

SR2022 No 7: generic risk assessment - Materials recycling facility

The site:

- accepts no more than 75,000 tonnes each year
- stores no more than 7,500 tonnes of waste listed in Schedule 1 at any one time
- stores no more than 15,000 tonnes of wastes listed in Schedule 1 and processed wastes derived from them at any one time
- has a daily throughput of waste listed in Schedule 1 of less than 75 tonnes

The Environment Agency produces the generic risk assessments for all standard rules permits. These list the potential risks and specify the measures (but they are not limited to) required, to manage them.

Check this generic risk assessment to understand:

- the potential risks of sorting, separation, screening, baling, shredding and compaction of waste into different components for recovery
- how to manage the risks effectively

If your proposed activity has the same risks and can you apply for the standard rules permit

Each risk comprises:

- information about the source, pathway and receptor – and the potential harm to that receptor
- a judgement of the level of risk and justification of that judgement
- actions for managing the risk (through permitting) and a residual risk rating after managing it

Risk management involves breaking or limiting the source-pathway-receptor linkage to reduce the risk. If we set minimum distances we explain the basis of the distance, for example by modelling.

We will control the residual risk (after risk management) when we assess compliance.

If you need to check the meaning of any terms we have used (in the context of this risk assessment), see the [explanation of terms](#).

This generic risk assessment is based on the following parameters.

Parameter 1

These permitted activities:

- acceptance and storage of waste (R13)
- sorting, screening, separation, screening, baling, shredding, crushing and compaction of waste for recovery (R3, R4, and R5)

Parameter 2

The permitted waste types:

- Are restricted to those listed in schedule 1 of the permit.

Parameter 3

Quantity of waste accepted at the facility is restricted to:

- less than 75,000 tonnes each year

The total quantity of waste listed in Schedule 1 (that can be stored prior to and after processing) is restricted to 15,000 tonnes.

Parameter 4

All waste listed in Schedule 1 shall be stored and treated on an impermeable surface with sealed drainage system which meets a design standard.

Parameter 5

The only point source discharges to controlled waters are clean surface water from the roofs of buildings and from areas of the facility not used for the storage or treatment of wastes. No other direct or indirect discharges are permitted.

Parameters 6 - 7

The activities shall not be carried out within:

- 500 metres of a European site (within the meaning of Regulation 8 of the Conservation of Habitats and Species Regulations 2017) or a Site of Special Scientific Interest, including candidate or proposed sites or Maritime Conservation Zone
- 50 metres of any well, spring or borehole used for the supply of water for human consumption (including private water supplies)

Parameter 8

- All waste listed in Schedule 1 of this permit shall be stored and treated in an enclosed building

Parameter 9

There are no point source emissions to air.

Parameter 10

Secondary containment is risk assessed and follows the recommendations of CIRIA 736 report.

1. Risk to local human population

1.1 Release of particulate matter (dust) and micro-organisms (bioaerosols)

Dust and bioaerosols travel through the air and can be:

- inhaled, ingested or inoculated
- deposited on garden fruit and vegetables and then ingested

There is a risk of dust and bioaerosols causing:

- respiratory irritation and illness
- gastro-intestinal illness

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reasons for giving the activity this rating is because:

- permitted waste types are non-hazardous and do not include dusts, powders or loose fibres
- there is a low potential to produce bioaerosols
- treatment activities include sorting, separation, screening, baling, shredding and compaction of waste into different components for recovery
- there is potential for exposure to anyone living or working close to the site (excluding operator and employees)
- there is potential for dust generation from the transfer and treatment activities during prolonged dry periods e.g. summer months.

Managing the risk

All waste listed in Schedule 1 of this permit shall be stored and treated in an enclosed building.

The permit requires emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution.

The following actions also need taking:

- all appropriate measures shall be followed as documented in the management system,
- if required, an emissions management plan must be produced and implemented

Taking these actions will control the risk and rate it as 'low'.

1.2 Waste, litter and mud on local roads

Vehicles entering and leaving the site risk causing:

- nuisance
- loss of amenity
- road traffic accidents

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as medium
- overall severity of potential consequences as medium
- overall risk rating as medium

The reasons for giving the activity this rating is because:

- there is a risk of creating unsafe road surfaces in wet weather
- local residents are often sensitive to mud on roads

Managing the risk

Risk management is the same as risk 1.1 along with:

- all waste must be stored and treated within a building
- appropriate measures are required to prevent and minimise emissions, including mud tracking from site and litter must be documented in the management system
- if required an emissions management plan must be submitted and a risk assessment review done
- the emissions management plan is implemented if required

Taking these actions will control the risk and rate it as 'low'.

1.3 Odour

Odour travels through the air and can be inhaled. There is a risk of causing:

- nuisance
- loss of amenity

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as medium
- overall severity of potential consequences as high
- overall risk rating as high

The reasons for giving the activity this rating is because:

- waste types in schedule 1 could be odorous

Managing the risk

To manage the risk the standard rules permit requires:

- storage and treatment of wastes listed in schedule 1 must be done within an enclosed building
- emissions shall be free from odour at levels likely to cause pollution
- an odour management plan should be produced and implemented if required

Taking these actions will control the risk and rate it as 'low'.

1.4 Noise and vibration

Noise travels through the air and vibration through the ground. There is a risk of causing:

- nuisance
- loss of amenity for local residents and workplaces
- loss of sleep

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as medium

- overall severity of potential consequences as medium
- overall risk rating as medium

The reasons for giving the activity this rating is because local residents are often sensitive to noise and vibration.

Managing the risk

To manage the risk the standard rules permit requires:

- emissions are free from noise and vibration at levels likely to cause pollution
- treatment of wastes must be done within an enclosed building
- a noise and vibration management plan to be implemented if required

Taking these actions will control the risk and rate it as 'low'.

1.5 Scavenging animals and birds

Animals and birds travel over land and through the air. There is a risk of causing:

- nuisance
- loss of amenity
- harm to human health from waste carried off-site and from faeces

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reason for giving the activity this rating is because the permitted wastes unlikely to attract scavenging animals and birds.

Managing the risk

To manage the risk the standard rules permit:

- requires wastes to be stored and treated in a building
- can require an emissions management plan and changes to the management system to prevent or control scavenging animals or birds

Taking these actions will control the risk and rate it as 'low'.

1.6 Pests such as flies

Pests, such as flies can travel through the air or over land. There is a risk of causing:

- nuisance
- loss of amenity
- harm to human health

We have judged the:

- likelihood of the hazard affecting the receptor as medium
- overall severity of potential consequences as medium
- overall risk rating as medium

The reasons for giving the activity this rating is because some of the permitted wastes may attract pests, such as flies.

Managing the risk

To manage the risk the standard rules permit:

- requires wastes to be stored and treated within an enclosed building
- can require an emissions management plan and changes to the management system to prevent or control pests, such as flies

Taking these actions will control the risk and rate it as 'low'.

2. Risk to local human population and local environment

2.1 Flooding of the site

Water can flood the site during heavy or prolonged rainfall.

There is a risk of waste washed off-site contaminating buildings, gardens and natural habitats downstream.

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as medium
- overall risk rating as medium

The reasons for giving the activity this rating is because:

- the permitted waste types are non-hazardous and therefore the risk of contamination is not considered high

- leachate may have a high biological oxygen demand (BOD) and suspended solids

Managing the risk

Standard rules permits are not usually issued in flood risk areas.

To manage the risk the standard rules permit requires:

- compliance with the sensitive location exclusions
- a written management system that identifies and documents the process controls to minimise the risk of pollution – includes those arising from operations, maintenance, accidents, incidents, and non-conformances.

The accident management section of the management system covers:

- assessing the risk of flooding and measures to prevent or reduce the risk
- contingency plans for diversion of waste, if required
- emergency procedures which must be clearly communicated to all site operatives

Taking these actions will control the risk and rate it as 'low'.

2.2 Fire risk

There is a risk of fire on-site from:

- arson and, or vandalism
- spontaneous combustion from uncontrolled decomposition

Fire can cause:

- polluting materials (smoke or fumes) to travel through the air, water or over land
- spillages and contaminated firewater by direct run-off from the site and through surface water drains and ditches

We have assessed the potential harm as:

- respiratory irritation, illness, and nuisance to the local population
- injury to staff, firefighters or arsonists and vandals
- air, water, or land pollution

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as high

- overall severity of potential consequences as medium
- overall risk rating as medium

The reasons for giving the activity this rating is because:

- combustible wastes are listed in Schedule 1 of the permit

Managing the risk

To manage the risk the standard rules permit requires:

- a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances - therefore includes measures to prevent and control fires, including containment of fire waters
- a site-specific fire prevention plan (FPP) can be required
- a robust waste acceptance procedure
- no burning of wastes

Taking these actions will control the risk and rate it as 'low'.

3. Risk to local human population, livestock and wildlife

3.1 Litter on surrounding land and in final material

Litter can travel through the air and then be deposited on land. There is a risk of causing:

- nuisance
- loss of amenity
- harm to animal health

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reasons for giving the activity this rating is because:

- local residents are sensitive to litter
- waste types listed in this permit likely to produce litter must be stored and treated in a building

Managing the risk

To manage the risk the standard rules permit requires:

- wastes listed in schedule 1 are stored and treated in a building
- compliance with the 'emissions of substances not controlled by emission limits' rule, submitting an emissions management plan, if necessary
- operators to follow appropriate measures guidance

Taking this action will control the risk and rate it as 'low'.

3.2 Gaining unauthorised access to site

There is a risk of direct physical contact with all on-site hazards such as wastes, machinery and vehicles.

There is a risk of causing injury to humans or livestock.

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reasons for giving the activity this rating is because the:

- permitted wastes are non-hazardous
- management system includes procedures for worker and visitor safety

Managing the risk

To manage the risk the standard rules permit requires:

- activities shall be managed and operated in accordance with all appropriate measures and a documented and implemented management system that stipulates all preventative measures and emergency responses should accidents occur (including site security measures to prevent unauthorised access)
- emergency contact details shall be displayed at the site entrance
- visitors should receive a health and safety induction when visiting and must follow the site operator's instructions

Taking this action will control the risk and rate it as 'low'.

4. Risk to surface waters close to and downstream of site

4.1 Risk of pollution causing acute effects

There is a risk of pollution from spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic and ammonia content and suspended solids.

Contamination can travel through direct run-off from site over the land, surface water drains and ditches.

We have assessed the acute effects as follows:

- oxygen depletion
- fish kill
- algal blooms

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reason for giving the activity this rating is because:

- there is potential for contaminated rainwater run-off from waste operations, especially during heavy rain
- leachate may contain suspended solids

Managing the risk

To manage the risk the standard rules permit requires:

- non-hazardous waste listed in Schedule 1 must be stored and processed in a building with sealed drainage
- a written management system that identifies and documents the process controls to minimise the risk of pollution – includes those arising from operations, maintenance, accidents, incidents, and non-conformances
- all liquids must be in containers with secondary containment
- all secondary containment meeting CIRIA 736
- run-off is restricted by the 'emissions of substances not controlled by emissions limits' rule
- appropriate measures guidance to be followed
- flood risk contingency plan for diversion of waste can be activated
- emergency procedures and contingency plans will be clearly communicated to all site operatives

Taking these actions will control the risk and rate it as 'low'.

4.2 Risk of pollution causing chronic effects

There is a risk of pollution from:

- liquid spills
- leachate from waste
- contaminated rainwater run-off from waste

Contamination can travel by:

- direct run-off from site over the land, through surface water drains and ditches
- indirect run-off through soil

We have assessed the chronic effect as deterioration to water quality.

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reason for giving the activity this rating is because pollution is likely to be detected quickly and the effects are temporary and reversible.

Managing the risk

To manage the risk, take the actions for risk 4.1 along with:

- all liquids must be in containers with secondary containment
- run-off is restricted by the 'emissions of substances not controlled by emission limits' rule
- using drainage plans to separate clean and dirty water
- considering this risk in an accident management plan

Taking these actions will control the risk and rate it as 'low'.

5. Risk to water abstracted from a watercourse

These risks relate to watercourses downstream of a facility and to water for agricultural or potable use.

This receptor is at risk from:

- liquid spills
- leachate from waste
- contaminated rainwater run-off from waste

There is a risk of contaminants travelling through direct run-off from the site across ground surface, via surface water drains and ditches and finally through abstraction. This could have acute effects and cause the closure of abstraction intakes.

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

The reason for giving this rating is due to the potential for contaminated rainwater run-off from waste operations carried out in the open, especially during heavy rain.

Managing the risk

To manage this risk, take the actions set out in risks 4.1 and 4.2.

Taking these actions will control the risk and rate it as 'low'.

6. Risk to groundwater

Groundwater is at risk from:

- liquid spills
- leachate from waste
- contaminated rainwater run-off from waste

There is a risk of contaminants travelling through soil and groundwater which can then be abstracted from a borehole. This could have a chronic effect resulting in the groundwater requiring treatment or causing closure of a borehole.

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low
- overall risk rating as low

We have given this rating because of the potential for contaminated rainwater run-off or leachate from waste operations, especially during heavy rain. The consequence is based on the possibility of pollution not being detected for a long time.

Managing the risk

To manage the risk the following actions must be taken:

- the activities shall not be carried out within 50 metres of any well, spring or borehole used for the supply of water for human consumption (including private water supplies)
- wastes must be stored and handled within a building and on an impermeable surface with sealed drainage system to prevent contaminated run-off
- secondary containment meets CIRIA 736 standards

Taking these actions will control the risk and rate it as 'low'.

7. Risk to protected sites

Protected sites include:

- National Parks and Areas of Outstanding Natural Beauty
- Marine Conservation Zones
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Special Protection Areas
- Ramsar wetland sites

Protected sites can be at risk from any source and by any pathway.

The risk of harm to protected sites include (but are not limited to) the following:

- nutrient enrichment
- leachate
- contaminated surface water run off
- smothering
- disturbance
- predation

Judgement of risk

We have judged the:

- likelihood of the hazard affecting the receptor as low
- overall severity of potential consequences as low

- overall risk rating as low

The reasons for giving the activity this rating is because storing and transferring waste may cause harm to and deterioration of nature conservation sites.

Managing the risk

To manage the risk we require compliance with the standard rules permit, including:

- applying exclusion distances

Taking this action will control the risk and rate it as 'low'.

Explanation of terms

Receptor

The things at risk and that need protecting.

Receptors considered include atmosphere, land, surface waters, groundwater, humans, wildlife and their habitats.

A single receptor may be at risk from several different sources and all must be addressed.

Source

The agent or process that has the potential to cause harm.

A contaminant or pollutant (a hazard) that has the potential to cause harm. For example, the activity or operation taking place for which a particular hazard may arise.

Harm

The harmful consequence to the receptor if the hazard is realised.

Pathways

The route or means by which a defined hazard may affect a receptor.

Source-pathway-receptor linkage

There has to be a link between the source, pathway and receptor for there to be a risk.

Likelihood of exposure

This is the likelihood of the receptors being exposed to the hazard. The meaning of the definitions are:

- high – exposure is probable – direct exposure is likely with no or few barriers between the hazard source and the receptor
- medium – exposure is fairly probable - feasible exposure is possible as the barriers to exposure are less controllable
- low – exposure is unlikely – several barriers exist between the hazard source and receptor to reduce exposure
- very low – exposure is very unlikely – effective, multiple barriers are in place to reduce exposure

Overall magnitude of potential consequence

This is the severity of the consequence if the hazard is realised and may cause actual or potential harm.

This will have a high, medium, low or very low rating using attributes and scaling to consider 'harm'.

Risk rating

We work out the risk rating by combining the likelihood of exposure with the magnitude of the potential consequences.

We assign these ratings:

- high risk – requires additional assessment and active management
- medium risk – requires additional assessment and may need active management and, or monitoring (or both)
- low and very low risks will require a periodic review