

# Attachment E

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## *Emissions*

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**Attachments in this Section include:**

- E.1 Emissions to Atmosphere**
- E.2 Emissions to Surface Waters**
- E.3 Emissions to Sewer**
- E.4 Emissions to Groundwater**
- E.5 Noise Emissions**
- E.6 Environmental Nuisances**

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## Attachment E

An emission is "the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the installation into the air, water or land" as defined by the IPPC Directive (2008/1/EC).

As with all developments, there is a potential for emissions from the facility. However best available technology and techniques have been put in place at OTCL to eliminate or minimise all potential impacts.

### E.1 Emissions to Atmosphere

#### E.1.2 Odour

The potential impact of the proposed development on odour levels in the area are described in detail in Section 3.4 of the EIS. In summary odour is the most significant potential environmental emission associated with the proposed development. An Odour Model was carried out by RPS and this determined that there would be no impact on the surrounds of the facility. A copy of the Odour Model is included in Section 3.4 of the EIS along with details of mitigation measures taken and proposed by OTCL. Odour will be monitored on a daily basis by facility staff. If odour is detected at the facility corrective and or preventative measures will be put in place as necessary.

#### E.1.3 Bioaerosols

The composting of biodegradable waste involves a microbiological process where microbes (for example, bacteria and fungi) proliferate and grow by using the nutrients in the compost for food. The presence of bacteria and fungi in high concentrations are fundamental to the composting process.

Whenever composting materials are mechanically processed, for example during the shredding, turning and screening processes, these micro-organisms can be aerosolised, forming what is termed a bioaerosol.

Actively managed, medium to large scale composting controls the activity of indigenous micro-organisms commonly present in the soil that naturally decay, such as fallen leaves. Therefore, the microbial components of bioaerosols generated during the composting process contain many of the same micro-organisms that are commonly isolated from "normal" outdoor air. The main difference is the scale at which they are present. The handling of large quantities of compost potentially can lead to the release into the air of large quantities of the bacteria, fungi and actinomycetes and their components, found in compost, as a bioaerosol in uncontrolled conditions.

The composting process generates heat, so any human pathogens present in the raw materials, such as coliform bacteria from faecal material will be killed off during the composting process.

Bioaerosols of concern during composting consist of a range of micro-organisms (Actinomycetes, bacteria, fungi) and organic constituents of microbial and plant origin. Focus to date has been on *Aspergillus fumigatus* (AF), fungus and bacteria.

*Aspergillus fumigatus* is particularly important in the composting process due to its capacity to degrade cellulose and hemicelluloses. Its optimum growth temperature is 37°C and rapid growth can occur between 30 and 52°C. It is therefore likely to be present in significant numbers in compost, having increased from background numbers in the optimum growth conditions. However, its presence is also an important consideration from a human health viewpoint. It is an allergenic fungus and is an opportunistic pathogen which can cause aspergillosis in immunocompromised individuals.

O'Toole Composting facility is designed to minimise the impact of bioaerosols on worker health and safety and off-site receptor health and safety. It is an enclosed facility which has adequate ventilation and air exchanges. All composting is carried out indoors. All air extracted from the composting building is biofiltered. Therefore, the risk to human health from bioaerosols is vanishingly low for persons outside the building.

Annual monitoring of bioaerosols levels in particular, in relation to monitoring for *Aspergillus fumigatus* (AF) will be carried out at the facility. The results of this monitoring will give an indication of the background levels of AF which can then be compared to the results of the annual monitoring requirements of this fungus in accordance with the Licence Conditions.

## E.2 Emissions to Surface Waters

Surface water runoff is diverted to the surface water discharge point which flows into the stream at the eastern boundary of the facility. This stream flows into the Burren River. Sampling is carried out at this discharge point. Results of surface water sampling that were conducted on the 1st of December 2011 and the 20th of January 2012 are included as part of this attachment.

Refer to Tables E.2(i) and E.2(ii) of the application form and Section 3.2 of the EIS.

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### **E.3 Emission to Sewer**

There are no emissions to sewer from this facility. All foul water produced at the facility from the facility offices is diverted to the septic tank on-site. Attachment B.4 of this application details the maintenance report on the septic tank.

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#### **E.4 Emissions to Groundwater**

There will be no direct or indirect releases to groundwater from this facility. In accordance with Articles 3,4,5,6 and 7 of Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution by certain danger substances there will be no release of any pollutants as listed in List 1 of this Directive.

All waste water runoff from the composting process is diverted to underground leachate sumps which store the waste water until it is reused in the composting process. There is no discharge from this sump. Any excess wastewater from the process is tankered offsite to a waste water treatment facility. The facility is underlain with granite bedrock which acts as a poor aquifer, further reducing the potential of penetration of discharges to groundwater sources.

Groundwater monitoring was carried out on the 5th of January 2012. Test results have been included as part of this attachment. For further information on groundwater protection refer to Section 3.2 of the EIS.

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## E.5 Noise Emissions

Due to the nature of activities there is a potential for noise emissions to be caused from the facility. Noise monitoring surveys are conducted on an annual basis at the facility. Results from these noise monitoring surveys indicate that the noise levels in the immediate vicinity of the site and at the nearby sensitive receptors are mainly dominated by traffic noise from the adjacent N80 National Road. The results indicate that the plant machinery and operation practices within the facility do not significantly contribute to the local noise environment and or cause undue disturbance to nearby sensitive locations.

The primary source of noise at the facility will be from vehicles delivering and transferring waste to and from the facility. The volume of on-site traffic is less than 1% of the volume of traffic using the N80 National Road on a daily basis. In addition to this all on-site plant and machinery are operated within the waste transfer building or the composting/maturation shed. Therefore it can be concluded that the noise emissions caused from the operation of the facility will be negligible on the surrounding receptors. Results of the noise monitoring surveys conducted in 2010 and 2011 are included as part of this attachment.

Further information on noise and traffic is detailed in Section 3.6 of the EIS.

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## E.6 Environmental Nuisances

The following is a list of potential environmental nuisances that may occur as a result of the on-site activities. However due to BAT and on-site environmental management practices it is unlikely that any environmental nuisance would be caused. Monitoring of potential environmental nuisances are addressed in the environmental management system for the facility as included in Attachment C2 of this application.

### E.6.1 Bird Control

There is potential for birds to be attracted to waste facilities where there is an available food source for them to scavenge. Waste handling procedures on-site will be such that the waste is exposed only within the composting building or waste transfer building. All waste arriving to the facility will be tipped within the sheds. Shed doors will remain closed as much as reasonably practicable to prevent access of birds to the waste. Composting material is stored within the composting tunnels. Waste may be exposed in the proposed CA facility at the site. Only dry wastes such as wood, plastics and metals will be temporarily stored in open skips. Any receptacles at the CA site for the temporary storage of putrescible waste will be in a closed skip or bin or in an enclosed compactor so that a food source is not available to birds or other vermin. The facility is inspected on a weekly basis (or as required by Conditions of the waste Licence) to ensure that birds at the facility are not giving rise to nuisance on-site.

### E.6.2 Dust Control

Waste handling operations on the site ensure that all tipping of waste occurs within the buildings where possible and any dust emissions are therefore contained. Dust curtains will be installed on the entry/exit points to the proposed shed to minimise fugitive dust emissions. The negative extraction odour control with bio filter unit will result in the removal of dust particles from the air in the building before it is released through the bed or stack. In dry weather the yard will be sprayed with water and as when required to minimise airborne dust nuisance. OTCL will implement additional dust monitoring and control procedures at the facility as per the monitoring requirements of the EPA licence. Dry dusty materials at the CA Site will be dampened down where necessary.

### E.6.3 Fire Control

Safe systems of work and the no-smoking policy at the facility except in the designated smoking area ensure that the potential for a fire occurring at the facility are minimised. A fire alarm system is installed in both of the waste buildings and in the site offices. Designated fire wardens have been appointed on-site and are familiar with the fire evacuation procedure.



It is proposed to provide a new 20,000 holding tank or connection to water mains specifically for fire fighting purposes. Appropriate fire extinguishers as recommended by a specialist supplier to deal with types of fire sources that may be encountered on site have been provided at the facility. Regular inspections are carried out and any missing, damaged, defective or out of date appliances replaced as a priority.

A fire safety certificate for the facility has been granted and is included as part of this attachment. Plant, machinery and electrical systems will be maintained in good working order at the facility to minimise the risk of fire. Explosive or hazardous flammable waste will not be accepted at the facility. Any hazardous wastes segregated during the waste inspection process will be quarantined in a designated and safe area and removed offsite as soon as possible.

#### **E.6.4 Litter Control**

It is not expected that litter will give rise to nuisance at or surrounding the facility. All wastes delivered to the facility and all loads being transferred from the facility will be appropriately covered to ensure the no fugitive litter is caused from the transportation of waste. Waste will be stored within the waste processing buildings and any wastes at the CA site that could be potentially windblown to cause litter will be stored within closed containers. The facility and immediate surrounds will be inspected on a daily basis. Any litter that is identified will be cleaned immediately and no later than 10am the following morning after it first being discovered. Any litter that is identified in surround lands will be cleaned once permission to enter lands has been received by the landowner.

#### **E.6.5 Traffic Control**

Access and egress from the facility is via a private site entrance located off a local roadway Jocks Lane, that runs perpendicular to the N80 roadway. The site entrance is of sufficient distance to the weighbridge that any vehicles entering the facility will be queuing within the site boundary. There will be no queuing on the public roadway. A speed limit of 10km/hour will be maintained on-site. A traffic impact survey was conducted on the 6th of January 2012. Results from this traffic impact survey show that the traffic generated by the development will constitute less than 1% of traffic on the N80, which is considered negligible impact and will not give rise to traffic nuisance.

#### **E.6.6 Vermin Control**

Designated bait stations are located throughout the facility. The facility is monitored on a weekly basis for the presence of vermin at the facility as outlined in the environmental management system for the facility as included in Attachment C.2 of

this application. It is not anticipated that there will be any vermin nuisance at the facility.

### **E.6.7 Road Cleansing**

Due to the nature and scale of activities on-site it is not expected to require any road cleansing. Vehicles exiting the waste composting building exit via a wheel wash. The entrance and exit of the facility is fully concreted, therefore it is not expected that mud be caused on the main roadway outside of the facility boundary. A portable power washer is available on-site which can be used for road cleansing in the event of mud giving rise to nuisance at the facility.

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