

**Waste Storage and Treatment guidance**

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Contents

[Introduction 2](#_Toc175730048)

[Written Environmental Management System 2](#_Toc175730049)

[Waste Pre-Acceptance 4](#_Toc175730050)

[Waste Acceptance 6](#_Toc175730051)

[Quarantine Storage 8](#_Toc175730052)

[Waste Storage 9](#_Toc175730053)

[Waste Treatment 11](#_Toc175730054)

[Enclosure within Buildings 13](#_Toc175730055)

[Point Source Emission to Air 14](#_Toc175730056)

[Fugitive Emissions to Air 15](#_Toc175730057)

[Measures for Dust, Mud and Litter 17](#_Toc175730058)

[Measures for Odour 21](#_Toc175730059)

[Measures for Noise 24](#_Toc175730060)

[Point Source Emissions to Water 26](#_Toc175730061)

[Fugitive Emissions to Water 27](#_Toc175730062)

[Vermin 30](#_Toc175730063)

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## Introduction

This guidance contains advice on the management systems a waste storage and treatment facility should have in place to comply with their authorisation.

Most permit and registration conditions are objective-based: SEPA defines the objective is but it’s up to the Authorised Person to determine how best to meet that objective. For example, to make sure dust or odour does not cause harm outside the site’s boundary.

This guide will help Authorised Persons work out how to meet these objectives and applies to all waste storage and treatment activities. Further guidance for specific activities (e.g. WEEE treatment, depollution of waste motor vehicles) is also available.

It is not definitive, and it does not replace the general obligation to manage each operation in the context of its specific location and characteristics.

Some measures may not be suitable or relevant to a specific operation and will depend on the:

* Activities being carried out.
* Size and nature of the activities.
* Location of the site.

In certain situations, a higher standard of environmental protection may be necessary, for example, where there are local sensitive receptors.

## Written Environmental Management System

<Report date here (month, year)>

Permits and Registrations require that Authorised Persons prepare and maintain a written environmental management system (in older licences this may be referred to as the ‘Working Plan’).

The written environmental management system must include clear environmental performance procedures, paying particular attention to:

* Staff responsibilities and training.
* Process control.
* Monitoring and measurement.
* Maintenance programmes.
* Emergency preparedness and response.
* Records maintenance.

Use the management system to review the development of cleaner technologies and their applicability to site operations in particular:

* as a result of substantiated pollution incidents;
* when reviewing management systems;
* when planning investment decisions, for example new items of plant.

Have and maintain the following documentation as part of the management system:

* inventory of emissions to air and water
* residues management plan
* accident management plan
* site infrastructure plan
* odour management plan, if required
* noise and vibration management plan, if required
* dust, mud and litter management plans, if required
* pest management plan, if required

The written environmental management system must include a schedule of inspection and maintenance for all pollution control infrastructure, including for example the:

* impermeable surfacing and drainage system
* ducts of abatement systems
* site security

Have a document control procedure that clearly describes how and when you will periodically review documentation and maintain version control.

The written environmental management system must clearly set out the physical capacity of the facility to store and handle waste, which may be less than the quantity limits allowed by the permit or registration. For each waste type, specify limits for the maximum:

* waste storage capacity at any one time
* daily and annual throughputs
* residence time for waste

When doing this, consider the characteristics of the facility and the waste types and the pollution risks, for example fire and odour.

## Waste pre-acceptance

All permits and registrations set out the waste types and quantities authorised for acceptance at the facility.

Implement waste pre-acceptance procedures so enough is known about a waste to confirm it is suitable for acceptance before it arrives at the facility.

 Follow a risk-based approach, considering:

* the source and nature of the waste
* its hazardous properties
* potential risks to process safety, occupational safety and the environment
* knowledge about the previous waste holder

Some facilities receive waste on an ad hoc basis. In those instances, pre-acceptance checks can still be carried out before the waste is accepted. For example, through the exchange of information at the weighbridge.

Get enough information from the waste producer to be satisfied the waste has been properly classified as set out in [WM3](https://www.gov.uk/government/publications/waste-classification-technical-guidance).

Collect the following information from potential customers:

* details of the waste producer including organisation name, address and contact details
* a description of the waste
* the waste code (also referred to as European Waste Classification code)
* the source of the waste (the process that has created the waste)
* information on the nature and variability of the waste production process
* information about the history of the producer site if it may be relevant to the classification of the waste (for example soils and other construction and demolition arisings from a site contaminated by previous industrial uses)
* the waste’s physical form
* the waste’s composition (based on representative samples if necessary)
* a description of the waste’s odour and whether it is likely to be odorous

For mirror entry codes (as defined in WM3), assess the waste to assign the relevant mirror entry code and keep a record of that assessment.

Sample information may not be necessary if the origin of the waste is reliably understood, and it clearly shows that the waste is non-hazardous. However, a visual assessment alone will not be enough to assess whether mirror entry waste is hazardous or not.

If the waste is a mirror entry and has not been properly assessed, assume it is the hazardous entry as a precautionary measure. The pre-acceptance information should be verified by contacting or visiting the producer. Dealing with staff directly involved in waste production can help to fully characterise a waste.

After a waste has been properly assessed and classified, technically assess the waste’s suitability for storage and treatment at the facility.

Reassess the information required at pre-acceptance if the:

* waste changes
* process giving rise to the waste changes
* waste received does not conform to the pre-acceptance information

Keep pre-acceptance records.

## Waste acceptance

Implement waste acceptance procedures to ensure the characteristics of the waste received matches the information obtained during waste pre-acceptance. This is to confirm the waste is as expected and can be accepted. If it is not, accept it as a non-conforming waste, or reject it.

Follow a risk-based approach, considering:

* the source, nature and age of the waste
* potential risks to process safety, occupational safety and the environment (for example, from fires, odour and other emissions)
* the potential for self-heating
* knowledge about the previous waste holder(s)

When deciding whether to accept waste, check the relevant storage areas and treatment processes have the physical capacity needed to handle the waste. Do not accept if waste capacity is not available or if the limits in the permit or registration would be breached.

Visually check wastes and verify against pre-acceptance information and transfer documentation before accepting on site. The extent of the initial visual check is based on the waste type and how it is packaged.

Check and validate all transfer documentation and resolve discrepancies before accepting the waste. If the incoming waste classification or description is incorrect or incomplete, then address this with the original waste producer or waste carrier (or both) during waste acceptance. Record any non-conformance.

Have clear criteria to identify non-conforming wastes and wastes to be rejected. Have written procedures for recording, reporting, and tracking non-conforming and rejected wastes. These must include:

* using quarantine storage
* notifying the relevant customer or waste producer
* record a justification for accepting non-conforming waste

Weigh each load of waste on arrival to confirm the quantities against the accompanying paperwork, unless alternative reliable and representative systems are available (for example, based upon density and volume).

Record the weight in an electronic or equivalent system, to monitor available capacity at the facility. Records of incoming waste are not required for waste from householders deposited at Household Waste Recycling Facilities.

The person carrying out waste acceptance checks must be trained to effectively identify and manage any non-conformances in the loads received, to comply with the Duty of Care for waste and the permit and registration conditions.

Watch waste being unloaded, so it can be quarantined if necessary before it is mixed with other material.

Unless specifically mentioned in the Registration or Permit, offloading and reception areas must have an impermeable surface with sealed drainage, to prevent any potentially polluting liquid from escaping off site.

## Quarantine storage

Have a dedicated waste quarantine area or areas to temporarily store waste being rejected, or non-conforming waste whilst it is being assessed.

Quarantine areas must have impermeable surface with sealed drainage if there is a risk of contaminated runoff from the quarantined waste.

Where there is a risk of fugitive emissions from quarantined waste store it in closed or covered containers or within a building. For example, sheet quarantined contaminated soil or store it in a covered skip to prevent rainfall or wind from mobilising pollutants.

Quarantine storage must be separate from all other storage and clearly marked as a quarantine area.

Have written procedures for dealing with wastes held in quarantine, including a maximum storage volume. The maximum storage time must take account of the potential for odour generation, pest infestation and storage conditions. If the waste is infested or odorous aim to remove it within 24 hours or sooner.

## Waste Storage

To reduce the environmental risk associated with the storage and handling of waste, use the following techniques.

Store waste in locations that minimise the unnecessary handling of waste.

Where possible, locate storage areas away from watercourses and sensitive perimeters, for example those close to housing.

Store all waste within the secure area of the facility to prevent unauthorised access and vandalism.

Clearly document the maximum storage capacity of the facility and its designated storage areas. Regularly monitor the quantity of stored waste against the allowed maximum capacities, and not exceed them.

Define capacity in terms of, for example:

* cubic metres or tonnage
* numbers of skips or other containers
* maximum tank or vessel capacities

Clearly mark all waste storage areas and provide signs indicating the type of waste stored there.

Do not accumulate wastes. Treat wastes or remove them from the site as soon as possible. Prioritise the treatment or off-site transfer of waste based on:

* its type
* its age on arrival
* the date of arrival
* the duration of storage on site

Keep different types of waste segregated if contamination would inhibit the reuse, recycling or recovery of the waste.

Where paper, plastic, metal or glass have been collected separately, they must not be mixed with other waste or material which could hamper their recycling.

Minimise refuse derived fuel (RDF) and solid recovered fuel (SRF) storage durations. Implement an auditable bale identification system so bales can be removed in date order.

Securely wrap bales of RDF and SRF with high-density polyethylene (HDPE) membrane or equivalent. This is to prevent water entering, access by pests and odour release. Inspect bales regularly and rewrap any that are damaged.

Except for inert waste, follow the first-in-first-out principle, unless it is necessary prioritise more recently received wastes because they pose a higher risk of pollution.

All waste containers must be fit for purpose, that is:

* in sound condition
* not corroded, if metal
* have well-fitting lids
* suitable for the contents
* with caps, valves and bungs in place and secure
* within the manufacturer’s designed lifespan, particularly for plastic containers

Inspect storage areas, containers and infrastructure regularly to make sure there is no loss of containment and deal with any issues immediately. Keep written records of the inspections.

Clean storage bays and containers on a regular basis to prevent the build-up of aging waste, which will be a source of odour and attract vermin.

## Waste Treatment

#### Overarching Concept

Waste treatment must have a clear and defined benefit. Fully understand and monitor waste treatment processes to ensure waste is treated effectively.

Treated output material must meet expectations and be suitable for its intended disposal or recovery route.

Identify and characterise emissions from the process and take appropriate measures to control them at source.

Prevent unwanted or unsuitable material from entering subsequent waste treatment processes.

Have accurate and up-to-date written details of the treatment activities, abatement and control equipment. Include information about the characteristics of the waste to be treated and the waste treatment processes, including:

* simplified process flow sheets that show the origin of the emissions
* diagrams of the main plant items where they have environmental relevance, for example, storage, tanks, treatment and abatement plant design
* details of physical processes for example separation, compaction, shredding, heating, cooling or washing
* an equipment inventory, detailing plant type and design parameters
* waste types to be subjected to the process
* the control system philosophy and how the control system incorporates environmental monitoring information
* process flow diagrams (schematics)
* the hourly processing capability of waste treatment equipment
* a summary of operating and maintenance procedures

The extent of the information about the treatment activities will depend on the nature, scale and complexity of the facility and the range of environmental impacts it may have.

Have up-to-date details of the actions to take during abnormal operations to ensure compliance with Permit or Registration conditions. Abnormal operating conditions include:

* unexpected releases
* start-up
* momentary stoppages
* breakdowns
* shutdown

#### Outputs

Do not make assumptions about the nature of the outputs from the waste treatment processes.

Ensure that the outputs are appropriately classified in accordance with WM3. Failure to properly classify waste may be a breach of the Duty of Care.

This is particularly important for fines arising from shredding and trommelling processes, which generally:

* require disposal at cost
* contain a range of contaminants
* are likely to be subject to a mirror entry code, for example 19 12 11\* versus 19 12 12

Outputs which meet end-of-waste criteria must still be stored within the permitted area until sold and dispatched to market. Prevent and minimise risks of pollution from non-waste and waste materials.

## Enclosure within Buildings

Enclosing activities within buildings can prevent and minimise emissions of pollution, given that an appropriately designed building will reduce a range of types of pollutants, in particular, noise, dust and odour.

If the waste storage and treatment activities are likely to cause (or are causing) environmental harm at sensitive receptors which cannot be addressed by alternative measures, then carry out the waste treatment activities within an enclosed building.

An enclosed building means a construction designed to provide sheltered cover and minimise emissions of noise, particulate matter, odour and litter, enclosed on all sides. Keep doorways as small as practicable and covered with fast-acting doors which default to the closed position.

Material transfer and storage systems and equipment (for example conveyors, hoppers, containers and tanks) can extend outside the enclosed building so long as they are also fully enclosed.

Regularly assess enclosed building’s integrity where potential faults in building integrity are likely to cause pollution such as odour. Consider using EN ISO 9972:2015 to demonstrate building containment.

Enclosed buildings must be ventilated to provide a safe working environment for employees. The building’s ventilation system must be properly designed and effective for the building to provide adequate containment and prevent fugitive emissions and unacceptable noise. To validate the size of supply points, and the volume of dirty air that needs to be extracted, the design engineer must consider:

* the needs of the occupants working in the building
* heat release
* the volume of moist gas emissions that will be generated

The air inside the enclosed building must be maintained under negative pressure, or have a localised extraction system that extracts dirty air from sources of pollution within the building. Sources that could potentially benefit from localised extraction include:

* shredders and trommels
* waste loading and unloading areas
* odorous stockpiles

Implement measures to control door opening, to make sure that the engineered ventilation system works as effectively as possible. Maintain negative pressure when doors are opened, and monitor pressure to demonstrate effectiveness. Additional measures to minimise fugitive emissions may be required in some cases, for example installing an airlock entry system.

To reduce emissions of noise and vibration, have an appropriate minimum building surface density. Install acoustic seals on doors and windows, following advice from a specialist.

## Point Source Emission to Air

Ensure all process emissions are collected, extracted and directed to an appropriate abatement system for treatment before release.

Identify the main chemical constituents that are part of an inventory of emissions to air. Include the speciation of volatile organic compounds (VOCs) where identified in the inventory and it is practicable to do so. Characterise emissions sufficiently to ensure the chosen abatement systems are effective.

 Reduce point source emissions to air (for example dust and odorous compounds) from the treatment of waste using an appropriate combination of abatement techniques. The appropriate combination of abatement techniques would include one or more of:

* adsorption
* biofiltration, biotrickling or bioscrubbing
* cyclone
* fabric filter
* water injection (into a shredder)

Assess and design vent and stack locations and heights to make sure dispersion capability is adequate. Dispersion modelling may be needed to establish whether the height of the vent or stack allows emissions to disperse appropriately, preventing any impacts on receptors.

Where monitoring is required, including for odour, install suitable monitoring points which meet the sampling standard for the relevant pollutants.

Use monitoring to demonstrate the effectiveness of the abatement, so that preventive or corrective action can be taken as necessary.

Implement contingency measures for abatement system down-time and for any abnormal events, for example biofilter media change, including suspending operations until the site is back under control, or having standby abatement available.

## Fugitive Emissions to Air

Prevent and minimise fugitive emissions to air, including dust, litter, odour and noise. Relying solely on dispersion and wind direction to minimise pollution at sensitive receptors is not sufficient.

Use waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify wastes that could cause, or are causing, fugitive emissions to air. In such cases:

* take appropriate risk-assessed measures to prevent and control emissions
* prioritise their treatment or transfer

Where necessary to prevent fugitive emissions to air from the storage or handling of wastes, use a combination of the following measures:

* use fully enclosed material transfer and storage systems and equipment outside buildings, for example conveyors, hoppers, containers, tanks and skips
* store and handle the waste within a suitably enclosed area (for example bays), a building or enclosed building
* keep doors closed except when access is required
* keep enclosed buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system, locating air extraction points close to potential emission sources
* use fast-acting or ‘airlock’ doors that default to closed

Have an appropriate, regular maintenance programme covering all buildings, plant and equipment. The maintenance programme must include:

* a leak detection and repair programme to promptly identify and mitigate any fugitive emissions of organic compounds from treatment plant and associated infrastructure (for example, pipework, conveyors or tanks)
* regular inspection and cleaning of all waste storage and treatment areas and equipment (including conveyor belts) to avoid contamination
* preventing plant and equipment from corroding (for example, conveyors or pipes) – including selecting and using appropriate construction materials, and lining or coating equipment with corrosion inhibitors

## 

## Measures for Dust, Mud and Litter

Where activities are likely to produce dust and particulates, mud or litter that could cause harm at sensitive receptors, or if such harm has been substantiated, implement and regularly review a relevant management plan.

#### Site layout, housekeeping and operations

* Design the site layout to prevent emissions and limit the emissions sensitive receptors are exposed to – for example homes, schools or hospitals
* Use good housekeeping practices so the site is clear of dust, mud, litter and other debris
* Use road sweepers to remove dust, mud, litter and other debris
* Erect litter fences or micro-netting around the site
* Avoid activities that could spread dust and particulates, mud or litter during high winds – for example, loading and unloading waste from vehicles outside buildings or treating waste materials outside buildings
* Make sure abatement systems are designed to treat and minimise releases – these systems must be monitored and maintained following the designer’s or manufacturer’s recommendations

#### Enclosure in buildings

* Carry out operations inside buildings using negative pressure dust extraction systems whenever possible
* Install PVC strip curtains to reduce emissions through doorways
* Install automatic, fast-closing doors and designing doorways and openings in a way that prevents through-drafts
* Enclose conveyors and minimising drops, or using pneumatic or screw conveying systems
* Install filters to vents on silos, building extractors and conveying systems

#### Vehicle movement

* Use enclosed vehicles, skips or containers wherever possible, or covering them if this is not possible (unless they’re empty)
* Enforce speed limits and reducing vehicle movements and idling on site
* Surface or pave roadways suitably (ideally with concrete) to make them easy to clean
* Ensure vehicles keep to paved roads
* Regularly clean and dampen roadways
* Use wheel wash systems to slow trucks – wash wheels and keep roadways damp
* Ensure road-going vehicles do not enter unmade ground and muddy areas (including the tipping piles) to reduce muddy track-out

#### Dust suppression and monitoring

* Use dust suppression systems (such as mist sprays, bowsers, water cannons, chemical suppressants, heavy water and foam suppressants) at appropriate locations and times
* Install dust and particulate monitors with trigger alarms

Locate measures such as mist sprays as close as possible to point source emissions of dust, for example at conveyors, trommels, shredders, and at building entrances – except where this would increase odour from biodegradable waste.

#### Stockpiled wastes and open ground

Keep stockpile levels at least 0.5m below the top of structures holding the waste to minimise wind-whipping at all times. Other measures include:

* Control the moisture content of the material in the stockpile to prevent materials becoming friable
* Plant grass or trees on open ground to reduce dust (hydro-seeding can rapidly establish vegetation on waste tips, slag heaps or other apparently infertile ground)

If stockpiling waste outdoors is unavoidable, take steps to prevent material escaping from them. For example:

* Use sprays and binders
* Position bay walls or windbreaks
* Ensure stockpiles do not face the direction of the prevailing wind
* Minimise waste storage heights and volumes
* Cover

#### Emissions management plan for dust

Implement a proactive dust management plan for any of the activities listed below where the site is in either of the locations listed below.

The following activities;

* Storage and treatment of aggregates, soils, ashes or similar materials
* Storage and treatment of wood
* Storage and treatment of household, commercial or industrial waste in a waste transfer station or materials recycling facility
* Storage and treatment of scrap metal
* Storage and treatment of biowaste in the open, including the finished material

in any of these locations:

* In, or within 2km of, an air quality management area for PM10
* Within 500m of a sensitive receptor such as a home, school, hospital or nursing home, food preparation facility or similar
* Within 250m of a sensitive receptor when treating biowaste

Include the following in a dust management plan:

* the plan version number and date
* an introduction to the site and description of site operations – including site plan(s) to support the description
* local sensitive receptors
* other local contributors of dust and emissions
* emissions sources on site
* site abatement systems, including the nomination of responsibility
* contact with the local community and respond to complaints

Provide details of the location and specifications of site PM10 monitoring, including:

* the location of the monitor
* how to manage the data
* how the equipment is serviced and calibrated
* the trigger action levels (if applicable)

#### Litter

Litter can create a negative visual impact and cause a nuisance to site neighbours. Litter can be generated from poor site operational practice and the escape of waste during transit.

Enclosed areas will be required for activities with the potential for litter generation. Identify the location of sensitive areas adjacent to the site during the design stage.

Locate measures such as litter fencing and micro-netting as close as possible to areas where light-weight, loose waste is loaded and unloaded, if this activity is done outdoors. Do not rely solely on fences and screens at the perimeter to stop litter escaping.

Site design will allow for potential exposure from wind. Avoid site construction in a particularly exposed location.

* Include monitoring of litter generation in operational procedures.
* Generally, carry out waste handling activities (including tipping, shredding, compacting) within a building or enclosed area. A site-specific risk-based approach may be used to justify proposals to store or handle particular wastes outdoors.
* Maintain site roads.
* Accept of waste in sealed or covered vehicles only.
* Provide perimeter planting, fencing and landscaping to reduce wind impacts

#### Mud

Mud falling from vehicles using the site can cause a nuisance to road users.

* Design the site to reduce the risk of mud generation on access roads. Construct and maintain site roads to avoid mud generation and deposit on public roads.
* Ensure that vehicles entering or leaving the site are clean. Where the potential exists to generate mud on on-site roads provide a wheel wash at the site entrance/exit.
* Keep inert waste and non-hazardous waste tipping areas clear of loose waste that might be picked up by vehicle tyres.
* Regular inspection of site roads and public highways.

If measures such as using hoses and road sweepers do not prevent mud escaping onto the public highway, take further measures and consider installing a high pressure wheel wash. Regardless of the measures used, make sure that contaminated water does not escape from the facility.

## 

## Measures for Odour

Prevent or, where that is not possible, minimise odour by:

* restricting raw materials that are likely to cause odour, like putrescible or already putrid biodegradable waste
* minimising quantities and storage times for odorous or potentially odorous materials
* managing materials and processes in ways which minimise the production of odorous chemicals
* working within the effective operational capacity of the site
* regularly cleaning bays / containers used for waste storage
* providing effective containment and abatement for odorous materials and activities

Where activities are likely to produce odour pollution at sensitive receptors, or such pollution has been substantiated, implement and regularly review an odour management plan.

Reject waste that is highly odorous as part of pre-acceptance and waste acceptance procedures unless handled and treated within an enclosed building with appropriate odour control measures, including extraction via odour abatement. Otherwise, talk to the waste supplier to stop it happening again. Avoid receiving aged waste, for example by refusing to accept waste from other transfer stations that do not have strict inventory controls and documented holding times.

Ensure odorous waste arrives at and leaves the facility in covered or enclosed vehicles. Mesh covers are not adequate to control odour. Minimise how long potentially odorous waste is kept at the facility, in particular under anaerobic conditions. Making smaller stockpiles increases natural aeration, reducing the risk of anaerobic biodegradation which can cause odour.

Wash empty vehicles before they leave the facility, to remove any residues which may be or become odorous. Ensure the run-off from this process is contained and lawfully discharged.

Do not allow contaminated liquids to pool for long periods of time, as they can be a source of odour. Take action to avoid ponding or pooling. Industrial vacuum cleaners can be used to suck up liquids. Clean any spillages immediately.

Cover odorous or potentially odorous waters or liquids or keep them in enclosed tanks or containers.

Using masking agents (for example dry nano systems, ozone systems and ionisation systems) is a way of attempting to disguise an odour problem but is not a substitute for preventative measures.

Respond effectively and proportionately to any process monitoring which indicates a problem, or reports from the community of odour pollution.

#### Odour management plan

Have an odour management plan if the site carries out one of the following activities:

* household, commercial and industrial waste transfer station activities
* materials recycling and handle odorous inputs or reject streams (or both)
* composting in open windrows
* composting in closed vessels
* mechanical biological treatment
* sewage sludge treatment
* clinical waste treatment
* anaerobic digestion

Where odour pollution is expected at sensitive receptors, or has been substantiated, periodically monitor odour emissions using European (EN) standards. For example, either:

* dynamic olfactometry according to EN 13725 to determine the odour concentration
* EN 16841-1 or -2 to determine the odour exposure

If using alternative methods for which no EN standards are available (for example, estimating odour impact), use ISO, national or other international standards to make sure the data is of an equivalent scientific quality. Set out the monitoring frequency in the odour management plan.

Where odour pollution is expected at sensitive receptors, or has been substantiated implement and regularly review an odour management plan. It must include all of the following elements:

* actions and timelines to address any issues identified
* a procedure for conducting odour monitoring
* a procedure for responding to identified odour incidents, for example, complaints
* an odour prevention and reduction programme designed to identify the source(s)  and to implement prevention and reduction measures

## Measures for Noise

Design the layout of the facility to locate potential sources of noise (including building exits and entrances) away from sensitive receptors and boundaries. Locate buildings, walls, and embankments so they act as noise screens.

Use measures to control noise, for example, including:

* adequately maintaining plant or equipment parts that may become noisier as they deteriorate – such as bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery
* closing doors and windows of enclosed areas and buildings
* avoiding noisy activities at night or early in the morning
* minimising drop heights and the movement of waste and containers
* using broadband (white noise) reversing alarms and enforcing the on-site speed limit
* using low-noise equipment, for example, drive motors, fans, compressors and pumps
* adequately training and supervising staff
* where possible, provide additional noise and vibration control equipment for specific sources – such as noise reducers or attenuators, insulation, or sound-proof enclosures

Where noise or vibration pollution is expected at sensitive receptors, or has been substantiated, implement and regularly review use a noise and vibration management plan including:

* actions and timelines to address any issues identified
* a procedure for conducting noise and vibration monitoring
* a procedure for responding to identified noise and vibration events

Include a noise and vibration reduction programme designed to:

* identify the sources of noise and vibration
* measure or estimate noise and vibration exposure
* characterise the contributions of the sources
* implement prevention and reduction measures

For noise, the noise and vibration management plan must be informed by a noise impact assessment carried out following the methodology of BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’.

For vibration, the noise and vibration management plan must be informed by a vibration impact assessment carried out following the methodology of BS 6472-1:2008 ‘Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting’.

## Point Source Emissions to Water

Identify the main chemical constituents of the facility’s point source emissions to water and sewer as part of an inventory of emissions.

Discharges to water or sewer must comply with the conditions of an environmental authorisation or trade effluent consent.

Relevant sources of waste water include:

* runoff from all waste storage and handling areas, including loading and unloading areas
* process water
* condensate collected from treatment process
* waste compactor runoff
* vehicle washing
* washing of containers and vessels
* soil washing effluent
* vehicle oil and fuel leaks
* spills and leaks
* rainwater from bunds around containers and tanks

If treating wastewater before discharge or disposal, use an appropriate combination of treatment techniques, for example, could include silt or solids removal and using an oil separator to manage site drainage.

Segregate uncontaminated water streams (for example clean runoff from roofs) from those that require treatment.

Separate contaminated water streams based on pollutant content and treatment required. For example, collect and treat separately contaminated surface runoff water and process water. 

## Fugitive Emissions to Water

Control potential fugitive emissions and make sure that they do not cause pollution.

Design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account:

* collection capacities
* surface thicknesses
* strength and reinforcement
* falls
* materials of construction
* permeability
* resistance to chemical attack
* inspection and maintenance procedures
* relevant standards of construction
* end use, for example by tracked or wheeled vehicles or vehicle weight

Drainage infrastructure must:

* prevent incompatible wastes coming into contact with each other
* make sure that fire cannot spread

Unless managing on only inert waste, store and treat waste on an impermeable surface with contained drainage. The impermeable surfaces must have sealed construction joints.

Provide bunds for all tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled.  Bunds must;

* be impermeable, stable and resistant to the stored materials
* the greater of 110% of the capacity of the largest container the bund is protecting or, in cases of two or more containers, 25% of the combined volume of all the tanks the bund is protecting
* have no outlet (that is, no drains or taps) and drain to a blind collection point
* have pipework routed within bunded areas with no penetration of contained surfaces
* be designed to catch leaks from tanks or fittings
* have an appropriate capacity
* have regular visual inspections – any contents must be pumped out or otherwise removed under manual control after checking for contamination
* be fitted with a high level probe and an alarm (as appropriate) if not frequently inspected
* have tanker connection points within the bund (where possible), and if not possible provide adequate containment for spillages or leakage
* have programmed engineering inspections (extending to water testing if structural integrity is in doubt)
* be emptied of rainwater regularly to maintain the containment capacity

Above-ground tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled must be kept on an impermeable surface with contained drainage. Fit the tanks with alarms and cut-out systems to detect and prevent leaks and spills.

Minimise using subsurface equipment and infrastructure, and decommission it where possible. For subsurface structures:

* establish and record the routing of all site drains and subsurface pipework
* identify all subsurface sumps and storage vessels
* engineer systems to minimise leakages from pipes and make sure they can be detected quickly if they do occur
* provide secondary containment or leakage detection for subsurface pipework, sumps and storage vessels – vessels must be fitted with alarms and cut-out systems to detect and prevent spills when filling
* establish an inspection and maintenance programme for all subsurface structures, for example, pressure tests, leak tests, material thickness checks or CCTV

Provide secondary containment that meets, for all drums and other containers which:

* are greater than 200 litres in capacity and are kept outside
* contain liquids (waste or otherwise) that could be harmful to the environment if spilled

Provide appropriate buffer storage capacity at the facility to store waste waters, taking into account:

* potential abnormal operating scenarios and incidents
* the nature of any polluting substances and their impact on the downstream waste water treatment plant and receiving environment

Monitor, treat and reuse the water held in the buffer storage before discharging.

Prevent emissions from washing and cleaning activities by:

* containing and directing spray, liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for offsite disposal – do not discharge them to surface or storm drains
* where possible, using biodegradable and noncorrosive washing and cleaning products
* storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains
* preparing cleaning or disinfection solutions in contained areas of the site and never in areas that drain to the surface water system or groundwater

Implement a spillage response plan and train staff to follow it and test it.

Procedures and associated training ensure spillages are dealt with immediately.

Keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. Make sure kits are replenished after use.

Stop spillages from entering drains, channels, gullies, watercourses and unmade ground. Make available proprietary sorbent materials, sand, booms or drain mats for use when required.

Ensure any spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage.

Have a documented inspection and maintenance programme for impermeable surfaces and containment facilities and keep records to demonstrate its implementation. 

## Vermin

Manage waste in a way that prevents vermin and pests. Flies, rats and birds they can affect operations, be a nuisance to neighbours and pose an environmental and health hazard as a potential vector for pathogens.

Vermin and insects may be present in or be attracted to the waste. This can have an adverse effect on the local environment and lead to complaints from site neighbours.

Where vermin would cause environmental harm at sensitive receptors, or has been substantiated, implement and regularly review a vermin control plan:

Consider whether all waste handling and processing can be carried on indoors.

* Include regular site inspection to check for vermin and insects. Keep records of all inspections and monitor actions.
* Remove and dispose of all litter accumulating on or around the site to be on a regular basis.
* Ensure that waste is covered and avoid storage for longer than necessary.
* Ensure all biodegradable wastes are removed as soon as possible, and within 48 hours of arrival or within 72 hours at public holiday weekends.
* Treat high risk areas with insecticide.
* Use pest-control specialists to control vermin levels if they become a problem.

#### Pest Management Plan

Where pests would cause environmental harm at sensitive receptors, or if this has been substantiated, create, use and regularly review a pest management plan including:

* inspecting for and controlling pests
* rejecting loads of infested waste
* treating pest infestations promptly, and removing waste if necessary
* storing, handling and using approved pest control products