

Best Available Techniques (BAT) Reference Document for Waste Treatment (2018) Biological Treatment Plant

BAT 1. In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS). The scope (e.g. level of detail) and nature of the EMS (e.g. standardised or non-standardised) will generally be related to the nature, scale and complexity of the installation, and the range of environmental impacts it may have (determined also by the type and amount of wastes processed).

Condition 2.3 of the current licence specifies the scope of the EMS that must be implemented at the installation. In addition the installation is certified to ISO 14001.

BAT 2. In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below.

(a) Set up and implement waste characterisation and pre-acceptance procedures/

(b) Set up and implement waste acceptance procedures

Waste characterisation and pre-acceptance procedures are in place, as required by Condition 5.3 of the current licence and additional procedures will be prepared prior to the acceptance of the additional waste types. This will also satisfy the requirements of BAT 33, which applies to the biological treatment of waste.

(c) Set up and implement a waste tracking system and inventory

Condition 10.2 of the current licence requires KLL to maintain detailed records of each waste load accepted and dispatched from the installation.

(d) Set up and implement an output quality management system

KLL ensures that all outputs from the installation meet the input requirements of the facilities to which the materials are consigned.

(e) Ensure waste segregation

(f) Ensure waste compatibility prior to mixing or blending of waste

(g) Sort incoming solid waste

Upon arrival all wastes are inspected and then directed to designated processing/storage areas. Operational procedures will be prepared prior to the acceptance of the additional waste types to ensure that appropriate compatibility and blending requirements are implemented.

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BAT 3. In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see BAT 1).

The scope (e.g. level of detail) and nature of the inventory is generally related to the nature, scale and complexity of the installation, and the range of environmental impacts it may have (determined also by the type and amount of wastes processed).

An inventory of all emissions is included in the licence review application.

BAT 4. In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below:

- (a) Optimised storage location
- (b) Adequate storage capacity
- (c) Safe storage operation
- (d) Separate area for storage and handling of packaged hazardous waste.

KLL will prepare a storage plan for the Biological Treatment Plant before it is commissioned.

BAT 5. In order to reduce the environmental risk associated with the handling and transfer of waste BAT is to set up and implement handling and transfer procedures.

KLL has prepared handling and transfer procedures.

BAT 6. For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).

Not applicable as there are no emissions of treated wastewater to waters.

BAT 7. BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

The current licence (Schedule D) specifies the monitoring frequencies and standards that apply.

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BAT 8. BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

There are no current channelled emissions to air. The odour control system that will be provided in the Biological Treatment Plant will be a channelled emission to air and the monitoring requirements will be set in the revised IE licence.

BAT 9. BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given below.

Not applicable, as solvents will not be regenerated or treated at the installation.

BAT 10. BAT is to periodically monitor odour emissions.

The applicability is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

The current licence (Condition 8.13) requires weekly monitoring for odours. Monthly odour monitoring is also specified in Schedule D.10

BAT 11. BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and wastewater, with a frequency of at least once per year.

The annual consumption of water, raw material as well as the generation of residues and wastewater is monitored annually and reported in the Annual Environmental Report (AER).

BAT 12. In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan as part of the environmental management system (see BAT 1).

The applicability is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

An odour management plan has been prepared as required by Condition 6.10 of the current licence. The plan will be revised and updated before the Biological Treatment Plant is commissioned.

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BAT 13. In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below

- (a) Minimising residence times
- (b) Using chemical treatment
- (c) Optimising aerobic treatment

The Biological Treatment Plant design and proposed method of operation is intended to optimise the aerobic treatment stage and will also meet the requirements of BAT 36.

BAT 14. In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour BAT is to use an appropriate combination of the techniques given below.

The Biological Treatment Plant will be provided with an odour control system comprising the extraction of air and its treatment in an odour abatement unit.

BAT 15. BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below.

Not Applicable.

BAT 16. In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below.

Not Applicable.

BAT 17. In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1)

The applicability is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected and/or has been substantiated.

Not Applicable.

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BAT 18. In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below.

(a) Appropriate location of equipment and buildings

All waste handling and processing will be carried out on inside the Biological Treatment Plant.

BAT 19. In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water BAT is to use an appropriate combination of techniques.

All operational areas are paved. Rainwater from areas where there is the potential for contamination to occur is diverted to the foul sewer.

BAT 20. In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of techniques.

The current licence (Condition 3.16.6) requires the provision of a silt and oil interceptor on the surface water drain upstream of the existing attenuation lagoon

- **Table 6.1** BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body

Not applicable as there is no direct discharge of a treated wastewater to a receiving water body.

- **Table 6.2:** BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body

Not applicable, as there is no indirect discharge of a treated wastewater to a receiving water body.

BAT 21. In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the specified techniques as part of the accident management plan (see BAT 1)

- (a) Protection measures
- (b) Management of incidental /accidental emissions
- (c) Incident/accident registration and assessment system.

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The current licence (Condition 3) specifies the protection measures that must be provided and maintained at the site to prevent/control emissions in the event of the accident/incident. Condition 9 specifies the contingency arrangement that must be in place to manage incidents/accident and Condition 12.2 requires the completion of an Environmental Liability Risk Assessment that identifies and describes time impacts of accidents/incidents.

BAT 22. In order to use materials efficiently, BAT is to substitute materials with waste.

Not applicable

BAT 23. In order to use energy efficiently, BAT is to use both of the following techniques

(a) Energy efficiency plan

(b) Energy balance record

KLL has commissioned an energy efficient audit, as specified by Condition 2.5.1 of the existing licence.

BAT 24. In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging as part of the residues management plan (see BAT 1).

Some applicability restrictions derive from the risk of contamination of the waste posed by the reused packaging.

Given the nature of the activity opportunities to re-use packaging is restricted.

BAT 33. In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input.

The waste inputs will comprised MSW fines.

BAT 34. In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H₂S and NH₃, BAT is to use one or a combination of the techniques given below.

The odour control system that will be provided in the Biological Treatment Plant willl comprise a biofilter.

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BAT 35. In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below.

The proposed biological treatment facility will generate wastewater. The facility will be designed to maximise the reuse of wastewater within the process, such that it operates on a balanced process water requirement, with a slight 'water demand' possible.

Runoff from clean areas of the facility, such as the roof, marshalling yard and roadways external to the building will be collected and conveyed to the southern and existing surface water attenuation pond.

BAT 36. In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.

The Biological Treatment Plant design and proposed method of operation is intended to optimise the aerobic treatment stage

BAT 37. In order to reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps, BAT is to use one or both of the techniques given below.

Not applicable as all waste handling and processing will be carried out on inside the Biological Treatment Plant.

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