Interest (ASSI)  Site of Special Scientific Interest (SSSI)	Special Area of Conservation (SAC)  Special Protection Areas Ramsar Sites
Non-statutory Designations		
Local Wildlife or Geological Sites  County Wildlife Sites  Sites of Importance for Nature Conservation  Sites of Biological Interest  Ancient Woodland		

**Table 3.1: Local, National and International designated sites**

You can check whether your land is a local site by contacting your local council ecology team or biodiversity information centre, or the Ulster Wildlife Trust or Scottish Wildlife Trust.

### 3.3.2 Priority species or habitats

A number of species of animals and plants found in the wild are protected.

You may be committing an offence if you capture, kill, injure, or disturb any protected animal or if you pick, collect, cut, uproot, or destroy any protected plant species.

If your business needs to undertake an activity which is likely to disturb a protected species, such as development of a site, you must apply for a licence to either:

- the Northern Ireland Environment Agency (NIEA).
- NatureScot.
- Natural Resources Wales (NRW).

Protected species include:

- mammals such as seals, otters, badgers, all bats, pine martens, red squirrels, water voles and harvest mice,
- all species of naturally occurring birds in the wild.
- amphibians and reptiles such as the common newt and some lizards, slow-worm, great crested newt, grass snake, adder, common toad, natterjack toad.
- invertebrates including moths, butterflies, beetles, dragonflies, and snails.
- plants including many mosses, liverworts, lichen, ferns and flowering plants like lady's slipper and slender naiad.
- a range of fungi.

Identifying whether these protected species are present on your site can be difficult, and you may need to get advice from the NIEA, NRW or from NatureScot.

You might be able to help maintain or enhance certain protected species by planning your work to improve habitats. For example, you could include nature friendly planting, or swift boxes or bat boxes in buildings.

## Surveys

It is important to schedule any necessary surveys to ensure they are carried out at the appropriate time of year. See **Appendix C** The NetRegs species survey calendar for information on the times of year when surveys can be carried out.

There may be a biological or environmental record centre with information on the species or habitats present in your area. This information is not a substitute for your own surveys but will help to give an indication of what species are found locally, and what your surveyor should look out for.

More information for **Scotland** can be found on the [NatureScot website](#).

There are maps showing the distribution of Ireland's wildlife available on the [Biodiversity.ie website](#). In **Wales**, the Wales Biodiversity Partnership has information on all aspects of wildlife and natural environments.

You should carry out all necessary surveys to make sure you know what species are present. Forward planning is important as some surveys can only be undertaken at particular times of year – See **Appendix C**. This could cause delays to your plans if works cannot proceed until a survey has been completed. Surveys should be carried out by trained individuals who have relevant experience.

### 3.3.3 Tree preservation orders

Tree Preservation Orders (TPO) can be given to an individual tree, groups of trees or woodlands. TPOs are used to protect trees or woodlands if their removal would have a significant detrimental impact on the environment and its enjoyment by the public.

Where a TPO has been made you will be committing an offence if you cut down or carry out any work on the trees without permission. TPOs can require the replanting of trees or woodland which have been felled in the course of your operations, or which have been felled unlawfully.

You should contact your local planning authority (Local Council) to check whether there are any TPOs in force where you are working.

If your site is in a conservation area the trees will automatically be protected. Check with your Local Council to find out if your site is in a conservation area.

## 3.4 Public rights of way and bridleways

For works that may affect footpaths, cycleways, or bridleways, either temporarily or permanently, you will need consent from the Local Council.



### 3.5 Placemaking

Placemaking is based on the place principle which states that –

***“All those responsible for providing services and looking after assets in a place need to work and plan together, and with local communities, to improve the lives of people, support inclusive growth and create more successful places.”***

Placemaking is a joined-up and collaborative approach to designing and developing the built environment and the natural resources around it. It involves public and private sectors partners, local enterprises and local people, and considers the physical, social and economic elements that are essential for successful places.

Place based approaches provide a practical mechanism to ensure that:

- changes made in a place are relevant to that place.
- change benefits all the people in a place.

#### 3.5.1 Placemaking and the environment

Place making should include:

- A shift to zero carbon.
- Blue/green infrastructure provision and collaborative working.
- Resilience and adaptation to future climate change including flooding.
- Location, siting, design and use of materials that support a circular economy approach within a place.

The range of essential services that nature provides help make a successful place. Using blue (water) and green (land) infrastructure enables places to become more sustainable and resilient to the effects of climate change, as well as being safer, more pleasant places for people to be.

#### 3.5.2 Blue Green Infrastructure and collaborative working

Blue/green infrastructure is a strategically planned network of natural and semi-natural elements, that include both blue (water) and green (land) features. They are designed and managed to deliver a wide range of ecosystem services such as:

- water purification.
- air quality improvements.
- space for recreation.
- climate mitigation and adaptation.

If you include these considerations in your developments, whatever the size, you will appropriately enhance wildlife and biodiversity, as well as help to build more sustainable communities and provide more desirable places for people to live; for example, by including a well thought out SuDS, or wildlife corridors such as hedgerows or green space along SuDS features that connect woodland or other open greenspaces.

You might also connect parts of a development using footpaths or cycle tracks instead of roads, to encourage more sustainable means of transport, and bring important health and wellbeing benefits. Connections to wider initiatives lead to the creation of enhanced Places – to the benefit of all.

More information and resources: See **Reference 11** [Our Place | Our Place](#).

## Section 4: Storing and using fuels

### 4.1 Oil/fuel Storage and refuelling

#### 4.1.1 Location of your oil/fuel stores

Think about environmental and fire protection, safe delivery access, maintenance, and security requirements before deciding where to put any permanent or temporary oil storage facilities.

Locate fuel stores in dedicated areas specifically designed and constructed to be safe and secure.

Avoid storing oil/fuel in high-risk locations.

Don't store oil:

- where there is risk of damage by impact or collision e.g. from site traffic.
- within 50 metres of a spring, well or borehole.
- within 10 metres of a watercourse, ditch, or drainage channel.
- where spilt oil could run over hard ground, or enter open drains, loose fitting manhole covers or soak into unmade ground where it could pollute groundwater.
- where a tank vent pipe outlet can't be seen from its filling point.
- on roofs, as spilt oil can run down guttering which is connected to surface water systems.

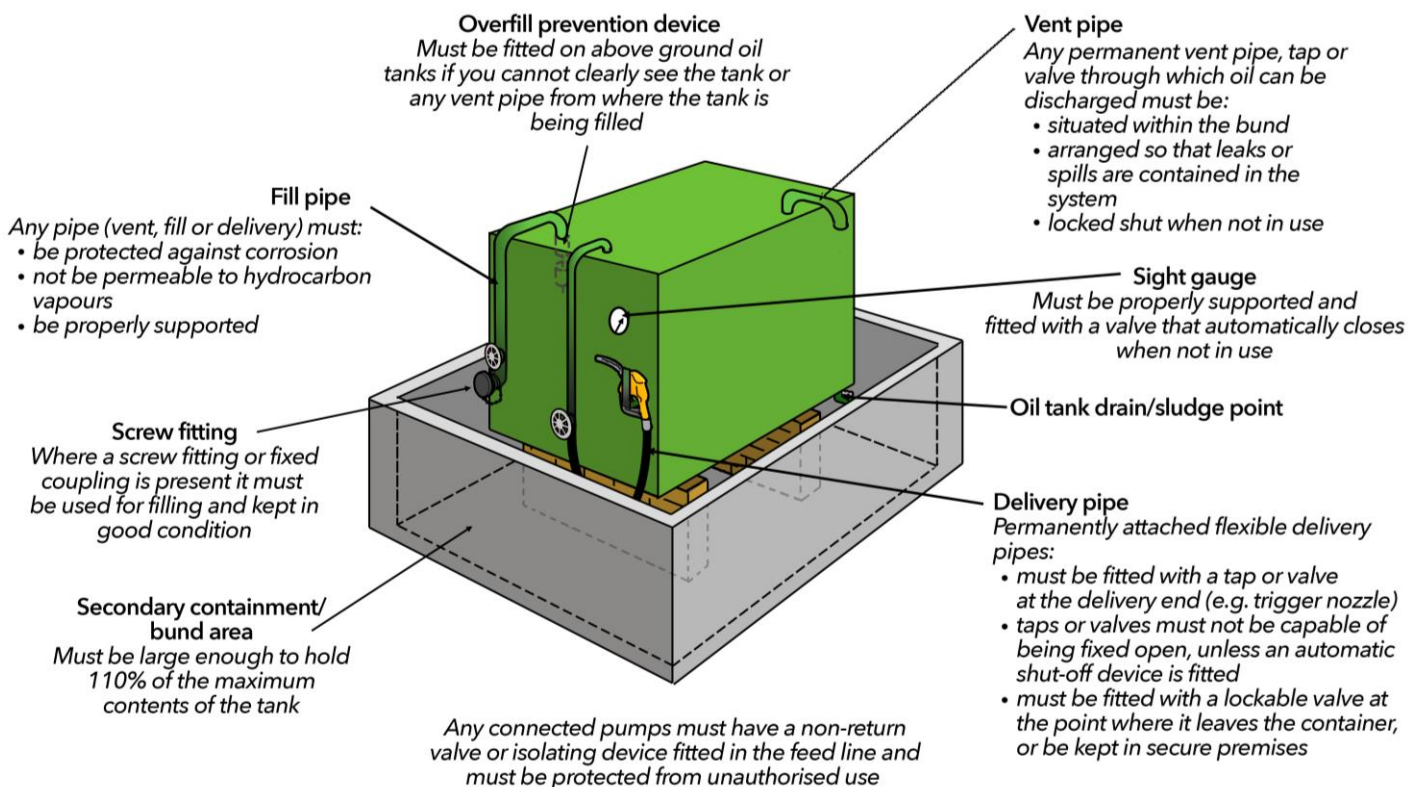
Oil spilt in any of the above locations will pollute watercourses and/or groundwater. If you can't avoid these locations, check with your environmental regulator as you may require additional measures to prevent pollution, e.g. tank overfill prevention device.

Avoid storing or using oil in areas at risk from flooding. Containers may float in a flood, causing oil or fuel to spill and pipelines to break.

See **Reference 13** GPP2 Above Ground Oil Storage Tanks for more information.

You must take care when installing fixed position oil tanks that remain in one place for the duration of a scheme. The weight and volume of oil or fuel stored means they should be installed on a purpose-built, impermeable hard base by a professionally competent person.

#### 4.1.2 Oil/fuel storage requirements



**Figure 7. Oil or fuel storage requirements – Gravity fed tank**

Oil/fuel is supplied and stored in different types of container. Find out what legal requirements apply to the containers you intend to use. In **Northern Ireland** the Oil storage regulations apply if containers are above 200 litres, in **Scotland** they apply to all oil storage containers.

In **Northern Ireland** you must comply with the requirements of the Control of Pollution (Oil Storage) Regulations (NI) 2010.

In **Scotland** you must comply with the Controlled Activities Regulations (CAR).

See **Reference 13** GPP2 Above Ground Oil Storage Tanks for more information.

Some tanks and bowsers come as complete units with integral secondary containment which reduces the risk of oil spills. Commercially available bunded pallets and stores are available for drums and Intermediate Bulk Containers (IBC).

In all cases containment must comply with the regulations, with a capacity of 110% of the volume of the container for single drums or IBCs. If you store oil in drums, on a drum bund or drip tray, the tray must be able to contain at least 25% of the total drum volume, See **Figure 7**.

For more information see GPP 2 Above Ground Oil Storage **Reference 13**) and GPP 26. Safe Storage of Drums and Intermediate Bulk Containers (IBCs): – (**Reference 14**).

Use storage containers that are designed and manufactured for the type of oil you're storing. Storage manufacturers and suppliers can help you choose an appropriate product.

If you're hiring containers, make sure the supplier knows your how you will use them and your legal requirements; specify good quality containers and systems with good pollution prevention and security features.

Use enclosed secondary containment systems and, if practical, cover open oil storage areas to prevent rainwater collecting. This water, which may be contaminated with oil, must be removed frequently from open bunds and trays to maintain the emergency spillage volume.

You must have Oily wastewater disposed of legally by a registered waste carrier. See **Waste management**.

#### 4.1.3 Using and handling oils on site

- It is important to have procedures for safe deliveries and handling oils and containers on site. Make sure everyone knows what to do for pollution prevention and for health and safety. Make sure your containers and storage comply with the oil storage regulations. (see **Section 4.1.2**)
- Oil/fuel deliveries should always be supervised.
- Don't over order; always make sure there's enough room in a tank or oil storage area to receive the intended delivery. See **Reference 13** GPP 2 Above Ground Storage Tanks for more information about safe deliveries to tanks.
- Drums, cans, and Intermediate Bulk Containers (IBCs) should be placed into the secure oil storage area immediately on delivery and after they've been used on site. Never leave oil containers in unsecured or high-risk locations.

#### Dispensing pumps for refuelling plant and site vehicles

Use proper fuel dispensing pumps for refuelling plant and site vehicles. This reduces the chance of oil spills because:

- fuel tanks can be sited at ground level and installed on a properly designed and constructed base, making tank filling, inspection, maintenance and dispensing easier and safer.
- it's more secure; dispensing pumps (electrical or mechanical) can be isolated from unauthorised use and interference when not in use.
- there's no flexible pipe work connected directly to the tank which is vulnerable to damage by thieves (to steal oil), vandals or accidents.

If using gravity to dispense oil/fuel you should:

- support and install tanks properly.
- design secondary containment for the tank and its ancillary equipment to take into account oil 'jetting' from the tank if there's an overfill, or damage to tank or pipe work. This must comply with the requirements of the Regulations covering Oil Storage. (See **Section 4.1.2**).
- use a top draw-off, with anti-syphon protection.
- ensure flexible delivery pipe work, nozzles and valve security locks comply with oil storage regulations i.e. kept in a lockable cabinet with a drip tray or within the secondary containment. See **Figure 7**.
- protect operators working at height (to fill, inspect, maintain, and draw off) by providing suitable ladders, railings and other health and safety equipment.

Refuelling and dispensing should:

- be carried out carefully in a designated area with an impermeable surface sited away from any watercourses, ditches, or drains.
- always be supervised and never left unattended.
- be by pump, where possible, (see above) with automatic cut-off trigger nozzles, which can't be left propped open.

If refuelling or dispensing must be done away from a designated area, for example when using mobile bowsers, you should:

- complete refuelling or dispensing over a drip tray, absorbent plant nappy or plant matt, or other secondary containment solution; never allow oil to spill onto the ground.
- use funnels or other appropriate filling equipment to avoid spills.
- return all oil containers (including mobile bowsers), funnels, couplings, pipes, taps and cloths to the designated storage area after use.
- deal with any spilt oil and drips in the secondary container immediately using proprietary spill clean-up material.
- store and dispose of waste oil and contaminated spill clean-up materials legally and without causing further pollution (See **Section 4.4** Waste management); never empty waste oil or oily wastes onto the ground or burn it on site.

Storage of small amounts of fuel or oil or flammable liquids

- if small amounts of fuel or other flammable liquids in containers are to be stored on site, for example for refuelling or overnight storage, they must be stored safely in a flame proof storage box.

#### 4.1.4 Inspection and maintenance

- Inspect oil containers, secondary containers, and storage areas frequently to check for signs of damage, corrosion, bulging, leaks or unauthorised use and interference. Frequency will depend on the amount of oil on site, type of storage container and storage area. See GPP 2 (**Reference 13**) and GPP 26 (**Reference 14**) for more information about oil container maintenance.
- Carry out required maintenance, get any defects or faults repaired immediately and keep records.
- Check oil levels within tanks and bunds frequently, either visually or by contents measuring equipment. Keep accurate records of oil usage patterns. Investigate any sudden loss of oil from tanks or build up in bunds, either could indicate a leak.
- Deal with any oil in secondary containers immediately. Never allow oil to remain; it reduces the emergency containment volume. Dispose of this oily waste and water legally without causing pollution. See **Section 5** Waste management.

#### 4.1.5 Security

Oil and fuel is valuable; take all necessary security measures to prevent theft, or unauthorised use, by providing suitable locks, lockable containers and/or lockable valves where necessary. Make sure the locks are used when oil storage facilities are not in use. This may be a legal requirement for some oil storage containers. Tank installation and fuel oil delivery companies may be able to advise you.

#### 4.1.6 Generators

Oil storage regulations only apply to generators and associated oil containers where the oil is being stored, rather than used, and where no other exemptions apply, such as the oil being stored within a building. If possible, use commercially available generators with built in secondary containment for the oil storage and day tank.

In **Scotland** all oil storage containers, including those less than 200 litres must be of sufficient strength and structural integrity, and must have been installed to ensure that they are unlikely to burst or leak during ordinary use.

In **Northern Ireland** and **Wales**, Oil storage regulations **don't apply to** smaller 'day job' generators that are taken to and from a job on a daily basis, and:

- have a day tank capacity of 200 litres or less.
- have all oil used during an operating day.
- are stored with an empty day tank when not in use.

Provide drip trays, or absorbent plant mats/nappies, for the generator and associated pipework to catch any spills or leaks for these generators.

Oil storage rules **do apply in all countries to:**

Generators that:

- are taken to and from a job on a daily basis or are in constant use, and
- have a day tank with a capacity of more than 200 litres, or
- have more than 200 litres left at the end of a day and therefore stored in the tank.

Stand-by generators not in continual use:

- with a day tank of greater than 200 litres capacity, and
- that are storing oil for later use.

Day tanks for these larger capacity generators and standby generators require 110% secondary containment.

Oil storage tanks that:

- supply a generator in full time or standby use,
- are used to fill up other mobile generator day tanks, and
- hold more than 200 litres.

Pipework delivering oil from a tank to generator is particularly vulnerable; you should provide secondary containment for the whole installation – storage tank and generator.

#### 4.2 Dealing with spills – Incident response

Although careful planning and preparation reduces the risks of a pollution incident, accidents can still happen.

##### **Be prepared.**

If site workers know how to deal with an incident, and can use the necessary equipment, they can help prevent the pollution spreading and minimise damage to the environment.

There's guidance available to help you create a pollution incident response plan for your site: see **Reference 15:** GPP 21 Pollution Incident Response Planning.

## Pollution prevention

- **Identify** where pollution incidents could happen on site.
- **Develop a pollution incident response plan** for your site. This is a short document that outlines the actions you must take to minimise the pollution caused by an incident. Each site needs its own plan as it has its own specific requirements, so don't simply copy a plan from a previous site. See **Section 7: Pollution incident response plans**.
- **Nominate an individual** to have responsibility for the pollution incident response plan; this person will be the site contact for incidents, the 'responsible person'.
- **Ensure** a responsible person is onsite at all times, and is available when oil is being delivered, transferred or used.

## Section 5: Waste management

### 5.1 Duty of Care

Poor waste management is a common cause of pollution at construction and demolition sites; for example, not complying with 'duty of care' leading to illegal disposal of waste. This can result in fly tipping or illegal disposal such as burning of waste on site, causing air pollution.

Use the available guidance to help you find the legislation you need to comply with, and which must be considered for your site when managing waste.

See **Reference 17** Managing Waste.

Everyone on site must comply with the waste 'duty of care'; this means you must:

- store your waste safely and securely on site e.g. prevent wind-blown materials such as plastics leaving your site; keep skips and bins covered.
- segregate waste for recycling, with separate bins or skips for different materials. All businesses must present glass, metal, plastic, paper, and card (including cardboard) for separate collection. Segregation of other materials will allow recycling and lower waste costs.
- prevent any liquid wastes leaching from bins or skips – this includes dry wastes that may become wet for example from rain. Check your waste storage has no holes or damage.
- make sure any waste contractor removing waste from your site is authorised, and check where your waste will be taken - See **Reference 17** Waste Management.
- for each load of waste removed from the site, complete accurate waste transfer notes, or consignment notes for hazardous waste.
- prevent hazardous wastes being mixed with other hazardous wastes or with non-hazardous wastes.
- keep all waste transfer notes and consignment notes for 2 and 3 years respectively.

You can improve waste management and reduce costs by:

- Using Site Waste Management Plans (SWMP), even when not a legal requirement. These will help you comply with most waste legislation and reduce the amount of waste you generate. They will also help save you money as well as reduce pollution risks.
- Using certified recycled materials where possible and minimising the waste you produce.
- Understanding, managing and where necessary treating contaminated soils & groundwater to allow re-use on site and avoid off-site disposal.
- Considering off-site construction where possible. This will reduce waste onsite.
- Making sure materials aren't over-ordered to avoid waste in the first place.
- Handling materials carefully to prevent damage.
- Locking waste storage areas, bins, and skips.
- Performing checks on end disposal of waste to satisfy yourself that your contractors are complying with legislation. Record your findings.

See **Reference 17** Waste management for the Zero Waste Scotland guide: Improving Waste Management on Construction Sites and WRAP: Net Waste Tool.



## 5.2 Site waste management plans

A Site Waste Management Plan (SWMP) could help you to reduce the amount of waste you produce and will help you manage your waste more effectively.

Each project should have one SWMP.

A SWMP is a live document. It must be updated through the course of the project.

Because it is produced at the very beginning of a project, the designer can consider ways that waste can be reduced, and site-gained materials can be reused or recycled as part of the project. Identifying waste materials at an early stage that cannot be reused on that project will make it easier to find other alternative uses for them.

At the end of the project, you must review the plan and record the reasons for any differences between the plan and what actually happened.

You must comply with the duty of care for waste. Because you will need to record all waste movements in one document, having a SWMP will help you to ensure you comply with the duty of care.

If you are working as a sub-contractor, check your contract for requirements on:

- purchasing strategies or methods of work aimed at reducing waste.
- the on-site reuse or recycling of site-gained materials.
- the disposal of waste.
- what information you need to report to the principal contractor or client, and when.

For more information see **Reference 26** Site Waste Management Plans.

## 5.3 Asbestos

Asbestos-containing materials were used until 1999 for a wide range of construction purposes in new and refurbished buildings.

If you are a maintenance, demolition or construction **contractor**, the owner or occupier of any building that you work on must supply you with detailed information on the location, type and condition of asbestos-containing materials within the structure of the building that may be hazardous to you or your employees' health or welfare.

If you work on the fabric of a building and are at risk of disturbing asbestos, you must make sure that you and your employees are able to identify asbestos in case you find it unexpectedly. You must ensure that any worker who is likely to disturb asbestos materials as part of their work activities has received appropriate asbestos awareness training.

Asbestos can also be present in soils as a result of historic activities or poorly managed demolitions. CL:AIRE provide guidance on managing soils containing asbestos. See **Reference 27** Asbestos.

Work with asbestos may require a licence from the Health and Safety Executive (HSE). For more information, See **Reference 27** Asbestos.

Waste containing more than 0.1 per cent asbestos is classed as **hazardous/special** waste. You must deal with this waste as hazardous/special waste.

Any waste that contains asbestos, or is contaminated with asbestos, must be double-bagged and placed in a covered, locked skip. This includes overalls, over-shoes, sampling wastes and respiratory protection equipment that have come into contact with asbestos.

See **Reference 27** Asbestos.

#### 5.4 Storing waste

If you store your own waste you must store it securely and get it removed regularly from your site.

If you store your own waste for more than 12 months, you must have a waste management licence.

Check that your licence allows you to store your type of waste.

Make sure waste materials cannot blow away or escape. Tie your waste down, cover and protect it from wind and rain.

Prevent run-off from your waste storage area entering surface waters or drains by storing it under cover on an impermeable surface with a bund. A bund is a secondary containment area that holds liquids if the main containers leak or break.

Make sure your site is secure. Check locks, gates and perimeter fences regularly. You can still be prosecuted even if vandals cause pollution on your site.

You must not:

- bury waste materials.
- burn waste materials unless licensed to do so.
- store and transport materials **near fire sources**, e.g. high temperature machinery or machinery producing sparks, such as angle grinders.
- mix hazardous/special waste with any other materials.

#### 5.5 Waste storage exemptions

You can apply for exemptions to store certain types of waste for certain purposes. This means you can register with your environmental regulator and avoid having to apply for a full waste management licence. The amount you can store depends on the exemption. The purposes include:

- composting.
- recycling and reuse of waste materials.
- using the waste as a construction material.
- using the waste material as a fuel.

In most cases you must register any exempt waste activity or operation you carry out. You must always comply with the conditions of the exemption. There may be a charge for registering your exemptions.

For further information on exemptions, see **Reference 28** Waste exemptions.

#### 5.6 Transporting waste

You must register with your environmental regulator as a **waste carrier** if you transport: construction and demolition waste produced by your own business.

### 5.6.1 Waste transfer notes

You must complete a waste transfer note (WTN) for every load of waste you pass on. You must keep copies of all your WTNs for at least **two years**.

### 5.6.2 Transporting hazardous waste

You must check if waste is hazardous/special waste before you transport it.

You must complete a **consignment note** whenever you or anyone else moves or transfers hazardous/special waste. Copies of consignment notes must be kept for at least three years.

If you carry your own hazardous/special demolition and construction waste, you must be registered as a waste carrier.

### 5.6.3 Preventing pollution when transporting and storing waste

You must:

- store and transport waste in suitable, covered containers such as drums, skips or cages.
- label containers correctly with the type of materials stored in them.
- separate different materials into different containers.
- ensure materials cannot leak into the ground, watercourses (streams, rivers or groundwater) or surface drains.

Only store and transfer waste materials on waterproof, contained surfaces where spills cannot escape.

Bund containment areas. This involves building a secondary barrier around the main containment area to hold liquid waste if the main containers, for example drums, leak or break.

**Reference 13:** GPP2 Above ground oil storage tanks contains guidance on bunding and storage.

## 5.7 Contaminated Soils and Groundwater

Some soils on contaminated sites may not be suitable for use at the proposed development. To avoid generating waste contaminated soils appropriate remediation will need to be agreed with the local authority. This could include retaining soils on site and capping garden or landscaped areas, or active remediation of soils on site to make them suitable for use. Contaminated groundwater may also require remediation.

In **Scotland**, soils that are suitable for use in the context of an agreed remediation plan are not regulated as waste if they are excavated and re-used within the same site. Soil and groundwater remediation carried out at the site of origin, that includes any form of treatment to make the site suitable for use, must be carried out by a licenced waste management contractor.

## 5.8 Demolition waste

### 5.8.1 Tanks and underground structures

Before you begin demolition work, identify the location and condition of any storage tanks and pipes that need to be removed.

You must empty tanks and pipelines that contain polluting materials before you remove them. Make sure that the contents are properly disposed of.

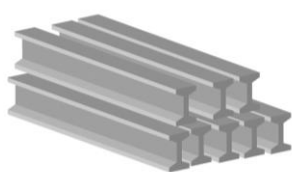
You must identify any liquids left on site, for example, in barrels or containers, or liquids from decommissioning storage tanks and pipes and dispose of them at an appropriately licensed facility such as a treatment plant.

Any liquid wastes you store on site should be clearly labelled and contained within a bunded area. Where underground tanks are present there is a high potential for the surrounding soils to be contaminated. This should be covered by your contaminated land site investigation.

## 5.9 Recycling

Materials for recycling are likely to be classed as waste until they are fully recovered. As such, they will be subject to waste management and the duty of care regulations. If in any doubt, seek advice from your environmental regulator.

These materials include:



Scrap metal



Broken out concrete



Timber



Bricks



Tiles

### Recycled aggregates

The NIEA in association with the EA and WRAP have revised the end of waste Quality Protocol (October 2013) for the production of aggregates from inert waste. It reflects the latest approved industry standards, including factory production control, and incorporates other improvements and clarifications to make it easier for producers and users to ensure full compliance with the end of waste criteria.

SEPA has produced guidance on the use of recycled aggregates in construction work. See **Reference 29** Recycled aggregates.

### Recycling of other construction materials

If your business recycles materials, both on or off your site, you must meet certain regulations to ensure you recycle safely and legally.

Materials for recycling, either on your premises or elsewhere, are likely to be waste and will be subject to the requirements of the waste management and the duty of care regimes.

Materials for recycling include:

- broken out concrete.
- scrap metal.
- copper cable.

- tyres.
- plasterboard.
- timber.
- paper.

Your waste haulage contractor will be able to give you recycling options in your area. See **Reference 30** Find recycling sites.

## Section 6 Working with cement, hazardous materials and recyclates

### 6.1 Working with cement, concrete, or grout

Cement, concrete, and grouts are highly alkaline and corrosive and can cause serious pollution to the ground and watercourses. Water wildlife, such as invertebrates and fish, are sensitive to changes in pH (acid/alkaline) levels. Spills of oil in water are easy to see, changes to pH are not, so pollution can occur for some time before the extent of damage to wildlife is noticed.

Whether storing, making, mixing, or using, take care with all works involving cement, concrete, and grout. Excess cement products (mortar and concrete) should be allowed to harden, and you can use them as general fill on the site as required.

You must have suitable arrangements in place to prevent pollution from the wash-out of concrete mixing plant, ready mix concrete lorries, and tool and equipment washings.

Never allow treated or untreated washings or wastes to enter any drain, surface water or onto the ground without authorisation from your environmental regulator and/or from the water company.

Store wash waters to let them settle out. You can install re-circulation systems to reuse the water (e.g. for mixing and washing) to minimise the risk of pollution and reduce water use.

The size of your site and amount of materials you use affects your choice of facilities. These range from sumps, specifically manufactured equipment, to a simple metal container. A lined and covered skip may be suitable for smaller sites providing it's in good condition (i.e. watertight) and solids are frequently reused, recycled or removed and disposed of legally.

Collect wash waters that can't be reused:

- to discharge to the foul sewer. Note: you must have prior permission from the local sewerage provider for this (See **Section 2.6** for more details)
- for authorised disposal off-site by a registered waste carrier. See **Section 4.4: Waste Management**.

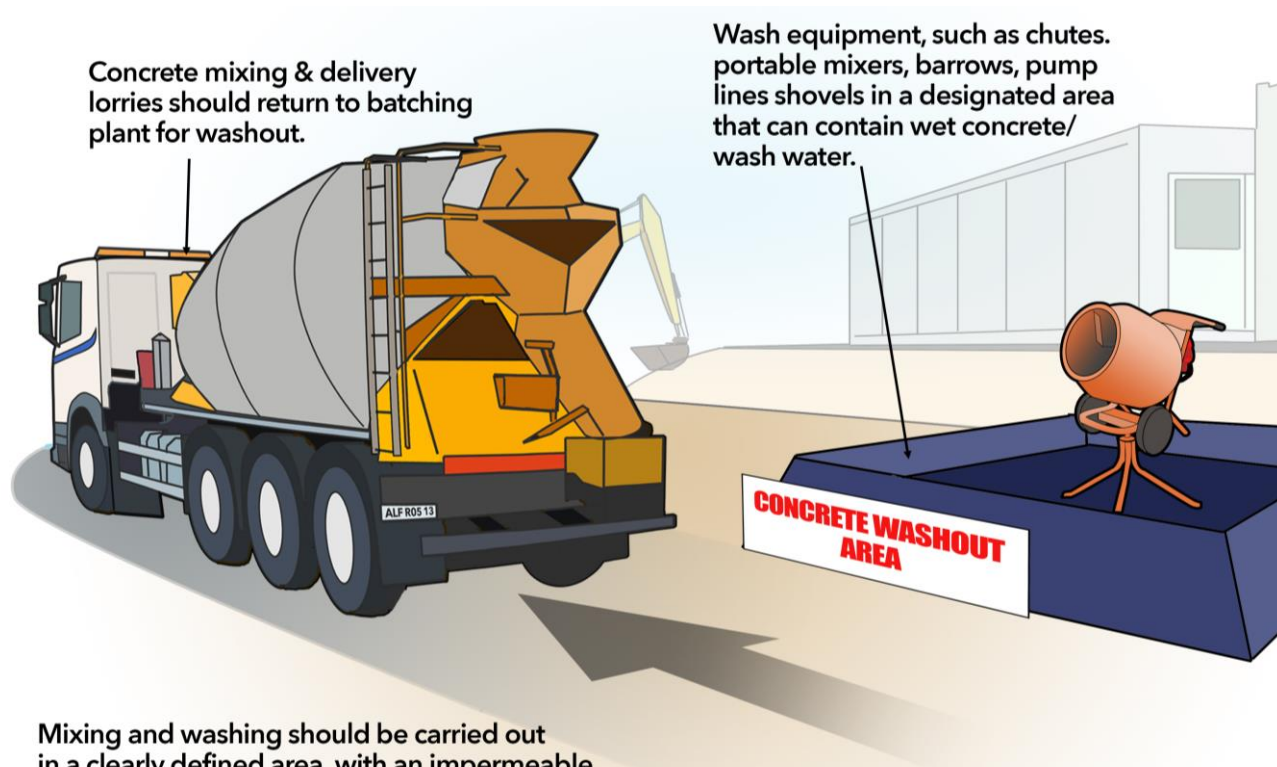
It may be possible to reuse the solids that settle out during storage otherwise they will also need to be disposed of legally. Contact your environmental regulator for advice.

### 6.2 Working with concrete in water

Some specialised projects will require concrete to be used in watercourses. Designs for these projects should specify suitable concrete mixes that minimise pollution. If working on a site in or close to water, you must ensure that you use the correct type of concrete, and that Method Statements are prepared and followed.

If you plan to carry out any work in, over or under a watercourse, see **Reference 18** GPP 5: Works in or Near Water.

### 6.3 Using concrete and cement on site



Mixing and washing should be carried out in a clearly defined area, with an impermeable base, at least 10 metres from a watercourse or surface water drain.

**Figure 8. Concrete mixing and washing area requirements**

You should carry out mixing and washing activities:

- in a clearly defined area, with an impermeable base.
- at least ten metres away from a watercourse or surface water drain, to reduce the risk of run-off entering a watercourse.

You should wash out equipment, such as chutes, portable mixers, barrows, pump lines, shovels, in a designated area that has been designed to contain wet concrete/wash water. You may be able to recycle/re-use within the wash down area or concrete batching process. See **Section 2.5.3** Recycle concrete wash down water.

Water that has been in contact with cement is alkaline in nature. It is not good practice to dispose of this liquid on site.

If disposal on site is necessary, then you will require an authorisation from your environmental regulator. This would be classed as a discharge of effluent either to water or to groundwater. You would have to treat the effluent prior to discharge, which may include pH adjustment, CO<sub>2</sub> aeration etc.

Alternatively, wash-water can be sent off-site to a licenced facility for treatment and/or disposal, in accordance with the Duty of Care for Waste. See **Section 5.1** Duty of Care.

Concrete mixing and delivery lorries should return to the batching plant for washout.

### Surplus concrete and cement.

- Use surplus dry concrete, cement, and grout elsewhere on site if possible, or as inert rubble. If not possible, you will need to dispose of it off-site using a registered waste carrier.
- Send excess concrete back to the batching plant. With design concrete this may not be possible, so you should build a designated area to allow the concrete to cure without polluting the ground or watercourses.

You should also:

- make sure all cement bags are sealed after use, stored appropriately to prevent leaks or dust (preferably in a waterproof building or storage container).
- dispose of empty cement bags legally off-site, never burn or bury them.
- provide a contained wash-off area for tools.
- consider the types of cement, concrete, and grout that you order – e.g. use quick setting products in structures in or near watercourses. (See **Reference 18** GPP5).
- don't over-order materials; you'll either have to store them or pay to have them taken away.
- consider timing of deliveries; you're more likely to have waste cement and concrete if it's delivered at the wrong time.

### 6.4 Hazardous materials and chemicals

All chemicals and hazardous substances or materials you store and use such as oils, cleaning products, solvents and pesticides could cause pollution. They could spill onto land, enter surface waters or groundwater, or be released into the air.

If you cause or allow pollution to occur, you may be prosecuted and fined. Your business could suffer from lost contracts, downtime and have to pay clean-up costs and increased insurance premiums.

Make sure you receive the 'Safety Data Sheet (SDS)' with chemicals and hazardous materials from the supplier, or manufacturer. If you receive a chemical without an SDS, contact your supplier to find out whether they have to provide one.

Follow the instructions carefully as they tell you how to store, use and dispose of chemicals and hazardous materials safely.

Plan deliveries to your site, and make sure you understand the regulations for oil storage.

Store all chemicals and hazardous substances:

- away from watercourses and drains in a contained, bunded area on an impermeable surface.
- away from areas where there is risk of damage from impact or collision e.g. site traffic.

You should also:

- Make sure the storage area is secure.
- Label all the materials and keep them in sealed containers when not in use.
- Inspect the storage area regularly, make sure all containers are fit for purpose and are free from damage or leaks.
- Only take out the chemicals and hazardous substances needed for each job.
- Return any unused substances to storage facilities at the end of the day.

- Avoid mixing used substances with unused in the same container.
- Dispose of any damaged/old containers in line with your duty of care requirements, these may be classed as hazardous/special waste.

You should develop a Pollution Incident Response Plan and always keep it accessible. Make sure staff understand how to deal with pollution incidents through training and toolbox talks. See **Section 7** on Pollution Incident Response Plans.

Only order what you need for a job and try to reduce quantities of chemicals and hazardous substances on site. There are health and safety and financial benefits associated with this. You might be able to replace hazardous products with non-hazardous alternatives.

See **Reference 19** Health and Safety Executive (HSE): Controlling hazardous substances on construction sites.

## 6.5 Recycled aggregates

The use of recycled aggregates in construction is growing as more sustainable practices are developed for the construction sector.

Recycled aggregates go through a quality assurance procedure which assures that the products conform to the specifications required for various uses.

### Northern Ireland

The NIEA in association with the EA and WRAP has revised the end of waste Quality Protocol (October 2013) for the production of aggregates from inert waste. It reflects the latest approved industry standards, including factory production control, and incorporates other improvements and clarifications to make it easier for producers and users to ensure full compliance with the end of waste criteria.

See the guidance from GOV.UK on the use of recycled aggregates in **Reference 20**: The Quality Protocol for Aggregates from Inert Waste

### Scotland

Zero Waste Scotland have guidance and resources that will help to deliver a more circular approach in the construction sector.

This includes information on material management & building material reuse, a resource library, and you can contact their Advice and Support Service See **Reference 20**: Zero Waste Scotland Circular construction.

SEPA has produced information about the production of aggregates from recycled inert waste. See **Reference 20** SEPA: Aggregates from Inert Waste.

#### 6.5.1 Recycling aggregates on site

Site-gained concrete, bricks, tiles, or other materials can be crushed and reused as sub-base or fill. You should consider broken-out concrete to be waste if you discard it, intend to discard it, or are required to discard it for any reason. As such it is subject to the duty of care and waste management licensing.

If you transport concrete and other materials off your site to be crushed, make sure that you have the appropriate waste transfer documentation.



The Quarry Products Association (QPA) and SEPA have produced guidance on the use of recycled road planings. See **Reference 20**.

If you are a construction or demolition business and you are carrying your own waste, you will need to register as a waste carrier with your environmental regulator.

Treating waste on your site will require a waste management licence, registered exemption or pollution prevention and control (PPC) permit.

The exemption you may need is a **paragraph 24 exemption**.

If you have an exemption, you must comply with the exemption conditions.

You will need to register this exemption with the Northern Ireland Environment Agency (NIEA) in **Northern Ireland** or SEPA in **Scotland**. See **Reference 21** Paragraph 24 Exemptions.



***Image 3. Recycling aggregates on site***

## Section 7: Pollution Incident Response Planning

### Produce a Pollution incident response plan.

Careful planning and preparation will reduce the risks of a pollution incident on your site. However, accidents can still happen.

If site workers know how to deal with an incident, and can use the necessary equipment, they can help prevent the pollution spreading and minimise damage to the environment.

### Getting started

- Nominate an individual to have responsibility for the incident plan; this person will be the site contact for incidents. They will be the 'responsible person'.
- Identify where pollution incidents could happen on site.
- Develop a pollution incident response plan for your site. This is a short document that outlines the actions you could take to minimise the pollution caused by an incident. Each site needs its own plan as it has its own specific requirements, so don't simply copy plan from a previous site.

The plan should include:

- **Stop** – how to stop pollution occurring in the first place.
- **Contain** – how to contain the pollution at source and prevent further spread.
- **Notify** – who to inform of the incident; this may be site management, environment manager. If it a serious incident they will then inform the principal contractor and your environmental regulator.
- **Decide** – in consultation with the environmental regulator, evaluate significance of incident.
- **Clean up** – how to deal with pollution clean-up and disposing of the waste in accordance with waste regulations.

Train site staff and contactors how to use the plan and any equipment such as spill kits. Use toolbox talks for reminders.

### Test your plan

- Invite your environmental regulator to review the plan, especially if your site is in a high-risk location such as near a watercourse.
- When working near a river or stream, deploy a boom downstream of your site, if practical.
- When working near water make daily visual inspections as part of your incident planning.
- Never wash any spilt oil, chemicals, or other pollutants away into drains or into the ground.
- You should never use detergents to clean up the oil. This could cause a more serious pollution incident.

See **Reference 15** GPP21 Pollution Incident Response Planning.

## Section 8: Reporting an incident to the Environmental Regulator

### Incident Hotline Numbers:

In **Scotland, Northern Ireland and England** call:

In **Wales** call:

**0800 80 70 60**      **0300 065 3000**

(24 hour service; Press 1 for Welsh,  
2 for English)

You should immediately report any environmental incidents to the relevant environmental regulator by calling the Incident Hotline number for your country, see above.

Incidents can include spillages (e.g. from oils and chemicals), contaminated surface water run-off, flooding, riverbed disturbance, damage to underground services, damage to habitats and poor waste disposal and storage. If in doubt, report it to your Environmental Regulator. (Contact details at the end of this document)

Train your staff and contractors in the use of spill equipment and how to manage and dispose of waste materials legally.

If you are using oils and chemicals, store a suitable spill kit or absorbent materials nearby. Provide appropriate temporary storage for any oils and chemicals. Contain all spillages using absorbents such as sand, soil or commercially available booms or pads and notify the environmental regulator immediately, using the Incident Hotline numbers above.

If you don't report an incident and it is later traced back to your site, this will be taken into account when your environmental regulator decides what enforcement action to take.

Ensure you understand the 'Polluter pays' principle and Environmental Damage and Liabilities Regulations. (For more information on the Environmental Damage Regulations see **Reference 16** Environmental Damage).

## Appendix A: Types of formal approval

	Water discharge	Working close to water	Designated sites and protected species	Other
<b>Northern Ireland</b>	<p>If you want to discharge any of the following: trade or sewage effluent; or other poisonous, noxious or polluting substance into a waterway or water contained in any underground strata you must have approval (a Discharge Consent) from the Northern Ireland Environment Agency (NIEA), See <b>website list</b>.</p>	<p>You must have consent from the Rivers Agency before you place structures in any waterway that could affect its drainage. Contact your local Rivers Agency office for further information, see website list.</p> <p>Check with DAERA inland fisheries for necessary authorisations for nature and the timing of works.</p>	<p>Authorisation may be required for works within designated sites such as Sites of Special Scientific Interest – contact NIEA to check.</p> <p>European Protected Species of animals, their breeding sites and resting places, are protected against disturbance and harm. Check the NIEA website for more information and details on how to apply for a licence.</p>	<p>Planning permission – contact your Local Planning Authority.</p> <p>Trade Effluent Consent for discharging to public foul/combined sewer – contact your water and sewerage company to apply/discuss.</p> <p>If you plan to use herbicides to control weeds you may need authorisation from NIEA - see NIEA website.</p> <p>You may require consent for pesticide activities within an ASSI. Contact NIEA Natural Environment Division at <a href="mailto:CDP@daera-ni.gov.uk">CDP@daera-ni.gov.uk</a></p> <p>Other approvals may be needed depending on the site's specific environmental sensitivities – contact NIEA to check.</p>

<p><b>Scotland</b></p>	<p>Depending on the activity being carried out you may require authorisation from SEPA under the Controlled Activity Regulations (CAR).</p> <p>The level of CAR authorisation required is dependent on the effect that the activity will have on the water environment. The levels of authorisation are as follows:</p> <ul style="list-style-type: none"> <li>• General Binding Rules (GBRs) provide statutory controls over certain lower risk activities such as:</li> <li>• Discharge from waterbound roads and tracks (GBR22)</li> <li>• Discharge to surface water systems (GBR 11)</li> <li>• Discharge from a quarry or borrow pit (GBR 10C)</li> <li>• Discharges from any construction site to the water environment including roads and tracks not covered by a site Licence (GBR 10D)</li> <li>• Registrations are intended to cover small scale activities that individually are low environmental risk but which, cumulatively, can pose a greater risk to the water environment</li> </ul>	<p>NatureScot is the conservation body for Scotland.</p> <p>Permission will be required for works on designated sites such as Sites of Scientific Interest (SSSI) or Special Area of Conservation (SAC). Contact NatureScot for further</p>	<p>Planning permission – contact your Local Planning Authority.</p> <p>Trade Effluent Consent for discharging to public foul/combined sewer – contact your water and sewerage company to apply/discuss.</p> <p>Authorisation under Waste Management Licensing depending on the activity. See SEPA website</p>
	<p>A <b>Licence</b> is needed if site-specific controls are required, particularly if constraints upon the activity are to be imposed.</p> <p>A licence is required for all discharges from a construction site to the water environment including any constructed access tracks if:</p> <ul style="list-style-type: none"> <li>• The site has an area greater than 4ha, or</li> <li>• There is more than 5 km of access track, or</li> <li>• There is more than 1ha, or a length &gt;500m, of ground with a slope &gt;25 degrees</li> </ul> <p>Please contact SEPA to discuss, see website list.</p>	<p>details, see <b>website list</b>.</p> <p>European Protected Species of animals, their breeding sites and resting places, are protected against disturbance and harm. Contact NatureScot for details on licencing.</p>	<p>If you plan to use herbicides to control weeds you may need authorisation from SEPA - see SEPA website.</p> <p>Other approvals may be needed depending on the site's specific environmental sensitivities – contact SEPA to check.</p>

	<p>Note that fees may be charged for Registrations and Simple and Complex licences.</p> <p>Also read <b>Reference 6: CAR A</b> practical Guide for more details.</p> <p>Also refer to <b>Reference 6: SEPA: Sector Specific Guidance: Water Run-Off from Construction Sites</b></p>			
<b>Wales</b>	<p>An Environmental Permit for Water Discharge may be required if you carry out a water discharge.</p> <p>Discharges of clean, uncontaminated water from e.g. excavations, do not need approval providing the discharge is temporary (less than 3 consecutive months) and the advice in this GPP is followed.</p> <p>An abstraction licence may be needed for dewatering from excavations</p> <p>Contact NRW to apply/discuss.</p>	<p>A Flood Risk Activity Permit may be required if works are being proposed in, over, under or adjacent to a <b>Main River</b>. Please check NRW's website for more information.</p> <p>If the watercourse is classed as an <b>Ordinary Watercourse</b> you will need to contact the relevant Local Authority to discuss whether a consent is required.</p> <p>Work on, above, or below the water, between the mean high-water springs mark and 12 nautical miles, may require a marine license.</p> <p>See <b>Reference 22</b> to find out whether your works are near a Main River or Ordinary Watercourse.</p>	<p>Assent or Consent may be required for works within designated sites, such as Sites of Special Scientific Interest – contact NRW to check.</p> <p>European Protected Species of animals, their breeding sites and resting places, are protected against disturbance and harm. Check the NRW website for more information and details on how to apply for a licence.</p>	<p>Planning permission – contact your Local Planning Authority.</p> <p>Trade Effluent Consent for discharging to public foul/combined sewer – contact your water and sewerage company to apply/discuss.</p> <p>If you plan to use herbicides to control weeds you may need to apply for an agreement – see NRW website.</p> <p>Other approvals may be needed depending on the site's specific environmental sensitivities – contact NRW to check.</p>

## Appendix B: Examples of site-specific environmental hazards and sensitivities

<b>Environmental Sensitivities</b>
Downstream water abstractors and users e.g. fish farms.  NOTE: In Northern Ireland, if the waterway or downstream of the works is of a fisheries interest it will have an impact on the level and frequency of engagement with the regulator.
High amenity areas
Designated bathing waters
Fish, especially in fish spawning season
Surface water drains
Designated sites e.g. Sites of Special Scientific Interest (SSSIs)
Designated shellfish waters
Nitrate Vulnerable Zones (NVZ)
Protected habitats and species e.g. Otters. In Wales check section 7 of the Environment (Wales) Act.
Groundwater: In Scotland, and Northern Ireland, (?Wales) all identified groundwater bodies are protected as having future resource potential. Where groundwater bodies are not identified they should be considered as being present unless proven otherwise.

<b>Environmental Hazards</b>
Silt laden water
Foul sewerage pipes
Oil or chemical pipelines
Mains water supply pipelines
High voltage fluid filled cables

# Appendix C: NetRegs Species Survey Calendar

Species	Survey type	Best times to survey											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Habitats/Vegetation	Phase 1 and NVC	Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Bats	Inspection of hibernation/roosts	Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
	Emergence and activity	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Badgers	Bait marking	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Set surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Birds	Breeding surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Winter behaviour	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Migrations	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Dormice		Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Red Squirrels	Hair tube transects	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Visual inspections and field signs	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Otters		Surveys can be done at any time of the year. Avoid disturbing holts when in use.											
Pine Marten		Limited by vegetation and weather conditions rather than season.											
Water Voles	Initial habitat surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Habitat/field signs/activity surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Fish		Limited by vegetation / weather / water conditions rather than season.											
Great Crested Newts and Toads	Habitat surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Pond/terrestrial/egg surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	Larvae surveys	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Reptiles (snakes/lizards)	Basking/Refugia surveys	Not recommended	Not recommended	Not recommended	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
	Hibernating	Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Fresh Water Pearl Mussel (Licence required)		Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
White Clawed Crayfish		Not recommended	Not recommended	Not recommended	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
Insects		Optimal	Optimal	Optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal

Key:  Optimal time to survey     Sub-optimal time to survey     Not recommended time to survey



## Glossary

ASSI	Area of Special Scientific Interest
CIRIA	Construction Industry Research and Information Association
Clean, uncontaminated water	Water which is free from any contamination, for example uncontaminated could include rainwater directly from roofs. Even if the water looks clear it may still be contaminated with e.g. chemicals, so it is essential the sources of run-off are considered carefully when checking whether water is contaminated or not.
Coffer dams	A watertight enclosure pumped dry to permit construction work below the water line.
Combined drains/sewers	Sewers or drains that collect both foul sewage and surface water run-off and carries it safely to a sewage treatment facility. Either owned privately or by the local water and sewerage provider.
Containment	The action of keeping something harmful under control or within limits
Culverts	A covered channel or pipe designed to prevent the obstruction of a watercourse or drainage path by an artificial construction e.g. a road crossing, highway embankment etc.
Cut-off walls	A wall of impervious material built to reduce seepage.
De-silt	Removal of silt.
Dewatering	Removing groundwater or surface water from a construction site.
Discharge	Release of water into the water environment or drainage/sewer systems.
Dredging	The removal or redistribution of any sand, silt, ballast, clay, gravel, or other materials from or off the bed of a watercourse. Generally, results in channel deepening and/or widening.
Duty of Care	Applies to you if you produce, carry, keep, dispose of, treat, import, or have control of waste. The law requires anyone dealing with waste to keep it safe, make sure it's dealt with responsibly and only given to businesses authorised to take it.

Environmental Management Plan	A document describing potential environmental impacts and activities of a project/site and ways to manage and mitigate these.
Flocculants	A substance which promotes the clumping of particles/sediments.
Formal approval	In this document refers to the authorisation(s) you may need from the environmental regulator. They may be called a consent, licence, or permit.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Habitat	Specific area or environment in which a particular type of plant or animal, or group of plants or animals, live
Hazardous material	Hazardous materials are those with toxic properties that damage the environment and / or affect human health
Hazardous waste	Wastes, specified in the European Waste Catalogue, that may be harmful to human health or the environment. This includes but isn't limited to: <ul style="list-style-type: none"> <li>• paint (oil and solvent based);</li> <li>• oils and oily sludges, for instance engine oil;</li> <li>• other chemical wastes such as disinfectants, solvents, insecticides, and pesticides;</li> <li>• garage waste such as used oil/fuel filters, aerosols, antifreeze and brake fluids, lead acid batteries, contaminated rags;</li> <li>• asbestos</li> </ul>
Impermeable	A surface or material that liquid cannot pass through.
Impervious	A surface that cannot be penetrated.
INNS	Invasive non-native species
Lagoon	An artificial pool for the treatment or storage of water.
NNNS	Non-native Species Secretariat.
Organism	An individual living thing.
Overland flow	Also known as run-off. Water flow over the ground surface to the drainage system or direct to watercourse. This occurs if the ground is impermeable, is saturated or if rainfall is particularly intense.
Pesticide	A substance used to control/destroy insects or other harmful organisms to cultivated plants or to animals.

Polluter Pays Principle	Principle in law that ensures that the party responsible for pollution should pay for damage caused to the environment.
Remediation	The act of remedying, reversing, or stopping environmental damage
Ramsar sites	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity
Rip Rap	Rocks or stones that help dissipate the energy from a flow of water, to protect the banks or bed of a pond.
Run-off	Also known as overland flow. Water flow over the ground surface to the drainage system or direct to watercourse. This occurs if the ground is impermeable, is saturated or if rainfall is particularly intense.
SAC	Special Area of Conservation
Secondary containment	This is another container in which a primary container is located. It is impermeable to the product being stored and water, and designed to catch spills, leaks, or overflows from the container (including its pipework and equipment) in everyday use, accidents, and emergencies. Secondary containment is essential to prevent pollution. Bunds, absorbent plant mats, and drip trays are examples of secondary containment.
Sediment mobilisation	The transport or movement by water of insoluble particulate matter.
SSSI	Site of Special Scientific Interest
Soil stripping	Removal of the surface layer of the soil.
SuDS	Sustainable drainage systems are a sequence of management practices and control structures designed to drain surface water in a more sustainable way than conventional techniques.
Surface waters	Water bodies including rivers, lakes, lochs, loughs, reservoirs, ponds, streams, canals, ditches (including those that are temporarily dry), estuaries and coastal waters up to three miles offshore. Northern Ireland legislation defines these as 'waterways'.
Suspended solids	Small solid particles which remain in suspension in water.

Toolbox Talks	Short informal talks for company employees that allow practical advice and information about topics such as waste segregation or handling hazardous waste to be communicated, often during a tea break or lunch hour.
Trade Effluent	Trade effluent is any liquid waste (effluent) discharged from premises being used for a business, trade, or industry.
Waste	<p>Defined by the Waste Framework Directive as “...any substance or object which the holder discards or intends or is required to discard...”</p> <p>Waste is also a resource, albeit one which may present risks to the environment and human health and so must be managed appropriately.</p>

## References

### Reference 1: CIRIA: Environmental good practice on site guide (C741)

<https://www.ciria.org/ItemDetail?iProductCode=C741>

### Reference 2: SEPA guidance for construction

- SEPA (2006) Prevention of Pollution from Civil Engineering Contracts: Special Requirements [https://www.sepa.org.uk/media/152220/wat\\_sg\\_31.pdf](https://www.sepa.org.uk/media/152220/wat_sg_31.pdf)
- SEPA (2006) Prevention of Pollution from Civil Engineering Contracts: Guidance on the Special Requirements. [https://www.sepa.org.uk/media/152233/wat\\_sg\\_32.pdf](https://www.sepa.org.uk/media/152233/wat_sg_32.pdf)
- SEPA (2010) Engineering in the water environment: good practice guide – Sediment Management <https://www.sepa.org.uk/media/151049/wat-sg-26.pdf>
- SEPA (2015) Silt Control Guidance: Preventing Pollution While Dredging. <http://www.sepa.org.uk/media/153290/sepa-silt-control-guidance.pdf>

### Reference 3 CIRIA (2001)– Control of water pollution from construction sites (C532)

<https://www.ciria.org/ItemDetail?iProductCode=C532&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>

### Reference 4: Susdrain - Pollution prevention

<https://www.susdrain.org/delivering-suds/using-suds/suds-principles/pollution-prevention.html>

### Reference 5: SuDS

- CIRIA (2007) Site handbook for the construction of SuDS (C698) <https://www.ciria.org/ItemDetail?iProductCode=C698&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>
- Gov.Wales: (2008) Sustainable Drainage Systems (SuDS) guidance <https://gov.wales/sustainable-drainage-systems-suds-guidance>.
- NetRegs – Construction phase SuDS <https://www.netregs.org.uk/environmental-topics/water/sustainable-drainage-systems-suds/construction-phase-suds/>

### Reference 6: SEPA: CAR – A Practical Guide

- SEPA (2022) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) A Practical Guide [https://www.sepa.org.uk/media/34761/car\\_a\\_practical\\_guide.pdf](https://www.sepa.org.uk/media/34761/car_a_practical_guide.pdf)

#### SEPA (2021): Sector Specific Guidance: Water Run-Off from Construction Sites

<https://www.sepa.org.uk/media/340359/wat-sg-75.pdf>

### Reference 7: Good practice for construction of settlement ponds

- SEPA: (2009) Engineering in the Water Environment Good practice Guide Temporary construction methods [https://www.sepa.org.uk/media/150997/wat\\_sg\\_29.pdf](https://www.sepa.org.uk/media/150997/wat_sg_29.pdf)
- GOV.UK: (2021) RP7 Sediment ponds and traps <https://www.gov.uk/countryside-stewardship-grants/sediment-ponds-and-traps-rp7>

### Reference 8: GPP3 Use and design of oil separators in surface water drainage systems

<https://www.netregs.org.uk/media/1899/guidance-for-pollution-prevention-3-2022-update-v2.pdf>

**Reference 9: Water and sewerage providers:**

- Water and sewerage providers in England, Northern Ireland, and Wales: <https://www.water.org.uk/advice-for-customers/find-your-supplier/>
- OFWAT: Water companies in England and Wales <https://www.ofwat.gov.uk/households/your-water-company/contact-companies/> Water and sewerage providers in Scotland: Scotland on Tap <https://www.scotlandontap.gov.uk/>

**Reference 10 Non-native Species**

- The GB Non-native species Secretariat: Identifying invasive non-native species - ID sheets <https://www.nonnativespecies.org/non-native-species/id-sheets/>
- Northern Ireland: DAERA Invasive Non-native Species <https://www.daera-ni.gov.uk/topics/biodiversity/invasive-non-native-species-inns>
- SEPA: Biosecurity and management of non-native species for construction sites and Controlled Activities: <https://www.sepa.org.uk/media/163480/biosecurity-and-management-of-invasive-non-native-species-construction-sites.pdf>
- The Welsh Government - Harmful (injurious) weeds and invasive non-native species <https://gov.wales/weeds-invasive-non-native-species>
- Species Action Framework: Invasive non-native plants associated with fresh waters A guide to their identification <https://www.nonnativespecies.org/assets/Species-Action-Framework-Invasive-non-native-plants-associated-with-fresh-waters-A-guide-to-their-identification-training-manual.pdf>

**Reference 11 Tools and Resources for Placemaking**

- Scottish Place Standards Partners: Our Place <https://www.ourplace.scot/>
- Nature.Scot: Placemaking and green infrastructure <https://www.nature.scot/professional-advice/placemaking-and-green-infrastructure>
- Place standard is a tool designed to support communities, public, private and third sectors to work efficiently and effectively together to assess the quality of a place <https://placestandard.scot/>
- Greenspace Scotland <https://www.greenspacescotland.org.uk/>
- Scottish Government: Place principle introduction <https://www.gov.scot/publications/place-principle-introduction/>
- Scottish Government Green Infrastructure design and placemaking <https://www.gov.scot/publications/green-infrastructure-design-placemaking/>
- Understanding Scottish Places (USP): Your Town Audit <https://www.usp.scot/StaticPage/UspAudit>
- 
- The Planning for Place programme at the Improvement Service (Scotland) <https://www.improvementservice.org.uk/products-and-services/consultancy-and-support/planning-for-place-programme>
- Scottish Government Planning for Scotland in 2050 National Planning Framework 4 <https://www.transformingplanning.scot/media/1208/place-placemaking.pdf>
- Scotland's Centre for Regional Inclusive Growth (SCRIG) <https://www.inclusivegrowth.scot/>

- Northern Ireland: Creative Lives: Creative place-making in Northern Ireland  
<https://www.creative-lives.org/creative-place-making-in-northern-ireland>
- Northern Ireland Assembly: Landscape Planning for Sustainable Development  
[http://www.niassembly.gov.uk/globalassets/documents/raise/knowledge\\_exchange/briefing\\_papers/series4/kess\\_es\\_policybriefing\\_landscape-planning-for-sustainable-development-.pdf](http://www.niassembly.gov.uk/globalassets/documents/raise/knowledge_exchange/briefing_papers/series4/kess_es_policybriefing_landscape-planning-for-sustainable-development-.pdf)
- Welsh Government: Planning Policy and Guidance – Placemaking  
<https://gov.wales/planning-policy-and-guidance-placemaking>

**Reference 12: The Considerate Constructors Scheme** <https://www.ccscheme.org.uk/>

**Reference 13: GPP 2 Above Ground Oil Storage**

<https://www.netregs.org.uk/media/1299/gpp-2-pdf.pdf>

**Reference 14: GPP 26 Safe Storage of Drums and Intermediate Bulk Containers**

<https://www.netregs.org.uk/media/1885/guidance-for-pollution-prevention-26-2022-updated.pdf>

**Reference 15: GPP 21 Pollution Incident Response Plans**

<https://www.netregs.org.uk/media/1436/gpp-21-final.pdf>

**Reference 16: Environmental Damage**

NetRegs guidance for Scotland and Northern Ireland:

<https://www.netregs.org.uk/environmental-topics/emergency-response/environmental-damage/preventing-and-dealing-with-environmental-pollution-legislation/>

For Wales:

<https://www.gov.uk/government/publications/environmental-damage-prevention-and-remediation-regulations-2009-guidance-for-england-and-wales>

**Reference 17: Managing Waste**

Duty of Care Code of Practice guidance

- Northern Ireland: <https://www.daera-ni.gov.uk/articles/duty-care>
- Scotland: <https://www.gov.scot/publications/duty-care-code-practice/>
- SEPA: Land remediation and waste management  
<https://www.sepa.org.uk/media/28317/land-remediation-and-waste-management-guidelines.pdf>
- Wales: <https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice>

**Zero Waste Scotland: Improving Waste Management on Construction sites:**

- <https://zerowastescotland.org.uk/construction/waste-management-on-site>
- **CIRIA: Using the Net Waste Tool:**  
[https://www.ciria.org/Resources/REK/Training\\_materials/Net\\_Waste\\_Tool\\_user\\_guide.aspx?WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91](https://www.ciria.org/Resources/REK/Training_materials/Net_Waste_Tool_user_guide.aspx?WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91)  
Check your waste carrier is registered.
- Northern Ireland: <https://www.daera-ni.gov.uk/articles/registered-waste-carriers-transporters>
- Scotland: <https://www2.sepa.org.uk/wastecarriers>
- Wales: <https://naturalresources.wales/permits-and-permissions/check-for-a-permit-licence-or-exemption/?lang=en>

Waste Classification: WM3

- Guidance on the Classification and Assessment of Waste (WM3) (UK Wide)  
<https://www.sepa.org.uk/media/361865/waste-classification-technical-guidance-wm3.pdf>

NetRegs <https://www.netregs.org.uk/environmental-topics/waste/>

**Reference 18: GPP 5 Works in or Near Water**

<https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf>

**Reference 19: Health and Safety Executive (HSE) Controlling Hazardous Substances on Construction Sites**

<https://www.hse.gov.uk/construction/healthrisks/hazardous-substances/index.htm>

**Reference 20: Aggregates from Inert Waste**

- GOV.UK Quality Protocol: Aggregates from Inert Waste (applies to Northern Ireland and Wales) <https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-from-inert-waste>
- WRAP: Aggregates from inert waste [WRAP: Aggregates from inert waste](#)
- SEPA - Aggregates from Inert Waste <https://www.sepa.org.uk/media/162893/production-of-recycled-aggregates.pdf>
- QPA and SEPA: Guidance On The Production Of Fully Recovered Asphalt Road Planings [https://www.sepa.org.uk/media/154246/road\\_planings\\_guidance.pdf#](https://www.sepa.org.uk/media/154246/road_planings_guidance.pdf#)
- Zero Waste Scotland: Circular construction <https://zerowastescotland.org.uk/our-work/circular-construction>
- Zero Waste Scotland: Construction Resources for a Circular Economy <https://www.zerowastescotland.org.uk/sites/default/files/Construction%20Circular%20Ecconomy%20Resources%200920.pdf>

**Reference 21 Register a Paragraph 24 Exemption, (U1 Exemption (Wales))**

- Northern Ireland: DAERA - Paragraph 24 Exemption <https://www.daera-ni.gov.uk/articles/crushing-grinding-or-other-size-reduction-waste-bricks-tiles-or-concrete-paragraph-24#>
- Scotland: SEPA Paragraph 24 Exemption <https://www.sepa.org.uk/regulations/waste/activities-exempt-from-waste-management-licensing/>
- Natural Resources Wales: U1 exemption <https://nrwcmstest003.azurewebsites.net/permits-and-permissions/waste-permitting/waste-exemptions/using-waste-waste-exemptions/use-of-waste-in-construction-u1-waste-exemption/?lang=en>

**Reference 22: Wales – Works near Main Rivers or Ordinary Watercourses**

<https://naturalresources.wales/permits-and-permissions/flood-risk-activity-permits/environmental-permits-for-flood-risk-activities/?lang=en>

**Reference 23 Paragraph 9 Exemption: Land treatment or improvement.**

- DAERA: Paragraph 9 exemption: Land treatment for agricultural benefit or ecological improvement <https://www.daera-ni.gov.uk/articles/land-treatment-agricultural-benefit-or-ecological-improvement-paragraph-9-exemption>
- SEPA: Paragraph 9 Exemption – The reclamation or improvement of land <https://www.sepa.org.uk/media/105209/the-reclamation-or-improvement-of-land-technical-guidance-note-for-paragraph-9-exemptions.pdf>



- SEPA Paragraph 19 Exemption – Waste for construction and other relevant work.  
<https://www.sepa.org.uk/media/105261/wmx-tg19.pdf>
- Wales: U10 exemption <https://www.gov.uk/guidance/waste-exemption-u10-spreading-waste-to-benefit-agricultural-land>

#### **Reference 24 Greenfield soils in construction**

- SEPA: Promoting the Sustainable use of Greenfield Soils in Construction  
[https://www.sepa.org.uk/media/154233/reuse\\_greenfield\\_soils\\_construction.pdf](https://www.sepa.org.uk/media/154233/reuse_greenfield_soils_construction.pdf)
- DAERA: Greenfield soil declaration <https://www.gov.uk/greenfield-soil-declaration-northern-ireland/northern-ireland-environment-agency>

#### **Reference 25 CIRIA – Site guides for contaminated soil, SEPA: Land remediation**

- SEPA: Land remediation and waste management  
<https://www.sepa.org.uk/media/28317/land-remediation-and-waste-management-guidelines.pdf>
- Hazardous ground gas C801  
[https://www.ciria.org/CIRIA/CIRIA/Item\\_Detail.aspx?iProductcode=C801&Category=BOOK](https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductcode=C801&Category=BOOK)
- Asbestos in soil and made ground good practice site guide C765D  
[https://www.ciria.org/CIRIA/CIRIA/Item\\_Detail.aspx?iProductCode=C765&Category=BOOK](https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C765&Category=BOOK)
- Unexploded ordnance C785  
<https://www.ciria.org/ItemDetail?iProductCode=C785&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>

#### **Reference 26 Site Waste Management Plans**

- NetRegs: Site Waste management Plans <https://www.netregs.org.uk/environmental-topics/waste/waste-from-construction-and-demolition-sites/site-waste-management-plans/>
- CIRIA: Tools for forecasting waste generated on site:  
<https://www.ciria.org/ItemDetail?iProductCode=PR83&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>
- [Zero Waste Scotland: Preventing waste in construction](#)

#### **Reference 27 Asbestos**

- CIRIA: Asbestos site aid <https://www.ciria.org/ItemDetail?iProductCode=APP-1&Category=APP&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>
- Cl:AIRE Asbestos in soil and construction and demolition materials.  
<https://www.claire.co.uk/projects-and-initiatives/asbestos-in-soil>
- HSENI: Asbestos <https://www.hseni.gov.uk/asbestos>
- HSE: Asbestos licencing <https://www.hse.gov.uk/asbestos/licensing/index.htm>
- HSE: Asbestos training and industry standards  
<https://www.hse.gov.uk/asbestos/licensing/standards.htm>
- SEPA: Asbestos in demolition wastes  
[https://www.sepa.org.uk/media/154363/wst\\_g\\_046\\_asbestos\\_in\\_demolition\\_wastes.pdf](https://www.sepa.org.uk/media/154363/wst_g_046_asbestos_in_demolition_wastes.pdf)
- SEPA: Disposal of asbestos waste to landfill  
<https://www.sepa.org.uk/media/62616/swan12-asbestos-contaminated-waste.pdf>

**Reference 28 Waste exemptions:**

- [Northern Ireland Environment Agency \(NIEA\): Activities exempt from waste management licensing](https://www.daera-ni.gov.uk/landing-pages/waste-management-licensing-exemptions) <https://www.daera-ni.gov.uk/landing-pages/waste-management-licensing-exemptions>
- [SEPA: Activities exempt from waste management licensing](https://www.sepa.org.uk/regulations/waste/activities-exempt-from-waste-management-licensing/) <https://www.sepa.org.uk/regulations/waste/activities-exempt-from-waste-management-licensing/>

**Reference 29 Recycled aggregates**

- WRAP: Aggregates from inert waste [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/296499/LIT\\_8709\\_c60600.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/296499/LIT_8709_c60600.pdf)
- SEPA: Recycled aggregates from inert waste <https://www.sepa.org.uk/media/162893/production-of-recycled-aggregates.pdf>

**Reference 30 Find recycling sites**

- Zero Waste Scotland: Recycling locator <https://wasteless.zerowastescotland.org.uk/articles/recycling-locator>
- NIDirect: How to recycle your business waste <https://www.nibusinessinfo.co.uk/content/how-recycle-your-business-waste>

**Reference 31 Find Waste sites**

- Scotland – Find your waste sites [SEPA: Find licensed waste sites in Scotland](https://www.sepa.org.uk/data-visualisation/waste-sites-and-capacity-tool/) <https://www.sepa.org.uk/data-visualisation/waste-sites-and-capacity-tool/>
- Northern Ireland - Waste sites [DAERA NI: Find licensed waste sites in Northern Ireland](https://www.daera-ni.gov.uk/articles/introduction-public-registers) <https://www.daera-ni.gov.uk/articles/introduction-public-registers>

**Reference 32 Approved pesticide use certificates**

- Northern Ireland: <https://www.daera-ni.gov.uk/articles/specified-certificates-recognised-under-plant-protection-products-sustainable-use>
- Scotland: HSE: [https://www.hse.gov.uk/pesticides/resources/R/Recognised\\_certificates.pdf](https://www.hse.gov.uk/pesticides/resources/R/Recognised_certificates.pdf)

## Website List

NetRegs - Guidance on environmental regulations for businesses in Scotland and Northern Ireland

[www.netregs.org.uk](http://www.netregs.org.uk)

Scottish Environment Protection Agency (SEPA) website

[www.sepa.org.uk](http://www.sepa.org.uk)

Natural Resource Wales

[www.naturalresources.wales](http://www.naturalresources.wales)

Natural Resources Wales Marine Licensing

<https://naturalresources.wales/permits-and-permissions/marine-licensing/?lang=en>

Welsh Government

[www.gov.wales](http://www.gov.wales)

Department of Agriculture, Environment and Rural Affairs Northern Ireland

[www.daera-ni.gov.uk](http://www.daera-ni.gov.uk)

Sustainable Drainage System guidance for Wales

<https://gov.wales/sustainable-drainage-systems-suds-guidance>

Health and Safety Executive (HSE) - Using Storing and Disposing of Plant Protection Products <https://www.hse.gov.uk/pesticides/index.htm>

[www.hse.gov.uk/pesticides/topics/using-pesticides.htm](http://www.hse.gov.uk/pesticides/topics/using-pesticides.htm)

GB Non-Native Species Secretariat

[www.nonnativespecies.org](http://www.nonnativespecies.org)

CEDaR Online Recording for INNS.

[www2.habitats.org.uk/records/ISI](http://www2.habitats.org.uk/records/ISI)

Nature.Scot <https://www.nature.scot>

Chemicals Regulation Directorate (HSE)

[www.hse.gov.uk/crd](http://www.hse.gov.uk/crd)

## Further information

For information about environmental compliance, or to report inconsistencies or inaccuracies in this guidance, visit [www.netregs.org.uk](http://www.netregs.org.uk).

You can view guidance on environmental regulations online at [www.netregs.org.uk](http://www.netregs.org.uk) (for businesses in Scotland and Northern Ireland) and at <http://naturalresources.wales> (for businesses in Wales).

This guidance is issued by the Scottish Environment Protection Agency (SEPA), Northern Ireland Environment Agency (NIEA) and Natural Resources Wales (NRW).

This document is available at [www.netregs.org.uk/environmental-topics/pollution-preventionguidelines-ppgs-and-replacement-series/](http://www.netregs.org.uk/environmental-topics/pollution-preventionguidelines-ppgs-and-replacement-series/).

First published April 2023.

## Useful contacts

**Incident/Pollution hotline:** Northern Ireland, Scotland and England

**0800 80 70 60** (24-hour service)

**Emergency hotline - Wales**

**0300 065 3000** (24-hour service; press 1 for Welsh, 2 for English)

**Floodline -** Wales, Scotland and England

**0845 988 1188**

**Flooding incident line -** Northern Ireland

**0300 200 0100**

### Natural Resources Wales

[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)

Head Office (Ty Cambria)  
29 Newport Road  
Cardiff  
CF24 0TP

Tel: 0300 065 3000 (Mon – Fri,  
9am- 5pm)

[enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk)

### Scottish Environment Protection Agency

[www.sepa.org.uk](http://www.sepa.org.uk)

Corporate Office  
Strathallan House  
The Castle Business Park  
Stirling  
FK9 4TZ

Tel: 03000 99 66 99

[www.sepa.org.uk/contact](http://www.sepa.org.uk/contact)

### Northern Ireland Environment Agency

[www.daera-ni.gov.uk](http://www.daera-ni.gov.uk)

Head Office  
Klondyke Building  
Cromac Avenue  
Gasworks Business Park  
Malone Lower  
Belfast  
BTZ 2JA

Tel: 0300 200 7856

[nieainfo@daera-ni.gov.uk](mailto:nieainfo@daera-ni.gov.uk)