



Environment Agency Permit Variation

Composting BAT assessment

Chilbolton Composting Site

EPR RP3695HC

Dec 2023

Context: Permit variation application to increase tonnage throughput

Requirement	Criterion	Description	Compliance assessment	
Waste treatment BREF				
General BAT conclusions				
1	Overall environmental performance	EMS	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS)	ISO14001 certified EMS in place for the Facility.
2	Overall environmental performance	Waste pre-acceptance, acceptance and tracking	<p>In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below.</p> <ul style="list-style-type: none"> ● Set up and implement waste characterisation and pre-acceptance procedures ● Set up and implement waste acceptance procedures ● Set up and implement a waste tracking system and inventory ● Set up and implement an output quality management system ● Ensure waste segregation ● Ensure waste compatibility prior to mixing or blending of waste ● Sort incoming solid waste 	A system for pre-acceptance / acceptance, compatibility and inventory is in place at the Facility.
3	Overall environmental performance	Inventory of waste water and waste gas streams	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), that incorporates all of	Diffuse gas streams associated with biological treatment of green waste. All water generated from the composting activity is collected in lagoons and sent for off site treatment.

			the following features	
4	Overall environmental performance	Storage procedures	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below: <ul style="list-style-type: none"> • Optimised storage location • Adequate storage capacity • Safe storage operation • Separate area for storage and handling of packaged hazardous waste 	Activities take place on hardstanding with drainage directed to collection lagoons. The input type means compatibility issues are unlikely. Storage capacity is governed by pile sizes set out in a stand-alone Fire Prevention Plan 'FPP'.
5	Overall environmental performance	Handling and transfer procedures	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	Training of staff in waste handling is carried out. All stages of the composting process are documented including handling activities in accordance with a management system and PAS 100 QP.
6	Monitoring	Monitor key process parameters	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 pretreatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	There are no direct or indirect emissions to water, no monitoring is indicated.
7	Monitoring	Monitor emissions to water	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.	There are no direct or indirect emissions to water, no monitoring is indicated.
8	Monitoring	Monitor channelled emissions to air	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 channelled emissions associated with the composting activity.
9	Monitoring	Monitor diffuse emissions of organic compounds to air	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 to the subject Facility. The specified activities are not carried out as part of the composting activity.
10	Monitoring	Monitor odour	BAT is to periodically monitor odour emissions.	The applicability of this requirement is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated. The risk assessment and screening process carried out as part of this application as well as evidence from

				<p>existing sub installation operations does not indicate numerical assessment or monitoring of odour emissions.</p> <p>Periodic qualitative monitoring of odour emissions (sniff testing) is carried out as part of a suite of routine on site observations.</p>
11	Monitoring	Monitor water, energy and raw materials, and residues and waste water	BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.	Resource efficiency monitoring is carried out and reported within the Veolia group.
12	Emissions to air	Odour management plan	<p>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), that includes all of the following elements:</p> <ul style="list-style-type: none"> • a protocol containing actions and timelines; • a protocol for conducting odour monitoring as set out in BAT 10; • a protocol for response to identified odour incidents, e.g. complaints; • an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures. 	The Facility is operated in accordance with an Odour Management Plan.
13	Emissions to air	Reduce odour emissions	<p>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.</p> <ul style="list-style-type: none"> • Minimising residence times • Using chemical treatment • Optimising aerobic treatment 	Odour emissions are minimised by techniques including but not restricted to minimisation of residence times and optimisation of the aerobic treatment process.
14	Emissions to air	Reduce diffuse emissions to air	In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour.	The following techniques are in place. Dampening down; ensuring windrow turns are kept to a minimum; sympathetic handling of waste material and product; maintenance of equipment including mobile waste handling units, shredders and screeners and regular cleaning of waste treatment and storage areas.
15	Emissions to air	Minimise use of flaring	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 to the subject Facility. The specified activities are not carried out as part of the composting activity.

16	Emissions to air	Reduce emissions to air from flares	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 to the subject Facility. The specified activities are not carried out as part of the composting activity.
17	Noise and vibrations	Noise and vibration management plan	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), that includes all of the following elements: <ul style="list-style-type: none"> • a protocol containing appropriate actions and timelines; • a protocol for conducting noise and vibration monitoring; • a protocol for response to identified noise and vibration events, e.g. complaints; • a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures. 	The applicability of this requirement is restricted to cases where noise and vibration at sensitive receptors is expected and/or has been substantiated. The risk assessment and screening process carried out as part of this application as well as evidence from existing sub installation operations does not indicate numerical assessment of noise emissions. Operation in accordance with the cross cutting controls embedded within the EMS and wider management system are sufficient and a stand alone NMP should not be required. Periodic monitoring of noise emissions is carried out as part of a suite of routine on site observations.
18	Noise and vibrations	Reduce noise and vibration emissions	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.	See response to BAT 17.
19	Emissions to water	Optimise water consumption, reduce waste water and prevent or reduce emissions to soil and water	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 the techniques given below.	The option is available to recirculate leachate to control the moisture content of windrows.
20	Emissions to water	Waste water treatment	In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below.	There are no direct or indirect emissions to water. Waste water treatment takes place off site at a suitably licenced facility.
21	Emissions from accidents and incidents	Prevent or limit the environmental consequences of accidents and incidents	In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan (see BAT 1).	The site is operated in accordance with a business continuity plan.
22	Material efficiency	Substitute materials with waste	In order to use materials efficiently, BAT is to substitute materials with waste.	Not applicable to the subject facility. Non-waste raw material requirements are minimal.
23	Energy efficiency	Energy efficiency plan, energy	In order to use energy efficiently, BAT is to use both of the techniques given below.	Resource efficiency monitoring is carried out and reported within the Veolia group.

		balance record		
24	Reuse of packaging	Maximise reuse of packaging	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).	Not applicable to the subject facility. Packaging requirements are minimal.

General BAT conclusions for the biological treatment of waste

33	Overall environmental performance	Control waste inputs	In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input.	Pre-acceptance controls are in place.
34	Emissions to air	Biofilters etc	In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H ₂ S and NH ₃ , BAT is to use one or a combination of the techniques given below.	Not applicable to the subject Facility. There are no channelled emissions associated with the composting activity.
35	Emissions to water and water usage	Reduce waste water and water usage	In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below. <ul style="list-style-type: none"> ● Segregation of water streams ● Water recirculation ● Minimisation of the generation of leachate 	Moisture optimisation of the windrows ensures leachate generation is minimised. Segregation of surface water and leachate is not fully achievable due to the constraints of the layout of the existing site. There is no drainage works proposed as part of the variation.

BAT conclusions for the aerobic treatment of waste

36	Overall environmental performance	Control key waste and process parameters	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.	Monitoring of the following is carried out: <ul style="list-style-type: none"> ● waste input characteristics (e.g. C to N ratio, particle size); ● temperature and moisture content at different points in the windrow; ● aeration of the windrow ● windrow porosity, height and width.
37	Odour and diffuse emissions to air	Reduce diffuse emissions to air of dust, odour and bioaerosols	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.	The facility is situated in a very low sensitivity setting. The rectangular compost pad is orientated along a south west to northeast axis with its shortest dimension facing the wind. The windrows themselves are not routinely always formatted along the same axis however the orientation of the pad constrains the length of the windrows. The site is surrounded by mature trees.

				<p>Weather conditions are taken into account when turning. The site has an on site weather station. The system records data to a 30 min resolution including temperature, wind direction, windspeed, pressure, cloudcover, rainfall. The system can be accessed remotely from off site.</p>
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