

## 1 Purpose

This document provides information on how to effectively manage pollutants for those working in Design, Construction and Maintenance activities. This guidance is to support the *Level 2 Contract Requirements Environment standard NR/L2/ENV/015*.

### 1.1 Supporting documents

For guidance on management of the pollutant Polychlorinated Biphenyls (PCBs), please refer to the *Guidance Note NR/GN/ESD03*.

If you are new to this topic, please read the through { HYPERLINK "<https://safety.networkrail.co.uk/home-2/environment-and-sustainable-development/environment/pollution-of-landwater/>" } on Safety Central for

### 1.2 What is a pollutant?

A pollutant may be anything that alters the natural state or adversely affects the quality of a natural system. As a result, it is illegal to allow any pollutant to enter a watercourse or drain. Pollutants, particularly silt, are easily traceable to the site from where they originated. In the past it has been a major cause of prosecution. Examples of some common pollutants include:

- Silt
- Bentonite
- Cement or concrete wash water
- Detergent
- Hydrocarbons (e.g oils, diesel)
- Sewage
- Chemicals

## 2 Land and water management

Environmental regulations adopt a Polluter Pays Principle (PPP) in which offenders are liable for clean-up costs as well as fines. In order to protect the environment, in addition to avoiding financial losses, pollution to both land and water can be prevented with the following actions:

- Avoid stripping land of vegetation unless absolutely necessary, as this will reduce the amount of silty water requiring treatment;
- Ensure that site drainage is planned to include cut-off ditches and settlement ponds as required;
- Consider installing cut-off trenches or silt fences to prevent silty surface run-off;

- Where possible, minimise the amount of exposed earth;
- Use oil interceptors in surface water drainage systems, particularly in areas at higher risk of oil contamination e.g. oil storage areas, refuelling areas, vehicle maintenance and parking areas;
- Ensure all plant and machinery have been washed and concrete truck mixers have been hosed down in a designated wash-down area;
- Provide boot wash facilities to wash mud off boots, this is particularly vital on contaminated land to avoid spreading contamination.

### **Please note:**

It is highly important to look out for any visible signs of discolouration or cloudiness in waters at or near the site.

## **3 Sustainable urban drainage systems (SUDS)**

SUDS involve approaches to manage water quality (pollution) by utilising natural processes and can be designed to treat and slow down surface water before it enters watercourses.

SUDS can be installed before or during construction for permanent use after project completion. SUDS can also be retrofitted on existing water systems.

Network Rail would recommend installing SUDS wherever possible, more information can be found on the { [HYPERLINK "https://www.susdrain.org/delivering-suds/using-suds/background/sustainable-drainage.html"](https://www.susdrain.org/delivering-suds/using-suds/background/sustainable-drainage.html) }.

## **4 Storage**

Careful storage of chemicals and oils is essential to reduce or contain leaks and spillages that can escape into the groundwater, nearby rivers and streams and cause pollution. To mitigate this risk, chemicals and oils must be contained in the following ways:

- Ensure all storage containers are appropriately bunded or on a drip tray to capture any leaks;
- Regularly inspect bunds and drip trays for signs of spillages or collection of contaminated rainwater and empty when required (to be dealt with as per hazardous/special waste);
- Ensure appropriate and labelled containers are available for storing all chemicals and oils;
- Regularly check tanks, containers and bunds for damage, leaks and rainwater accumulation;
- Do not store any chemicals or oils within 10m of a watercourse, gully or drain;
- Do not locate tanks/storage areas near to vehicle routes;
- Ensure all containers are housed to prevent chemicals become airborne or be damaged by rain or moisture;

- Regularly review your stock to ensure old or expired chemicals and oils are disposed of and that stock levels are not in excess. This will help to reduce the risk you are exposed to;
- Ensure chemical and oil stores are located outside within secure lockable storage units;
- Ensure any pumps connected to fuelling facilities are locked off when not in use;
- Consider sheltering bunds from the elements to prevent compromising bund capacity. This could save on waste water disposal costs;
- Regularly review security arrangements surrounding storage areas to ensure protected from thieves or vandalism.
- Up to date COSHH assessments should be completed for all relevant oils and chemicals and any specific storage guidance followed.

### What does good look like?



- Secure;
- Tidy;
- Appropriate labelling;
- Covered bunds preventing rainwater ingress;
- Away from transport routes where possible or protected from impact;
- At least 10m away from drains and water courses.

### Please note:

It is a legal requirement to bund (secondary containment) oil storage tanks, drums or containers above 200 litres. The bund capacity should meet 110% of largest container/tank, or 25% of the aggregated capacity (whichever is higher). It is crucial for compliance, that this capacity is maintained at all times.

## 5 Underground Storage

Below-ground tanks and pipework are difficult to inspect and leaks may not be immediately obvious. Therefore it is recommended where possible to decommission underground tanks and pipework and

replace with above ground facilities. Where this is not reasonably practicable, the following guidance is recommended to be followed:

- A system must be implemented for adequately testing or detecting for leaks;
- Fit a maintained leak detection system that is tested at regular intervals; or
- Test any installation prior to commissioning for leaks and then at set intervals going forwards (between 5 & 10 yearly intervals depending on environmental risk);
- Do not install underground tanks below the water table;
- Adequately protected from physical damage;
- Use flexible piping if pipes are to be run below a source of vibration (vibrations from heavy machinery can damage underground pipes);
- Pipework should have no mechanical joints, except in places accessible for inspection by removing a hatch or cover.

## 6 Management of chemicals and oils

To prevent pollution to land and water, effective controls must be in place for handling, use, transport and storage of chemical material and oils, for example:

- Ensure all deliveries are supervised;
- Always be prepared by planning and testing emergency procedures;
- Ensure all individuals on site are briefed on emergency plans and where the nearest spill kit is available;
- Use colour coding to distinguish between surface water (blue) and foul water drains (red) to enhance awareness to all;
- Ensure appropriate spill kits or spillage containment equipment are provided adjacent to storage and refuelling areas and that staff are trained in their use;
- Place a drip tray or absorbent mat under all static plant and mobile plant during refuelling or activities where chemical material may be spilled
- When refuelling plant use an automatic shut off or pistol grip delivery system as well as a funnel;
- Do not ignore any spillages on the ground or into a watercourse. Should this occur, clean up the spill promptly and immediately report any incidents to a line manager;
- Attempt to stop or divert any spills with sand or sand bags;
- Undertake any work at least 10m away from watercourses, gullies and drains;
- Be aware of all watercourses, gullies and drains before starting work and take measures to protect these from any spillages.

Discharge options	Environmental Regulators
<ul style="list-style-type: none"><li>• Surface water drains / Watercourses</li></ul>	<ul style="list-style-type: none"><li>• Environment Agency (EA), Scottish Environment Protection Agency (SEPA) or Natural Resources Wales (NRW)</li></ul>
<ul style="list-style-type: none"><li>• Groundwater (e.g. soakaway)</li></ul>	<ul style="list-style-type: none"><li>• Environment Agency (EA), Scottish Environment Protection Agency (SEPA) or Natural Resources Wales (NRW)</li></ul>
<ul style="list-style-type: none"><li>• Sewers</li></ul>	<ul style="list-style-type: none"><li>• Local Sewerage Undertaker</li></ul>

Table { SEQ Table \\* ARABIC }. Environmental Regulators for permissions

## 7 Discharges to the environment

Contaminated water should not be disposed of to any drains unless permission has been sought from the relevant environmental regulator. Clean uncontaminated rainwater/water is allowed to be discharged into the environment without further action required.

Permission will be gained from the regulator in the way of an environmental permit, consent to discharge or a controlled activity. Even so, these permissions may come with set conditions and it is the duty of the operator to ensure these conditions are not broken. It is recommended that where these consents are held, that the operator conducts regular sampling to assure themselves. It may be that prior to discharge, in order to stay within the conditions, some treatment may need to take place.

Oil interceptors can be used to remove oily residues from water and silt lagoons/ settlement ponds/ catch pits can help to reduce the amount of silt within your water helping you to meet your conditions. You will need to consider waste disposal options for the collected silt.

Where contaminated water cannot be discharged to the environment, other options will need to be looked into to manage it. Treatment often will involve tankering away to a waste treatment facility.

The sewerage network is designed to receive only trade effluent. When connecting up to the network with any new facilities, be sure to have a discussion with your local sewerage undertaker to see if consent to discharge will be required. Some substances are completely banned from being discharged into the sewers e.g. toxic chemicals and heavy metals.

## 8 Disposal of contaminated water, chemicals and equipment

One of the most common causes of pollution to land and water is through inappropriate methods of disposal such as pouring chemicals or oils down drainage systems. Therefore, the most effective methods of disposing of chemical or oil waste are as follows:

- Ensure that you have hazardous waste disposal facilities to hand to dispose of regular hazardous waste streams arising from your site;
- Always segregate hazardous waste types and keep separate from non-hazardous waste facilities;
- For unidentified or unforeseen hazardous wastes, these should be set aside and stored in a safe and secure locker and disposed of via a licenced waste contractor;
- Never pour chemical material or oil waste down drains, including foul drains, watercourses drains or gullies.

## 9 Oil interceptors

Oil interceptors are designed to remove oil contaminants from surface water drainage and are recommended to be used in areas where there is a risk of contamination of drainage water (e.g. heavy vehicle parks or fuelling areas). The following guidance should be taken into account when managing oil interceptors:

- Oil interceptors must be regularly inspected for build-up of oils and silt and cleaned out when required. Oil interceptor waste should be disposed of by a licensed waste contractor;
- As oil interceptors age, it is important to get their integrity tested to ensure their contents are not leaking into the surrounding ground. It is recommended to look at this 6 monthly in high risk areas for best practice;
- Never allow water contaminated with chemicals or detergents to pass through an interceptor as it won't capture them. Detergents also have the potential to disrupt the natural processes of an oil interceptor;
- Although oil interceptors can capture silt, you do not want to rely on them for the cleaning of silt from contaminated water as this can cause issues with the functioning of the system;

- Consider the installation of an alarm system and silt sensor to your oil interceptors. This will help you manage them and help to ensure you do not cause pollution.

## 10 Cement and concrete washout

The washout from a concrete mixing plant, or from the cleaning of ready-mix concrete wagons, will be contaminated with cement. Cement is highly alkaline and therefore toxic within land and aquatic ecosystems. To mitigate the risk from washout:

- Locate washout areas on an impermeable surface away from watercourses and drains;
- Only use designated areas for concrete washout and ensure concrete delivery drivers are aware of their location;
- Place covers over freshly poured concrete to prevent surface washout in heavy rain;
- Consider returning the wagon to the batching plant where washout water could be reused (only wash out the chute on site to minimise wash waters on site. Should this not be possible consider a concrete wash water treatment system for large pours, or for smaller pours, use a polythene-lined skip or pit).

### What does good look like?



## 11 Spillages and environmental hazard mitigation

- All staff on project site must have knowledge of where spill kits are located and how to use them before work begins. Practice annual spill response drills to ensure knowledge of plans;
- Use appropriate PPE when collecting pads/booms. Alternatively, use the emergency response contractor to collect the waste;
- If a spill occurs, stop work immediately;

- Check or consider Incident Response Plans;
- In watercourses consider oil boom downstream of all possible spillages before work begins;
- Dispose of all contaminated materials as hazardous/special waste;
- Ensure any contaminated water is taken to an appropriately licensed disposal site;
- Notify a line manager of actions taken;
- Report any environmental incident to control as aligned to new (December 2017) National Operating Procedures, emergency response. The contractor should not be called directly; control should assess the next steps.
- Following an incident, feed in any lessons learnt back into your Incident Response Plans and practice new measures in the form of a drill.

**In the event of a Category 4 spill (<20 litres), the following steps must be taken:**

1. Absorb with earth, sand or proprietary absorbent material;
2. Place into suitable container for disposal as hazardous waste;
3. Collect any contaminated ground soils etc. and place into suitable containers for disposal as hazardous waste;
4. Report as an environmental incident.

**Should a Category 3-1 spill occur (>20 litres), the following steps must be taken:**

1. Contain spillage by any means possible; prioritise actions to prevent the oil getting into rivers, ponds etc.;
2. Protect sewers, drains and culverts;
3. Use a gulper to absorb spill if an absorbent will not suffice;
4. Call emergency spill contractors;
5. Report as an environmental incident;
6. Investigate the incident to an appropriate level;
7. Such large spillages are required to be logged in the hazard directory.