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Environmental Risk Assessment

v2.0

Environmental and sustainability solutions provided to

Waste Organics (Leeds) Limited

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1.0 INTRODUCTION

This Environmental Risk Assessment has been produced in support of a permit variation application for Waste Organics (Leeds) Limited (hereon referred to as 'Waste Organics'), who operate a waste transfer with treatment site with an annual throughput of up to 249,999 tonnes. The permit variation being sought is to add additional waste codes, suitable for supply into AD facilities, to the permit and to add a waste treatment activity to allow the treatment of biodegradable organic wastes to produce a "soup" of blended wastes suitable for feedstock into AD facilities. This document provides a full environmental risk assessment for the waste transfer with treatment activities.

1.1 Site Address

Waste Organics (Leeds) Limited
Waste Treatment Station
Knowsthorpe Road
Leeds
LS9 0NX

1.2 Operational Location

Site Grid Reference: Easting 433155, Northing 431765

1.3 Reason for Application

Waste Organics are seeking to vary the environmental permit to allow them to add additional waste codes, suitable for supply into AD facilities, to the permit and to add a waste treatment activity to allow the treatment of biodegradable organic wastes to produce a "soup" of blended wastes suitable for feedstock to AD facilities.

1.4 Assessment Process

The Guidance "Risk assessments for your environmental permit" produced by the Environment Agency and DEFRA outlines a five-step process for assessing the site activity and the risk to local amenity to successfully produce an Environmental Risk Assessment:

1. Identify and consider risks for your site, and the sources of the risks.
2. Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.
3. Identify the possible pathways from the sources of the risks to the receptors.

4. Assess risks relevant to your specific activity and check they're acceptable and can be screened out.
5. State what you'll do to control risks if they're too high.

This risk assessment will identify the potential human and environmental impacts that could result from the activity of this energy from waste plant. Risk assessments will be carried out for the following hazards:

- Odour;
- Fugitive emissions (including dust and pests);
- Visible plumes;
- Noise;
- Fire.

This risk assessment will identify people or parts of the environment that could be harmed by the activity and carry out risk assessments for these potential sources. Assessment of potential accidents at the facility and the consequential effects on sensitive receptors have been accounted for in a separate Accident Management Plan.

2.0 ASSESSMENT

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Fugitive emissions of dust, fibres and particulates.	Deposition from air and inhalation.	Local Human Population.	Med	High	Med	Permitted waste types do not include wastes which consist solely of dusts, powders or loose fibres. Breaking, crushing and screening of waste in the aggregate processing area takes place outside, in the southern portion of the site. All other waste processing takes	• The site will be kept clean and dust suppression will be used on the site when required. • Most material will be processed inside a building. • In dry weather, site access and internal roads will be swept manually or mechanically when necessary. • Road sweeper present on site at all times. • Dust suppression in form of Bauer 62 sprayjets fixed to buildings and elevated steel posts to attenuate dust generated by traffic movement and sorting of wastes within the buildings. • Surface of aggregate stockpiles consolidated by track-compaction using machinery.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
						place within a building. New waste codes added to the permit include liquid and solid biodegradable organic wastes. Treatment of these waste types take place within a building. Activities on site have the potential to produce dust and so a medium magnitude risk is estimated.	• A rolling profile will be maintained by press-chamfering the flanks of the piles to reduce free dissipation of windblown dust. • Mobile swivelling water spray units installed at aggregate processing area. • Mechanical processing takes place within areas bounded by stockpiles, such that the stockpiles act as a barrier. • Daily site inspections. • The site has a Dust Action Plan and Fugitive Emissions Management Plan. • Food wastes possess high moisture contents and not prone to dust generation.	
Airborne particulates generated during the physical	Inhalation and ingestion.	Human Health	Low	High	Med	Potential for frequent and long-term exposure to sensitive	• The site will be kept clean and dust suppression will be used on the site when required. • In dry weather, site access and internal roads will be swept	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
treatment of Non-Hazardous Waste: treatment of aggregate wastes and by movement of vehicles onsite.						receptors (apart from licence holder/operator and employees). Breaking, crushing and screening of waste in the aggregate processing area takes place outside, in the southern portion of the site. All other waste processing takes place within a building.	manually or mechanically when necessary. • Road sweeper present on site at all times. • Dust suppression in form of Bauer 62 sprayjets fixed to buildings and elevated steel posts to attenuate dust generated by traffic movement and sorting of wastes within the buildings. • Surface of aggregate stockpiles consolidated by track-compaction using machinery. • A rolling profile will be maintained by press-chamfering the flanks of the piles to reduce free dissipation of windblown dust. • Mobile swivelling water spray units installed at aggregate processing area. • Mechanical processing takes place within areas bounded by stockpiles, such that the stockpiles act as a barrier. • Daily site inspections.	

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• The site has a Dust Action Plan and Fugitive Emissions Management Plan.	
Airborne dust particulates.	Deposition from air.	Human Health	Med	Low	Med	Potential for frequent and long-term exposure to sensitive receptors (apart from permit holder/operator and employees).	• The site will be kept clean and dust suppression will be used on the site when required. • Most material will be processed inside a building. • Additional waste codes shall have high moisture contents. • In dry weather, site access and internal roads will be swept manually or mechanically when necessary. • Road sweeper present on site at all times. • Dust suppression in form of Bauer 62 sprayjets fixed to buildings and elevated steel posts to attenuate dust generated by traffic movement and sorting of wastes within the buildings.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							• Surface of aggregate stockpiles consolidated by track-compaction using machinery. • A rolling profile will be maintained by press-chamfering the flanks of the piles to reduce free dissipation of windblown dust. • Mobile swivelling water spray units installed at aggregate processing area. • Mechanical processing takes place within areas bounded by stockpiles, such that the stockpiles act as a barrier. • Daily site inspections. • The site has a Dust Action Plan and Fugitive Emissions Management Plan.	

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Noise from machinery.	Air transport.	Human Health	Med	High	Med	Neighbouring residents and businesses often sensitive to noise and likely to complain. Breaking, crushing and screening of waste in the aggregate processing area takes place outside, in the southern portion of the site. All other waste processing takes, including use of attritors and blending of waste place within a building.	• Machinery maintenance schedule. • All machinery is designed to work efficiently and not produce excessive noise. • All plant and equipment is fitted with engine silencers. • All machinery is switched off when not in use. • Roadside aggregate stockpiles help to baffle transmission of noise generated by aggregate treatment facilities. • Enclosed structure of buildings reduces propensity for significant carriage of noise beyond site boundary. • Reversing bleepers set to a level to minimise distraction at adjacent properties without compromising safety.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• The location of the site on a large industrial estate means the likelihood of causing noise nuisance is unlikely. • Fugitive Emissions Management Plan. • Appropriate PPE provided to staff.	
Fugitive releases of litter.	Air transport.	Human Population	Med	Low	Med	Local businesses sensitive to litter and likely to complain.	• Wastes are inspected on arrival and turned away if contamination levels exceed maximum permissible levels. • Soil/aggregate processing operation shall not accept wastes with significant presence of paper, plastic etc. • Enclosed construction design of buildings on site shields the stored waste from wind and therefore minimises the external release of windblown litter.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• Skips that contain light materials such as paper and plastic are sheeted for transport and if held on site. • Daily inspection of site and removal of litter. • Food waste packaging is removed with purpose designed equipment wholly within the building.	
Fugitive releases waste, litter and mud on local roads.	Vehicles entering and leaving site.	Human Population	Med	Med	Med	Local residents often sensitive to mud on roads and likely to complain.	• Daily inspection of site roads and surrounds for debris. • No domestic residences within 1000m of the site • Wheel wash facilities are in place within the site buildings to prevent the tracking of solid biodegradable organic and liquid wastes off site. • Access road swept when required.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Odour from recovery operations.	Air transport.	Human Population	Low	Med	Med	Local businesses and residents often sensitive to odour and likely to complain if unpleasant odour.	• Excessively odorous waste is not accepted onto site. • Solid biodegradable organic waste processing area is located within a partitioned section of the waste treatment building. An air extraction providing at least 3 air exchanges per hour is in place in this portion of the building. The air removed from the building is directed through an odour control unit (series of carbon filters) before being released to atmosphere via a chimney stack. • Liquid waste storage and processing tanks and “soup” loading points are served by the same odour control unit as the solid waste reception and treatment building before the air	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							is released to atmosphere via the chimney stack. • Liquid sumps are covered with solid lids when not in use to prevent fugitive releases of air. • Wheel wash facilities are in place within the solid and liquid biodegradable organic waste treatment areas to prevent tracking of waste off site. • Sprayjets can be used to apply deodorising agents outside. • Housekeeping and removal of spillages and debris. • Daily odour monitoring on site, around the site boundary and investigation of incidents. • Complaints procedure and investigation. • The site operates with an approved Odour Management Plan.	

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Fire.	Spontaneous combustion of dry materials.	Site operators and assets	Low	High	Medium	Lots of different waste types may be accepted on to site with differing levels of combustibility.	• The site operates with an approved Fire Prevention Plan. • Fire extinguishers are located across site to fight fires in waste treatment buildings, site office, weighbridge and in vehicles and machinery. • Hot loads deposited in isolation and manually checked before processing is sanctioned. • Fire hydrant located immediately outside the site. • New waste codes are either liquid or solid biodegradable organic waste with high moisture contents. Water / leachate to be added to solid waste to become pumpable thus increasing the moisture content.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Smoke from a fire.	Air transport.	Human Population	Low	Med	Med	Local businesses often sensitive to odour and likely to complain. Fires can be deliberate or accidental.	• Permitted activities do not authorise burning of waste. • Accident Management Plan details consequences and control of fires. • Fire suppression equipment located on site. • Fire Prevention Plan.	Low
Scavenging birds and animals.	Air transport and over land.	Human Population	Low	Low	Low	Scavenging birds and vermin attracted to site and affecting neighbouring businesses.	• No history of significant problems with rodents or flies. • EMS details management of pests. • Biodegradable organic waste processing takes place within a building. • Visual inspection for signs of pests is carried out as part of site walkover. • Sprayjets can be used to apply insecticide reagents if required.	Very Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• Contractual arrangement with professional pest controller for regular checks can be arranged if required. • Housekeeping.	
Pests e.g. flies.	Air transport and over land.	Human Population	Low	Low	Low	Insect pests can multiply on some permitted waste types particularly in summer months.	• No history of significant problems with rodents or flies. • Biodegradable organic waste processing takes place within a secure building. • Visual inspection for signs of pests is carried out as part of site walkover. • Sprayjets can be used to apply insecticide reagents if required. • Contractual arrangement with professional pest controller for regular checks can be arranged if required. • Housekeeping.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
All on-site hazards: wastes; machinery and vehicles.	Direct physical contact.	Human population. Local environment.	Med	High	High	Delivery vehicles and mobile plant actively moving around the site.	• No public access to the site. • CCTV inside buildings and covering the areas of the sites situated in the yard. CCTV has sensors that can link to a security company. • Palisade fencing around the perimeter of the site. • Signs onsite outlining risks. • Wastes will be accepted under the supervision of a technically competent manager. • Wastes will be stored within designated waste storage area. • Traffic management flows. • Reversing sounds on vehicles and mobile equipment.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Leachate with high organic content	Surface runoff	Surface Water	Med	Low	Med	Waste types that could generate leachate are non-hazardous.	• All leachate generating material stored inside on impermeable concrete with a sealed drainage system. • All leachate generated inside the building is captured for re-use in the “soup” making process. • Accident Management Plan and emergency procedures outline a methodology for loss of site liquid wastes/leachate to surface waters.	Low
Leachate from material with high organic content.	Direct surface run off from site pad.	Surface Water	Med	Med	Med	Waste types that could generate leachate are non-hazardous. Potential leachate spill into foul sewer.	• All material stored on an impermeable pavement with sealed drainage system. • Rainwater falling on the treatment and storage areas is collected in the drainage infrastructure for treatment via an interceptor prior to discharge to foul sewer.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• All leachate generating material stored inside on impermeable concrete with a sealed drainage system. • Fugitive Emissions Management Plan. • Accident Management Plan.	
Leachate with high organic content.	Permeate flow through soil.	Groundwater	Low	High	High	Site located outside groundwater source protection zones. Site locate outside Drinking Water Safeguard Zones (Surface and Groundwater) Site located outside a Drinking Water Protected	• Impermeable pavement. • Sealed drainage system. • Rainwater falling on the treatment and storage areas is collected in the drainage infrastructure for treatment via an interceptor prior to discharge to foul sewer. • Fugitive Emissions Management Plan.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
						Area (Surface Water)		
Spillages of liquids.	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.	Med	High	High	Liquid waste accepted onto and processed on site. All surface water on site will be discharged to combined sewer under discharge consent.	• Impermeable concrete surface with falls towards drains prevents run-off from flowing off site. • All surface waters generated on site are captured via surface drains points and the site's sealed drainage system. • All surface water generated on site pass through a 3-stage petrol/oil interceptor prior to discharge into combined sewer. • Liquid storage tanks in the tank farm are contained within a	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							specific bund to prevent failure of tanks resulting in discharge of waste off-site. The separate water tank is a self-contained tank constructed of glass reinforced plastic (GRP). • Fuel tanks are double skinned or held within leakproof bunds capable of retaining a volume that is 110% of the largest container. • Spill kits and drain cover mats present on site for use if a spill is detected. • Routine inspection and maintenance of fuel tank and site surface. • The site drainage system is detailed in the Drainage Management Plan.	

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
							• Emergency procedures are outlined in the Accident Management Plan. • Staff training on spillages.	
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by run off or via drainage system.	Human population and environment.	Med	Med	Med	Extremely rare – appropriately stored waste, fuel and limited sources of ignition. Waste accepted onto site has low flammability. Site also has Fire Prevention Plan in place. Waste fires are not common but approximately 300 fires per year	• Permitted activities do not authorise burning of waste. • Continued acceptance of low flammable wastes on the allowable input list. • Segregation of waste types on site. • Fire Prevention Plan. • Accident Management Plan. • Complaints procedure and investigation. • Daily site inspection and housekeeping measures. • Waste is stored in designated storage bays.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
						are linked to waste activities. Impact on health and amenity can be significant for many days or weeks.	• Monitoring of 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 run-off to or via drainage system.	Human population and local environment	Med	High	High	Proximity of sensitive receptors.	• No public access to the site. • CCTV inside buildings and covering key areas of site situated in the yard. CCTV has sensors thatlink to a security company. • Fire Prevention Plan. • Palisade fencing around the perimeter of the site. • Accident Management Plan.	Low

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Risk Management**	**Residual Risk**
Any	Any	Protected sites - European sites and SSSIs	Med	High	High	Waste operations may cause harm to and deterioration of nature conservation sites.	• There are no SSSIs within 7km of the site.	Very Low
P = Possibility C = Consequence M = Magnitude								

3.0 ACCIDENT MANAGEMENT

3.1 Emergency Contacts

Emergency Services:	999
Local Police:	101
Fire Brigade:	West Yorkshire Fire and Rescue Service – 01274 682311
Environment Agency Hotline:	0800 807 060
Health & Safety Executive:	0845 345 9905
Electricity Supplier:	F&S Energy
Local Authority:	Leeds City Council – 0113 222 4444
Waste Disposal Contractor:	Gegan Environmental Ltd
Gas Supplier:	N/A
Sewerage Undertaker:	Yorkshire Water
Fuel Supplier:	Gegan Environmental Ltd

3.2 Out of Hours

Site Manager:	Alison Dring

3.3 Environmental Accident Management Plan

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Consequences**	**Actions to be taken**
Plant Failure (Hydraulic Leaks, Damaged equipment)	Potentially polluting liquids leak into the building where the plant is housed or onto the hard surfaced ground outside.	Environment	Low	Med	Low	Low - Very little likelihood of occurrence. All equipment subject maintenance regime. Site has a sealed drainage system.	Potentially polluting liquids flow onto hard surfaced area of facility.	• Stem leak if possible. • Inform site manager. • Isolate spill using spill control kits or adsorbent material. • Monitor leak and prevent any liquid from entering drains. • Drain any contaminated tanks, clean any spillage and dispose of waste as appropriate. • Monitor external areas to ensure no further contamination. • Record the incident. • Inform Local Authority or Environment Agency if necessary. • Review Operations and Management System.

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Consequences**	**Actions to be taken**
Severe Weather	Flooding Wind damage Ice/frost	Plant & Equipment Site Conditions	Low	Med	Low	Low - Flooding unlikely due to location of site and existing drainage system already present on site. All plant securely fixed with some housed inside a building.	Damage to plant and equipment	• Cease operations if required. • Assess damage. • Mitigate any pollution caused. • Inform site manager. • Inform Local Authority or Environment Agency if necessary. • Repair damage. • Record incident.
Arson/ Vandalism	N/A	Plant & Equipment Site Conditions	Low	Med	Low	Low - Site to be as secure as possible. all plant locked when not manned. All doors and gates locked outside working hours. Security checks/supervision of people entering the site is carried out during normal working hours.	Damage to equipment Fire Litter	• Assess damage. • Mitigate any damage/pollution caused (following fire plan). • Inform site management. • Inform Police. • Inform Local Authority if required. • Record incident. • Review site security.

Pollutant Model			Judgement				Action	
Source	**Pathway**	**Receptor**	**P**	**C**	**M**	**Justification of Magnitude**	**Consequences**	**Actions to be taken**
Fire	Spread from source of ignition	Site buildings Local Residents	Low	Med	Med	Med - No ignition sources permitted near flammable material. Fuel must be stored in a way to prevent fire. Appropriately stored waste and limited sources of ignition. Fuel is stored in a dedicated double bunded tank capable of storing 110% of the tank's volume.	Fire could spread to site buildings and potentially to neighbouring sites, subject to wind direction and strength. Potential for severe damage to property and potential loss of life from fire/smoke inhalation.	• Raise alarm on site. • Call 999. • Ensure personnel are alerted evacuated and accounted for from danger area, following the fire evacuation plan. • If safe, switch off electricity/fuel supplies. • Inform site management. • Liaise and follow instructions of emergency team making them aware of any hazards on site. • Any fire water treated/disposed of appropriately.
P = Possibility C = Consequence M = Magnitude								