Environment Agency Permit Variation
Environmental risk assessment
Rainham Landfill Site
EPR EP3136GK

July 2025

Context: Permit variation application to include the necessary arrangements for RDF storage and transfer within the composting and wood process

Pollution linkages				Judgement				Action (by permitting)	
Source	**Pathway**	**Receptor**	**Harm**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
- Composting -									
Release of micro-organisms (bioaerosols).	Air transport then inhalation, ingestion or inoculation.	Local human population.	Harm to human health - respiratory irritation and illness.	Medium	Medium	Medium	Composting activities produce and release bioaerosols e.g. micro-organisms. The site is remote from any residential receptors the closest being 1.5km and are not at risk of bioaerosol emissions from the composting activity. The composting activity is immediately surrounded by other VES operations forming part of the Rainham Integrated Waste Management Facility. The closest non residential receptors are the Rainham Landfill gas utilisation plant which is a directly associated VES activity operated by a third party (66m north west) and the Freightmaster industrial estate (closest boundary 140m west). Prevailing wind is to the north east across open landfill for > 500m therefore potential exposure time at the closest receptors is limited. Existing operations do not indicate any adverse impact from this aspect.	Routine biannual bioaerosol monitoring indicates control measures in operation at the site are effective. Turning of active windrows is undertaken the minimum number of times required to ensure a high grade end product. Wind direction is considered when undertaking turning and can be delayed in conditions where even with controls in place off site impacts could be unacceptable. Shredders only operate at slow and medium speed to prevent release of dust. Dust suppression systems are fitted to shredders. Speed restrictions are in place at the site to minimise disturbing fugitive emissions. Waste acceptance procedures are in place with conditioning (moisture control) of inputs. Monitoring of moisture content during the composting process and hydrating the windrows as required to avoid the formation of a dry fraction susceptible to transport by wind. Temperature and moisture readings will determine when the windrows will need additional dampening. Steaming of windrow s will be reduced by ensuring the compost pile is within the correct temperature range. Regular cleaning of the compost pad is undertaken to avoid formation of dry crust / residue from which loose material can be liberated during vehicular movements	Low

								or wind friction and transported off site. Site surfaces such as roads and tracks will be regularly dampened down and/or regularly swept to suppress dust and bioaerosols. Risk of fire controlled by a Fire Prevention Plan including pile sizes, separation distances and storage conditions Equipment involved in the shredding and screening activities will be subject to planned preventative maintenance, cleaning and will be fitted with water spray systems which can be operated as required. Routine visual assessments of dust levels are carried out with a process in place for corrective actions. Material transportation from the shredding area to the composting area, and for final product out of site, takes place under sheeted vehicles. Activities on site are undertaken in line with appropriate guidance and best practice to produce PAS100 and QP certified end product.	
Releases of particulate matter (dusts).	Air transport then inhalation.	Local human population.	As above.	Medium	Medium	Medium	Composting activities can produce and release particulates. Permitted waste types do not include dusts, powders or loose fibres and this is managed through waste acceptance procedures. The site is remote from residential receptors the closest being 1.5km.	Daily yard cleaning. Waste acceptance checks. A cleaning rota is in place to manage dust and debris. Deep clean takes place a minimum of twice per annum and includes removal of waste from the area being cleaned and hosed down. Regular maintenance of all hardstanding. All loads of waste entering and exiting the site will be sheeted or otherwise contained. Shredders only operate at slow and medium speed to prevent release of dust. Speed restrictions on site. Every load tipped has visual inspection with clearly defined acceptance criteria. Waste to be stored within bays or on hardstanding. Visual inspection of dust levels on a daily basis.	Low

As above.	Air transport then deposition.	Local human population.	Nuisance - dust on cars, clothing etc.	Medium	Low	Medium	As above.	As above.	Low
Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Air transport then deposition on garden fruit/vegetables and then ingestion.	Local human population.	Gastro-intestinal illness.	Low	Medium	Low	Most dust will be washed off by rain or during food preparation for feedstocks. No loose powders and dusts are permitted.	No relevant exposure at this location via the specified pathway.	Low
Waste, litter and mud on local roads.	Vehicles entering and leaving site.	Local human population.	Nuisance, loss of amenity, road traffic accidents.	Low	Medium	Low	The road network entering and leaving and surrounding the site is used for non domestic access to the VES Integrated Waste Management Facility and adjacent industrial estate therefore sensitivity is low.	Regular maintenance of hardstanding. Routine housekeeping. Sheeting / containment of vehicles containing waste. Vehicular speed restrictions. A bowser with a deflector plate is permanently stationed on the site and can be used for dampening down of local roadways during exceptionally dry periods if required.	Low
Odour	Air transport then inhalation.	Local human population.	Nuisance, loss of amenity.	Medium	Low	Low	Composting produces and is likely to release odour. The remote location of the site and direction of the prevailing wind means off site impacts are unlikely.	Minimisation of residence times. Optimisation of aerobic treatment. Avoidance of conditions leading to anaerobic conditions within the windrow. Unfavourable feedstock mixtures, wrong moisture levels, low oxygen or damaging temperatures will all interfere with effective management of odorous materials. Turning of piles prevents anaerobic decomposition with odours associated with a reducing chemistry. Frequency managed / optimal (no over turning). Assessment of meteorological conditions when turning (wind direction) etc. Management of the piles to achieve BS PAS 100 QP requires process monitoring and consistency. Daily yard cleaning. All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low

Noise and vibration.	Noise through the air and vibration through the ground.	Local human population.	Nuisance, loss of amenity, loss of sleep or harm.	Medium	Low	Low	Noise generating activities include intermittent mechanical handling, shredding and screening (shredding activities are low / medium speed which have lower noise emissions compared to high speed shredding). Distance attenuation alone to the nearest residential receptor is > 60 dB. No activities are carried out are likely to cause any perceptible vibration beyond the operational envelope of associated plant and machinery.	PPM regime in place for all equipment. All plant and machinery will be maintained in accordance with the manufacturers specification. Regular maintenance of hardstanding to prevent uneven surfaces. Speed limits are in place for vehicle movements. Daily checks of equipment for abnormal operation. Routine qualitative noise monitoring. All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low
Scavenging animals and scavenging birds.	Air transport and over land.	Local human population.	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Medium	Medium	Medium	Permitted wastes may attract scavenging animals and birds.	Routine site inspections by the site operations team identify any increased scavenging animals and birds. A proactive pest control contract is in place. Food waste is not accepted at the site. The composting process undergoes sanitisation in accordance with the PAS 100 standard.	Low
Pests (e.g. flies).	Air transport and over land.	As above.	Harm to human health, nuisance, loss of amenity.	Medium	Medium	Medium	Insect pests can multiply on permitted wastes, particularly in summer months or when waste is odourous and attracts flies	The process is managed effectively to avoid anaerobic conditions. Waste inputs are shredded and processed with minimal residence time in input piles. The sanitisation process is sufficient to denature any eggs, pupa or larval stages.	Low
Flooding of site.	Flood waters.	Local human population and local environment.	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Low	Medium	Medium	Waste types are non-hazardous and therefore should not be a high risk. Leachate may be high in BOD but may be diluted with flood water and therefore be low risk. There are no surface water features within the site boundary.	The composting is in a ‘Flood Zone 3’ but is protected up to a 0.1% AEP by local flood defenses along the Thames. There is no risk of flooding from any reservoirs. Flood maps show some limited surface water flooding to thewester boundary of the site however this reflects the fall in levels to drainage and the LiDAR based maps to not take into account water movement through drainage infrastructure.	Low
Fire risk from stockpiles,arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of air,water or land.	Medium	Low	Low	Waste will be maintained with adequate moisture correction as per industry standard so that it is not readily combustible. Permitted waste types are organic and non-hazardous therefore only a low magnitude risk is estimated. All stockpiled material will be stabilised and will be monitored for increased temperatures. Action will be taken to reduce any temperatures.	The facility will be operated in accordance with a Fire Prevention Plan which includes limits on maximum pile sizes, separation distances and storage conditions as well as access to sufficient fire fighting water.	Low

Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	As above.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	Low	Low	Low	As above	As above.	Low
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic content.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All surface waters close to and downstream of site.	Acute effects; oxygen depletion, fish kill and algal blooms	High	Medium	High	The boundary of the compost pad is 40m from the Thames tidal peak. There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. Consequence is low because pollution is likely to be detected quickly and effects are temporary and reversible. The width of the Thames as it passes the site location is > 900m meaning high dilution.	The boundary of the compost pad is 40m from the Thames tidal peak. Permitted waste types do not include sludges or liquids. Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Leachate generated on the pad is treated by the landfill leachate treatment plant. There is no fuel stored on site. The site has a hold up capacity of 1138m^3 before overtopping to the south. This volume is sufficient to contain fire water generated by a major incident. Site inspections and defect reporting system in place.	Low
As above	As above. Indirect run-off via the soil layer	All surface waters close to and downstream of site.	Chronic effects; deterioration of water quality	High	Low	Medium	There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. Consequence is medium because pollution may take loner to detect. The width of the Thames as it passes the site location is > 900m meaning high dilution.	As above	Low
As above	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Abstraction from watercourse downstream of facility (for agricultural or potable use).	Acute effects, closure of abstraction intakes.	Low	Medium	Medium	There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. The width of the Thames as it passes the site location is > 900m meaning high dilution.	As above	Low
As above	Transport through soil/groundwater then extraction at borehole.	Groundwater	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	High	High	High	Leachate will be generated from open windrow composting activities. The Facility is underlain by low permeability alluvial clay The site is 2700m from the nearest source protection zone (SPZ 3).	Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Site inspections and defect reporting system in place.	Low

Any	Any	Protected sites - European sites and SSSIs protected species/habitats and other nature conservation sites.	Harm to protected site through nutrient enrichment, leachate, contaminated surface water run off, smothering, disturbance or predation .	Medium	Medium	Medium	Waste composting operations may cause harm to and deterioration of nature conservation sites.	The composting site is located > 600m form the closest SSSI (Inner Thames Marshes) to the north west. There is a LNR 1450m to the north east and a scheduled ancient monument 4250m to the south east. All other ecological / heritage receptors are > 5000m from the facility. The likelihood of impact to these sites is low.	Low
- Wood treatment and storage -									
Releases of particulate matter (dusts).	Air transport then inhalation.	Local human population.	As above.	Low	Medium	Low	Wood recycling activities can produces and release particulates. Permitted waste types do not include dusts, powders or loose fibres and this is managed through waste acceptance procedures. The site is remote from residential receptors the closest being 1.5km. The closest receptors are medium sensitivity commercial / industrial receptors. Prevailing wind is to the north east across open landfill for > 500m.	The site is operated in accordance with a Dust and Emissions Management Plan 'DEMP'. Daily yard cleaning. Waste acceptance checks. A cleaning rota is in place to manage dust and debris. Deep clean takes place a minimum of twice per annum and includes removal of waste from the area being cleaned and hosed down. Regular maintenance of all hardstanding. All loads of waste entering and exiting the site will be sheeted or otherwise contained. Shredders only operate at slow and medium speed to prevent release of dust. Dust suppression option fitted to shredders. Speed restrictions on site. Every load tipped has visual inspection with clearly defined acceptance criteria. Waste to be stored within bays or on hardstanding. Visual inspection of dust levels on a daily basis. Cessation of shredding in weather conditions likely to cause propagation of dust outside the site.	Low

As above.	Air transport then deposition.	Local human population.	Nuisance - dust on cars, clothing etc.	Low	Medium	Low	As above.	As above.	Low
Litter.	Air transport then deposition	Local human population, livestock and wildlife.	Nuisance, loss of amenity and harm to animal health	Low	Medium	Low	The location of the site away from areas where visual amenity could be impacted. Established operations do not result in emissions of this type.	Waste acceptance checks. Cessation of shredding in weather conditions likely to cause propagation of litter outside the site. Use of dust suppression, sheeting / containment of vehicles containing waste. Light fraction removed via picking lines is stored in enclosed / sheeted containers. Routine visual inspections and housekeeping.	Low
Waste, litter and mud on local roads.	Vehicles entering and leaving site.	Local human population.	Nuisance, loss of amenity, road traffic accidents.	Low	Medium	Low	The road network entering and leaving and surrounding the site is used for non domestic access to the VES Integrated Waste Management Facility and adjacent industrial estate therefore sensitivity is lower than residential.	Regular maintenance of hardstanding, Routine housekeeping. Sheeting / containment of vehicles containing waste. Vehicular speed restrictions. A bowser with a deflector plate is permanently stationed on the site and can be used for dampening down of local roadways during exceptionally dry periods, if required.	Low
Odour	Air transport then inhalation.	Local human population.	Nuisance, loss of amenity.	Low	Low	Low	The source odour potential is low and the materials are unlikely to give rise to noticeable off site emissions. The remote location of the site, low sensitivity of surrounding receptors and direction of the prevailing wind means off site impacts from any low concentration fugitive odours are unlikely.	Odour pollution from this activity is unlikely. The type of waste and low residence time means aerobic and anaerobic decomposition is minimal.	Low
Noise and vibration.	Noise through the air and vibration through the ground.	Local human population.	Nuisance, loss of amenity, loss of sleep or harm.	Medium	Low	Low	Noise generating activities include intermittent mechanical handling, shredding and screening (shredding activities are low / medium speed which have lower noise emissions compared to high speed shredding). Distance attenuation alone to the nearest residential receptor is > 60 dB. No activities are carried out are likely to cause any perceptible vibration beyond the operational envelope of associated plant and machinery.	PPM regime in place for all equipment. All plant and machinery will be maintained in accordance with the manufacturers specification. Regular maintenance of hardstanding to prevent uneven surfaces. Speed limits are in place for vehicle movements. Daily checks of equipment for abnormal operation. Routine qualitative noise monitoring. All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low

Scavenging animals and scavenging birds.	Air transport and over land.	Local human population.	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Low	Medium	Low	Permitted wastes types do not represent a food source attractive to scavenging animals and birds as there is no primary or residual putrescible content.	A proactive pest control contract is in place. Routine site inspections by the site operations team identify the presence of and any change in numbers of scavenging animals and birds and feedback is provided to the contractor as appropriate.	Low
Flooding of site.	Flood waters.	Local human population and local environment.	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Low	Medium	Medium	Waste types are non-hazardous and therefore should not be a high risk. There are no surface water features within the site boundary. Leachate formation would be minimal however there could be some residual particulates and the bulk of the material will be buoyant.	The wood recycling process is in a 'Flood Zone 3' but is protected up to a 0.1% AEP by local flood defenses along the Thames. There is no risk of flooding from any reservoirs. Flood maps show some limited surface water flooding to thewester boundary of the site however this reflects the fall in levels to drainage and the LiDAR based maps to not take into account water movement through drainage infrastructure.	Low
Fire risk from stockpiles,arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of air,water or land.	Medium	High	High	Wood wastes are flammable.	The facility will be operated in accordance with a Fire Prevention Plan which includes limits on maximum pile sizes, separation distances and storage conditions as well as access to sufficient fire fighting water.	Low
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	As above.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	Low	Low	Low	As above	As above.	Low
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All surface waters close to and downstream of site.	Acute effects; oxygen depletion, fish kill and algal blooms	High	Low	Medium	The boundary of the compost pad is 40m from the Thames tidal peak. There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. Consequence is low because pollution is likely to be detected quickly and effects are temporary and reversible. The width of the Thames as it passes the site location is > 900m meaning high dilution.	Permitted waste types do not include sludges or liquids. Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Leachate generated on the pad is treated by the landfill leachate treatment plant. There is no fuel stored on site. The site has a hold up capacity of 1138m^3 before overtopping to the south. This volume is sufficient to contain fire water generated by a major incident. Site inspections and defect reporting system in place.	Low

As above	As above. Indirect run-off via the soil layer	All surface waters close to and downstream of site.	Chronic effects; deterioration of water quality	High	Medium	Medium	There is a high potential for contaminated rainwater run-off from waste operations outside especially during heavy rain. Consequence is medium because pollution may take loner to detect. The width of the Thames as it passes the site location is > 900m meaning high dilution.	As above.	Low
As above	Transport through soil/groundwater then extraction at borehole.	Groundwater	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Low	Medium	Medium	Leachate generated from wood recycling activities is likely to be very weak. Consequence is medium because pollution may continue for a long time before it is detected. The site is 2700m from the nearest source protection zone (SPZ 3).	Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Leachate generated on the pad is treated by the landfill leachate treatment plant. Site inspections and defect reporting system in place.	Low
Any	Any	Protected sites - European sites and SSSIs protected species/habitats and other nature conservation sites.	Harm to protected site through dust emissions, or smothering.	Low	Medium	Low	Wood recycling activities may cause harm due to emissions of particulates which could accumulate in protected habitats. The wood recycling activity is located > 600m form the closest SSSI (Inner Thames Marshes) to the north west. There is a LNR 1450m to the north east and a scheduled ancient monument 4250m to the south east. All other ecological / heritage receptors are > 5000m from the facility.	The likelihood of impact to these sites is low, no additional controls required above those in place for human health receptors.	Low
- RDF transfer and storage -									
Releases of particulate matter (dusts).	Air transport then inhalation.	Local human population.	As above.	Low	Medium	Low	RDF bales arrive to the site wrapped and are not unwrapped at any stage (other than in an emergency). Permitted waste types do not include dusts, powders or loose fibres and this is managed through waste acceptance procedures. The site is remote from residential receptors the closest being 1.5km. The closest receptors are medium sensitivity commercial / industrial receptors. Prevailing wind is to the north east across open landfill for > 500m.	RDF arrives wrapped in plastic and remains wrapped during storage and dispatch. There is no shredding of RDF. Daily yard cleaning. Waste acceptance checks. A cleaning rota is in place to manage dust and debris. Deep clean takes place a minimum of twice per annum and includes removal of waste from the area being cleaned and hosed down. Regular maintenance of all hardstanding. All loads of waste entering and exiting the site will be sheeted or otherwise contained. Speed restrictions on site. Every load tipped has visual inspection with clearly defined acceptance criteria. Waste to be stored within bays or on hardstanding.	Low

								Visual inspection of dust levels on a daily basis.	
As above.	Air transport then deposition.	Local human population.	Nuisance - dust on cars, clothing etc.	Low	Medium	Low	As above.	As above.	Low
Litter.	Air transport then deposition	Local human population, livestock and wildlife.	Nuisance, loss of amenity and harm to animal health	Low	Medium	Low	RDF bales arrive to the site wrapped and are not unwrapped at any stage (other than in an emergency). The location of the site away from areas where visual amenity could be impacted. Established operations do not result in emissions of this type.	RDF arrives wrapped in plastic and remains wrapped during storage and dispatch. There is no shredding of RDF. Waste acceptance checks. Routine visual inspections and housekeeping.	Low
Waste, litter and mud on local roads.	Vehicles entering and leaving site.	Local human population.	Nuisance, loss of amenity, road traffic accidents.	Low	Medium	Low	The road network entering and leaving and surrounding the site is used for non domestic access to the VES Integrated Waste Management Facility and adjacent industrial estate therefore sensitivity is lower than residential.	Regular maintenance of hardstanding, Routine housekeeping. Sheeting / containment of vehicles containing waste. Vehicular speed restrictions.	Low
Odour	Air transport then inhalation.	Local human population.	Nuisance, loss of amenity.	Low	Low	Low	Baled and wrapped RDF no longer releases emissions to the atmosphere as it is contained within the plastic wrap. The source odour potential is low and the materials are unlikely to give rise to noticeable off site emissions. The remote location of the site, low sensitivity of surrounding receptors and direction of the prevailing wind means off site impacts from any low concentration fugitive odours are unlikely.	RDF arrives wrapped in plastic and remains wrapped during storage and dispatch. There is no shredding of RDF. The main control measure in ensuring that there are no potential releases of odour is ensuring that the bales are sufficiently wrapped. Any bales with a breach in the wrap will be rewrapped.	Low
Noise and vibration.	Noise through the air and vibration through the ground.	Local human population.	Nuisance, loss of amenity, loss of sleep or harm.	Medium	Low	Low	Noise generating activities include intermittent mechanical handling. Distance attenuation alone to the nearest residential receptor is > 60 dB. No activities carried out are likely to cause any perceptible vibration beyond the operational envelope of associated plant and machinery.	PPM regime in place for all equipment. All plant and machinery will be maintained in accordance with the manufacturers specification. Regular maintenance of hardstanding to prevent uneven surfaces. Speed limits are in place for vehicle movements. Daily checks of equipment for abnormal operation. Routine qualitative noise monitoring. All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.	Low
Scavenging animals and scavenging birds.	Air transport and over land.	Local human population.	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Low	Medium	Low	RDF bales arrive to the site wrapped and are not unwrapped at any stage (other than in an emergency).	A proactive pest control contract is in place. Routine site inspections by the site operations team identify the presence of and any change in numbers of scavenging animals and birds and feedback is provided to the contractor as appropriate.	Low

Flooding of site.	Flood waters.	Local human population and local environment.	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Low	Medium	Medium	Waste types are non-hazardous and therefore should not be a high risk. There are no surface water features within the site boundary. Leachate formation would be minimal however there could be some residual particulates and the bulk of the material will be buoyant.	The RDF storage / transfer process is in a 'Flood Zone 3' but is protected up to a 0.1% AEP by local flood defenses along the Thames. There is no risk of flooding from any reservoirs. Flood maps show some limited surface water flooding to the western boundary of the site however this reflects the fall in levels to drainage and the LiDAR based maps to not take into account water movement through drainage infrastructure.	Low
Fire risk from stockpiles,arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of air,water or land.	Medium	High	High	RDF wastes are flammable.	The facility will be operated in accordance with a Fire Prevention Plan which includes limits on maximum pile sizes, separation distances and storage conditions as well as access to sufficient fire fighting water.	Low
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	As above.	Local human population and local environment.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	Low	Low	Low	As above	As above.	Low
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All surface waters close to and downstream of site.	Acute effects; oxygen depletion, fish kill and algal blooms	Low	Medium	Low	The boundary of the waste storage pad is 40m from the Thames tidal peak. Consequence is low because pollution is likely to be detected quickly and effects are temporary and reversible. The width of the Thames as it passes the site location is > 900m meaning high dilution.	Permitted waste types do not include sludges or liquids. Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Leachate generated on the pad is treated by the landfill leachate treatment plant. There is no fuel stored on site. The site has a hold up capacity of 1138m^3 before overtopping to the south. This volume is sufficient to contain fire water generated by a major incident. Site inspections and defect reporting system in place.	Low
As above	As above. Indirect run-off via the soil layer	All surface waters close to and downstream of site.	Chronic effects; deterioration of water quality	Low	Medium	Medium	Consequence is medium because pollution may take longer to detect. The width of the Thames as it passes the site location is > 900m meaning high dilution.	As above.	Low

As above	Transport through soil/groundwater then extraction at borehole.	Groundwater	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Low	Medium	Low	RDF bales arrive to the site wrapped and are not unwrapped at any stage (other than in an emergency). Consequence is medium because pollution may continue for a long time before it is detected. The site is 2700m from the nearest source protection zone (SPZ 3).	Activities take place on a sealed drainage system comprising a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the south western corner of the slab. A raised kerb of minimum 100mm prevents any water leaving the site. Leachate generated on the pad is treated by the landfill leachate treatment plant. Site inspections and defect reporting system in place.	Low
Any	Any	Protected sites - European sites and SSSIs protected species/habitats and other nature conservation sites.	Harm to protected site through dust emissions, or smothering.	Low	Medium	Low	RDF bales arrive to the site wrapped and are not unwrapped at any stage (other than in an emergency). The wood recycling activity is located > 600m form the closest SSSI (Inner Thames Marshes) to the north west. There is a LNR 1450m to the north east and a scheduled ancient monument 4250m to the south east. All other ecological / heritage receptors are > 5000m from the facility.	The likelihood of impact to these sites from RDF storage is low, no additional controls required above those in place for human health receptors.	Low