Standard rules SR2008 No19 Version 6

The Environmental Permitting (England & Wales) Regulations 2016

The anaerobic digestion of non-hazardous sludge at a waste water treatment works, including the use of the resultant biogas

Part A installation – biological treatment capacity exceeding 100 tonnes per day

Introductory note

This introductory note does not form part of these standard rules.

These Standard Rules implement the Industrial Emissions Directive, Environmental Permitting (England and Wales) (Amendment) Regulations 2018 for Medium Combustion Plant (MCP) and Generators without secondary abatement. They incorporate the Best Available Technique conclusions (BATc) set out in the 2018 Waste Treatment BAT Reference document. Chapter 6 stipulates the BAT conclusions for waste operations in general and specifically for biological treatment of waste. Sites permitted prior to August 2018 are required to comply with BAT conclusions and AEL by 17 August 2022.

These rules cover Part A installations with an anaerobic digestion (treatment) capacity of over 100 tonnes per day of waste or a combination of waste and non-waste at a waste water treatment works. The total quantity of waste or a combination of waste and non-waste that can be accepted at any site under these rules must not exceed 250,000 tonnes per year. The amount of waste accepted per day must be constrained to the treatment capacity of the digesters and available storage.

When referred to in an environmental permit, these rules will allow the operator to operate an anaerobic digestion facility involving the acceptance, preparation, storage and anaerobic digestion of specified wastes at a waste water treatment works. These rules require the operator to strictly control the environmental impact of their facility.

Any wastes controlled by the Animal By-Products Regulations must be treated and handled in accordance with all requirements imposed by those Regulations.

The permitted activities include the storage, cleaning, compression and use of biogas by combustion in spark ignition engines, the use of gas turbines, boilers, fuel cells and treatment of the biogas and/or upgrading the biogas to biomethane and injection to the national grid. An aggregate rated thermal input less than or equal to 5 megawatts is permitted. Timescales for emission compliance will vary depending on capacity market agreements and balancing services agreements.

Standby flares must be available on site and combustion of gas by a flare is permitted in emergency situations or for planned maintenance only.

These rules do not allow fugitive emissions other than those from the use of correctly sized pressure relief valves in an emergency, where it is necessary to preserve the integrity of the plant or for immediate health and safety reasons only. These events must be recorded and the Agency notified. Frequent or prolonged disposal of excess biogas or biomethane is not permitted.

Vehicle fuelling stations are not permitted.

The permitted activities include pasteurisation, separation and storage of digested sludge on site in purpose-built covered tanks. Operators who wish to further treat pasteurised separated sludge digestate fibre by drying can do so if the dryer is fitted with a designed and maintained abatement system.

Digestate pasteurisation and storage tanks and equipment shall be regularly inspected and maintained. Prior to operation all critical infrastructure shall be validated by a chartered engineer and that validation report together with a commissioning plan submitted to the Environment Agency.

All emission abatement equipment shall be designed by a qualified engineer and be suitable in capacity and type to treat emissions. All abatement technology must be inspected and maintained as per design specification.

There must be adequate storage capacity available during periods of time when land is not accessible for the storage or spreading of sludge, so that compliance with the rules is maintained throughout.

These rules do not permit the burning of any wastes, either in the open, inside buildings or in any form of incinerator.

These rules do not allow any point source emission into land, surface waters or groundwater, except:

- Liquids may be discharged to sewer or the inlet of a waste water treatment works subject to a consent issued by the water company;
- Liquids may be taken off-site in a tanker for disposal or recovery;
- Clean surface water from roofs, or from areas of the site that are not being used in connection with storing and treating waste, should be harvested and reused. Where this is not possible clean water may be discharged directly to surface waters, or to groundwater by seepage through the soil via a soak away.
- Point source emission from designed abatement systems.

These rules do not apply to installations with more than one operator.

End of Introductory Note

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, so far as is reasonably practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances, closure, and those drawn to the attention of the operator as a result of complaints; and

(b) Using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in these standard rules shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall comply with the requirements of an approved competence scheme

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in table 2.1 below ("the activities").

2.1.2 The activities shall be undertaken in accordance with best available techniques.

2.1.3 All process plant and equipment shall be commissioned, operated and maintained, and shall be fully documented and recorded, in accordance with the manufacturer's recommendations.

Table 2.1 Activities

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
A1	S5.4 A(1) (b) (i)	Recovery or a mix of recovery and disposal of non-hazardous waste with a biological treatment capacity exceeding 100 tonnes per day if the only waste treatment activity is anaerobic digestion. R3: Recycling or reclamation of organic substances that are not used as solvents.	Treatment by anaerobic digestion of sewage sludge and septic tank sludge. The maximum quantity of waste permitted annually is 250,000 tonnes
Directly Associated Activity			
A2	Physical treatment of waste	R3: Recycling/ reclamation of organic substances which are not used as solvents.	Physical treatment of waste including screening, dewatering, mixing and digestate separation. Heat treatment of waste including thermal hydrolysis and pasteurisation Chemical treatment with non-wastes to thicken digestate. Drying only of separated digestate fractions.

A3	Gas combustion to produce heat and power.	R1: Use principally as a fuel or other means to generate energy	Burning of biogas in gas engines, gas turbines, boilers and use in fuel cells. Except for the auxiliary flare the aggregate rated thermal input of all appliances used to burn biogas shall be less than 5 megawatts. The MCP and/or generator must not have secondary abatement or be mobile.
	Use of biogas and biomethane	R1: Use principally as a fuel or other means to generate energy.	Gas storage and drying. Gas cleaning upgrading to biomethane.by biological or chemical scrubbing. Injection of upgraded biomethane to the national grid.
	Use of auxiliary standby flares	D10: Incineration on land	The use of auxiliary standby flares
	Use of pressure release values		Use of pressure release valves to protect the integrity and safety of the plant only.
A4	Storage	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).	Secure storage of waste prior to anaerobic digestion. Secure storage of liquid waste. Secure storage of non-digestible and quarantined waste Secure storage of spent activated carbon.
			Secure storage of digestate, including whole or liquid fractions in covered tanks.
A5	Raw material storage	Storage of raw materials including chemicals, lubrication oil, antifreeze, diesel, activated carbon.	From the receipt of raw materials to despatch for use within the facility. Secure storage of raw materials provided with secondary containment. Secure storage of activated carbon.

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan attached to the permit.

2.2.2 Only the Medium Combustion Plant and specified generators reported to and registered with the Agency are permitted to operate with the site boundary.

2.2.3 New combustion units must be notified to the Agency prior to start up.

2.2.4 The activities shall not be carried out within:

a) 250 metres of the nearest sensitive receptor where any processing or storage of digestate fibre is in the open; or 200 metres of the nearest sensitive receptor in any case where the stack is less than 7 metres high, unless its “effective” stack height is at least 3 metres.

b) 500 metres of a European site (within the meaning of Regulation 8 of the Conservation of Habitats and Species Regulations 2017) a Site of Special Scientific Interest (SSSI), including candidate or proposed sites or a Marine Conservation Zone;

c) a groundwater source protection zone 1 or 2, or if a source protection zone has not been defined then within 50 metres of any well, spring or borehole used for the supply of water for human consumption. This must include private water supplies;

d) 250 metres of the presence of great crested newts, where it is linked to the breeding ponds of the newts by good habitat;

e) 10 metres of any watercourse;

f) 50 metres of a Local Nature Reserve (LNR), Local Wildlife Site (LWS), Ancient woodland or Scheduled Ancient Monument;

g) 50 metres of a site that has relevant species or habitats protected under the Biodiversity Action Plan that the Environment Agency considers at risk from this activity;

h) A specified Air Quality Management Area.

2.3 Waste acceptance

2.3.1 Waste shall only be accepted if:

(a) it is of a type and quantity listed in table 2.3 below; and

(b) it conforms to the description in the documentation supplied by the producer and holder; and

(c) the facility has sufficient free capacity to store and treat the waste

2.3.2 Waste acceptance and pre-acceptance activities shall be undertaken in accordance with best available techniques.

2.3.2 Records demonstrating compliance with rule 2.3.1 shall be maintained.

Table 2.3 Waste types

Maximum quantities

The total quantity of waste accepted at the site shall not exceed 250,000 tonnes a year.

The total quantity of waste accepted at the site shall not exceed the designed storage capacity of the site.

Waste accepted and stored must be compatible with the designed capacity and operation of the site.

Exclusions

- Waste that is not biodegradable;
- Biodegradable waste that is significantly contaminated with non-biodegradable contaminants like plastic and litter beyond incidental level of 0.5% by volume;
- Wastes containing persistent organic pollutants;

Waste Codes	Description
19	**WASTE FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 02	**wastes from physico-chemical treatments of waste**
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 06	**wastes from physico-chemical treatments of waste**
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08	**wastes from wastewater treatment works**
19 08 05	sludges from treatment of urban waste water
19 12 12	**wastes from mechanical treatment of waste (e.g. sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only)
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 03	**Other Municipal Wastes**
20 03 04	Septic tank sludge

2.4 Operating techniques

2.4.1 The activities shall be operated using the techniques and in the manner described in Table 2.4 below.

Table 2.4 Operating techniques
Measures
1. New operations. Prior to operation, the operator shall submit a validation report for all critical infrastructure together with a commissioning plan to the Environment Agency. 2. Existing installations will by 1 January 2022 a. submit a validation report for all critical infrastructure as carried out by a qualified engineer, together with a Hazard & Operability Study (HAZOP) or similar risk identification technique and document actions in accordance with condition 1.1; b. produce and submit a schedule of planned improvement maintenance as identified by the HAZOP or risk assessment and/or suppliers, which will be documented in accordance with condition 1.1 c. Produce a programme of inspection and works which will be implemented to ensure that primary and secondary containment remain fit for purpose. A report describing this programme, including its findings and the works to be undertaken as a result, will be submitted to the Environment Agency within 1 months of completion of that report. Time lines for completion of required works to be agreed with the Environment Agency. d. produce documented procedures in accordance with condition 1.1, e. Submit to the Agency a register of all combustion engines onsite as per schedule Appendix 1 of this permit.
3. Existing sites will submit a report setting out progress to achieving the BAT Conclusions and BAT-AEL's where BAT is currently not achieved, but will be achieved by the (date). The report shall include, but not be limited to, the following: a. Current performance against the BAT Conclusions and BAT-AEL. b. Methodology for reaching the AELs. c. Associated targets / timelines for reaching compliance by 30th June 2022. The report shall address all of the relevant BAT Conclusions, In the interim period the site must be operated in line with a comprehensive management system which identifies all risks of pollution, including those arising from accidents, fire, etc. Setting out how the risks are prevented and minimised. It must be revised and maintained as activities evolve and continually improve environmental performance.
4. The management system shall document the monitoring regimes and systems to ensure digester stability and to minimise emissions and pollution. It will include an odour management plan.
5. The acceptance, storage and physical treatment of wastes shall take place only on an impermeable surface with sealed drainage system that adheres to recommendations of a CIRIA 736 report or equivalent approved standard.
6. All waste solids, liquids and sludges shall be securely stored.
7. All storage and process tanks shall be fit for purpose and shall be regularly inspected and maintained. In the event of a leak, spill or failure, material must be contained and recovered.
8. All storage and process tanks shall be located on an impermeable surface (a hydraulic permeability of not greater than 1x 10-9 m/s) with sealed construction joints within a bunded area. The bunded area shall have a capacity at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater. Bunds shall be regularly inspected to ensure that bunds filled by rainwater are regularly emptied. Connections and fill points should be within the bunded area and no pipework should penetrate the bund wall. Underground tanks shall have secondary containment and appropriate leak detection. No less than 95% of the bund capacity shall be maintained at all times. Any secondary containment shall adhere to recommendations of a CIRIA 736 report or equivalent approved standard.
9. The operator shall have a site drainage plan and a schedule for inspection and maintenance of the facility's critical infrastructure, including the impermeable surfacing and drainage system. This infrastructure shall be inspected and maintained in accordance with this schedule.
10. All above ground tanks and containers shall have secondary containment and comply with design and construction of secondary containment as specified by CIRIA 736 report or equivalent approved standard.

11. Secondary containment and bunds shall be regularly inspected and emptied. Connections and fill points should be within the bunded area and no pipework should penetrate the bund wall unless it complies with CIRIA 736 or equivalent approved standard.
12. Underground tanks shall have secondary containment and appropriately designed and engineered leak detection as per a CIRIA 736 or equivalent approved standard. No less than 95% of the bund capacity shall be available at all times.
13. Any wastes which are incompatible shall be stored separately with secondary containment or engineered drainage.
14. Waste shall be stored for the minimum time possible prior to treatment, or otherwise actively managed to minimise uncontrolled decomposition.
15. Quarantined and rejected waste shall be stored in closed containers or covered and removed to a regulated facility within 5 days or as agreed in writing with the Environment Agency.
16. Air extraction and air abatement systems treating off gases or gas cleaning shall be specifically designed by a suitably qualified engineer. The air composition and gas stream quality shall be monitored and maintained to minimise the release of emissions, odour and bioaerosols.
17. Whole and liquid digestate shall be stored in covered tanks with an air abatement and extraction system designed to prevent odour and emissions. All storage tanks shall have maintained a free board of at least 750mm.
18. An auxiliary flare must be available to combust unburned biogas or biomethane. The operation of the auxiliary flare shall be minimised and limited to emergencies and during maintenance to protect the integrity of the plant.
19. Emissions of unburnt biogas shall be minimised and release is only permitted to maintain the integrity of the plant or health and safety of staff.
20. Pressure relief valves must be correctly sized and inspected to ensure they are correctly seated and re-seated after release.
21. Periods of start-up and shut-down of the Medium Combustion Plant and Specified Generator must be kept as short as possible.
22. There shall be no persistent emission of ‘dark smoke’ as defined in section 3(1) of the Clean Air Act 1993.
23. The combustion plant (including boilers) stack shall be vertical and unimpeded by cowls or caps, and with a height of at least 3 meters.
24. All biogas condensate shall be discharged into a sealed drainage system or recirculated back to the digester.
25. All gas to grid activities will be monitored and have available storage and combustion unit contingency for periods when gas grid demand is low. Measures shall be taken to decrease loading rate in such circumstances. Venting and flaring of gas other than for safety and maintenance requirements is not permitted.
26. All digestate drying must be within a closed system designed for the volume and purpose, and all emissions must be extracted and treated in an engineered and maintained abatement system.
27. All tanker loading and discharge points should be in a building or venting to a specified abatement system.
28. All tanker loading and discharge shall be supervised.
29. Clean surface water shall be separated and stored for use on site.
30. Lightning conduction systems shall be in place.
31. All tanks will be fitted with foam sensing and anti-foam technology.
32. Consideration shall be given to operational and storage capacity during periods of time when land is not available for the spreading of digestate, so that compliance with the rules and their limits is maintained throughout.
33. Methane leak detection program shall be in place.
34. Sludges can be diluted using final effluent from the wastewater treatment works where this is done to aid the pre-treatment and digestion process

3 Emissions and monitoring

3.1 Emissions to air, water or land

3.1.1 There shall be no point source emissions to air, water or land, except from the sources and emission points listed in table 3.1.

3.1.2 The limits given in table 3.1 shall not be exceeded.

3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

Table 3.1 Point source emissions to air, water and land – emission limits and monitoring requirements

Emission point ref. & location [Note 1]	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
Point source emissions to air					
Stacks on engines Burning biogas [Note 2]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/m^3	periodic over minimum 1-hour period	Annual	In accordance with M2 – Monitoring of stack emissions to air [Note 3]
	Carbon monoxide	1400 mg/m^3			
	Sulphur dioxide	350 mg/m^3 Or if new MCP 107 mg/m^3			
	Total volatile organic compounds including methane	1000 mg/m^3			
Boilers operational before 20 December 2018 Note 2	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250 mg/m3 if burning biogas or natural gas	periodic over minimum 1-hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air. **[Note 3]**
	Sulphur dioxide	200 mg/m3 if burning biogas			
Boilers that are new MCP Note 2	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	200 mg/m3 If burning biogas 100 mg/m3 if burning natural gas	periodic over minimum 1-hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air. **[Note 3]**
	Sulphur dioxide	100 mg/m3 if burning biogas			
Channelled emissions to air as identified on site plan Including tank vents biofilter and/or scrubbing system	Ammonia	20 mg/Nm^3	periodic over minimum 1-hour period	Once every 6 months In accordance with 3.3	Emissions of pollutants into the environment through any kind of duct, pipe, stack, etc. This also includes emissions from open top biofilters. [Note 4]
	H2S	No limit specified		In accordance with condition 3.3	

Table 3.1 Point source emissions to air, water and land – emission limits and monitoring requirements					
Emission point ref. & location [Note 1]	**Parameter**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	Odour concentration	1,000 ou_E/Nm^3		Once every 6 months or as determined in accordance with 3.3	BS EN 13725
Diffuse Emissions to air Stacks or vents on biogas upgrading plant	Volatile Organic Compounds	No limit set	Leak detection and repair (LDAR) programme	Continuous	Leak detection and repair (LDAR) programme.
Auxiliary flare	Operational hours	No limit set	Recorded duration and frequency.	Continuous	Operational record including date, time and duration of use shall be recorded
Pressure relief valves	Biogas release and operational events	No limit set	Recorded duration and frequency.	Continuous Daily inspection	Operational record including date, time duration of pressure relief events and calculated annual mass release

Note 1 – Emission point and source includes outlets from site infrastructure including ventilation systems, abatement systems emitting treated air from enclosed systems, outlets from tanks or vents, storage tanks containing liquors or leachate.

Note 2 – Stacks on engines: Uncertainty allowance as stated in EA guidance TGN M2. To ensure effective plume breakaway, minimum stack gas exit velocity shall be no less than 15 m/s or 12 m/s where stack volume flow is less than 0.5 m^3/s; OR The gas exit temperature shall be no less than 200°C.

Note 3 – Monitoring equipment, techniques, personnel and organisations employed for the engine stack emissions monitoring programme (including the measurement of exhaust gas temperature) shall have either MCERTS certification or MCERTS accreditation (as appropriate). All limits are defined at a temperature of 273.15 K, a pressure of 101.3 kPa and after correction for the water vapour content of the waste gases at a standardised O_2 content of 5% for Gas Engines and 3% for Boilers.

Note 4 The monitoring of NH3 and H2S can be used as an alternative to the monitoring of the odour concentration.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour, not excluding ammonia) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions

management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.2.4 The operator will implement a Leak detection and repair (LDAR) programme to detect and mitigate release of volatile organic compounds

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, a revised odour management plan which identifies and minimises the risks of pollution from odour;

(b) implement the approved revised odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in table 3.5

3.5.2 The operator shall maintain records of all monitoring required by these standard rules including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

Table 3.5 Process monitoring requirements

Monitoring Point	Parameter	Monitoring Frequency	Monitoring Method	Other Specifications
Meteorological conditions	Wind speed, air temperature, wind direction	Continuous monitoring	Method as specified in management system	In accordance with condition 3.3 recorded in operational diary and records. Equipment shall be calibrated on a 4 monthly basis or as agreed in writing by the Environment Agency or as per manufactures instructions.
Digester process and gas production	Digester stability, Gas volume and quality	Continuous	Recorded to a SCADA data system.	Digester process and gas production measurements shall be carried out within 4 months of the issue date of the permit, or the date when the Medium Combustion Plant is first put into operation, whichever is later.
Digester mixing	Agitation ampage	Continuous	Systems controls. Yearly lithium or thermal imaging	Records maintained in daily operational records.
	Tank capacity and sediment assessment	At least yearly assessment		As per design specification and tank integrity testing.
Air abatement systems Channelled emissions	Moisture Temperature	Daily	Recorded using industry standard techniques	Includes all abatement technology where employed to abate buildings, gas clean up or drying.
	Thatching and compaction	Weekly	Back pressure	In accordance with condition 3.3
	Efficiency assessment	Yearly		Annual report detailing the removal efficiency of all abatement systems and planned maintenance. In accordance with condition 3.3
	Gas stream flow	Continuous		As per design and manufacturer's specifications.
	Ammonia, Odour	6 Monthly		
Wet scrubbing systems – inlet and outlet	pH	Continuous monitoring.		As per design and manufacturer's specifications.
Auxiliary flare	Operating hours	Operation of the auxiliary flare shall be recorded.	Systems analysis system (SCADA)	Date, time and duration of use must be recorded
Pressure relief valves	Biogas Methane	As per the manufacturer's design	Daily visual or remote monitoring	Date, time and duration of pressure relief events shall be recorded.
Stacks or vents on biogas upgrading plant	Volatile Organic Compounds	Continuous	Fence line sensors	Methane monitoring points as specified in DSEAR risk assessment and leak detection and repair programme.
Diffuse emissions from gas storage membrane, stacks, vents on biogas upgrading plant	Ammonia, Odour VOC including methane	6 Monthly		Leak Detection and Repair programme In accordance with Condition 3.4
Storage tanks	Volume	Daily	Visual or flow meter measurement	750mm freeboard must be available

3.6 Pests

3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.6.2 The operator shall:

(a) only use approved products for pest control;

(b) treat pest infestations promptly;

(c) reject pest-infested incoming waste.

(d) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;

(e) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency;

3.7 Fire prevention

3.7.1 The operator shall take all appropriate measures to prevent fires and accidents on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.7.2 The operator will undertake a DSEAR risk assessment and have a clear accident management and emergency plan.

4 Information

4.1 Records

4.1.1 All records required to be made by these standard rules shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by these standard rules, unless otherwise agreed in writing by the Environment Agency.

4.1.3 The operator must maintain a record of the type and quantity of fuel used in the Medium Combustion Plant and generators as reported using Appendix 1.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by these standard rules to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

4.2.3 The operator shall keep records of non-waste materials leaving the site - including the type of material, the batch number, the date of export off-site, and the tonnage exported on that date. These records shall be retained for at least 2 years.

Table 4.2 Reporting

Parameter	**Emission or monitoring point /reference**	**Report frequency**
Emissions from CHP and generators	In accordance with table 3.1	Annual report by the 31st January of each year
Diffuse Emissions	In accordance with 3.1 and table 3.5	Annual report by the 31st January of each year
Digester process and gas production Process monitoring	As specified in table 3.5	Summary Quarterly report during the first year then yearly thereafter or as instructed by the Environment Agency
Digester Tank Integrity	As specified in table 3.5	Annual report by the 31st February
Channelled emission to air	As specified in table 3.5	6 monthly emission limits On the 31st January and the 31st July of each year. Or as requested by the Environment Agency.
Efficiency of biofilter and other abatement systems	As specified in table 3.5	Annual report 31st January of year detailing the removal efficiency of all abatement systems and planned maintenance. In accordance with condition 3.3
Events outside of normal operating conditions	As specified in 3.2 and table 3.5	Annual summary to include use of Auxiliary Flare[1] and PRV releases by the 31st January of each year.
Point source emissions to water and land	As specified in 3.2 and table 3.5	Annual report by the 31st January of each year
Waste returns	In accordance with 4.2.2	Within one month of the end of each quarter

[1] Routine maintenance testing flares for short periods are not required to be reported but should be clearly documented in accordance with condition1.1

Non-waste outputs	In accordance with 4.2.3	Within one month of the end of each quarter
Medium combustion plant	in accordance with condition 4.3.7	New plant must be notified using Appendix A

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Written confirmation of actual or potential pollution incidents and breaches of emissions shall be submitted within 24 hours.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 Following the detection of an issue listed in 4.3.1, the operator shall review and revise the management system, and implement any changes as necessary to minimise the risk of reoccurrence of the issue.

4.3.5 The Environment Agency shall be notified at least 14 days in advance of any planned change to the Medium Combustion Plant or Generator which could affect compliance with applicable emission limits.

4.3.6 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

(a) Where the operator is a registered company:
- any change in the operator's trading name, registered name or registered office address; and
- any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

(b) Where the operator is a corporate body other than a registered company:
- any change in the operator's name or address; and

- any steps taken with a view to the dissolution of the operator.

(c) In any other case:
- the death of any of the named operators (where the operator consists of more than one named individual);
- any change in the operator's name(s) or address(es); and
- any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.7 The operator shall notify the Environment Agency, as soon as is practicable, in writing of any change of new combustion plant at the site.

4.4 Interpretation

4.4.1 In these standard rules the expressions listed below shall have the meaning given.

4.4.2 In these standard rules references to reports and notifications mean written reports and notifications, except where reference is made to notification being made immediately, in which case it may be provided by telephone.

"accident" means an accident that may result in pollution.

"*Accident management plan*" means a plan that identifies risks and failures which can have an impact on the environment or have environmental consequences. The plan forms part of the management system. The plan must minimise the potential causes and consequences and identify clearly, the roles, responsibilities and action to be taken to minimise the consequences of accidents. This includes measures to prevent and control fires on site (see fire prevention plan). This includes a DSEAR risk assessment and clearly marked zones.

"*Air Quality Management Area*" means that defined in the Environment Act 1995, Part VI, 83(1) as amended.

"anaerobic digestion" means a process of controlled decomposition of biodegradable materials under managed conditions where free oxygen is absent, at temperatures suitable for naturally occurring mesophilic or thermophilic anaerobe and facultative anaerobe bacteria species, which convert the inputs to a methane-rich biogas and whole digestate.

"animal waste" means any waste consisting of animal matter that has not been processed into food for human consumption. This does include, blood, feathers, uncooked butchers waste and any other animal waste that is not catering waste or former foodstuffs. This does not include faecal matter from animals (e.g. chicken litter or farmyard manure).

"Appropriate measures" means the available techniques which are the best for preventing or minimising emissions and impacts on the environment. It includes both the technology used and the way your facility is designed, built, maintained, operated and decommissioned. It allows consideration of the risks, costs and advantages of a technique, and whether it is reasonably available to you. It requires you to take account of relevant guidance, including for example Best Available Technique Reference (BREF) documents.

"authorised officer" means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.

"BAP" means Biodiversity Action Plan. This is a non-statutory plan created by the UK Biodiversity Partnership and the UK Government, in response to the Convention on Biological Diversity (CBD) signed in 1992. It describes the UK's biological resources, and commits a detailed plan for the protection of these resources.

"best available techniques" means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole:

(a) 'techniques' includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

(b) 'available techniques' means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;

(c) 'best' means most effective in achieving a high general level of protection of the environment as a whole.

“Biodegradable” means a material is capable of undergoing biological anaerobic or aerobic degradation leading to the production of CO_2, H_2O, methane, biomass, and mineral salts, depending on the environmental conditions of the process.

“Capacity” means the potential capacity and not historical or actual production levels or throughput. This means that the designed capacity is the maximum rate at which the site can operate. Biological treatment of waste usually takes place over more than one day, so the physical daily capacity can be calculated by dividing the maximum quantity of waste that could be subject to biological treatment at any one time by the minimum residence time.

“*Channelled emissions”* means the emissions of pollutants into the environment through any kind of duct, pipe, stack, etc. This also includes emissions from open top biofilters.

“Competent persons and resources” means that a technically competent person accredited to a relevant scheme must attend site and record their attendance, and that all roles and responsibilities are clearly stated in the management systems along with records of operatives’ training

“D” means a disposal operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste.

“digestate” means material resulting from an anaerobic digestion process

“*DSEAR*” means the Dangerous Substances and Explosive Atmospheres Regulations 2002

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from emission points specified in these standard rules or from other localised or diffuse sources, which are not controlled by an emission limit.

“emissions to land” include emissions to groundwater.

“European Site” means a European site within the meaning of Regulation 8 of the Conservation of Habitats and Species Regulations 2017’

“Fire prevention plan” – means a written document setting out procedures to prevent and minimise fires and the spread of fires. This forms part the management system.

‘’Fuel Cells’’ means a device that converts the energy of a fuel directly to electricity and heat without combustion.

“Gas engine effective stack height” means:
a) If away from buildings actual stack height is no less than 3 meters.
b) If attached to or on top of a building the stack tip must be no less than 3 meters above roof ridge.
c) If there are other buildings within a distance of 5L from the point of discharge, the top of the stack must be no less than 3 meters above the roof ridge of the highest building. L is the lesser of the two measurements of building height and maximum width of the building, measured in metres.

“generator” means any combustion plant which is used to generate electricity, excluding mobile, unless it is connected to the national grid.

“good habitat” means rough (especially tussocky) grassland, scrub and woodland.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“groundwater source protection zone” has the meaning given in the document titled “Groundwater protection: Principles and practice” published by the Environment Agency in 2012.

“hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended)

“impermeable surface” means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface, and should be read in conjunction with the term “sealed drainage system” (below).

“Incidental contamination” means low levels of incidental waste, for example plastic, that may be contained within the feedstock waste.

’Leak detection and repair (LDAR) programme’’ means a structured approach to reduce fugitive emissions of organic compounds by detection and subsequent repair or replacement of leaking components. Currently, sniffing (described by EN 15446) and optical gas imaging methods are available for the identification of leaks. As set out in BAT conclusions 14 and 6.6.2 Diffuse emissions of organic compounds to air.

“Management System”- means a written document, identifying all risks of pollution, including those arising from accidents, fire, etc., and setting out how the risks are minimised and prevented if possible. The management system must be maintained as activities evolve, and should always seek to improve environmental performance if possible. It should be developed in a holistic manner, because changing any part of a process might affect the risk of emissions. Any emission management plans, odour management plans, etc. required by these rules shall form part of the management system. The management system must also be informed by a risk assessment. This must be equivalent to or better than (in terms of the level of environmental protection) the standard risk assessment accompanying these standard rules to achieve the desired environmental outcomes.

“maturation” means optional period of treatment or storage of separated fibre digestate under predominantly aerobic conditions.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“medium combustion plant” means a combustion plant with a rated thermal input equal or greater than1 megawatt but less than 50 megawatts.

“nearest sensitive receptor” means the nearest place to the permitted activities where people are likely to be for prolonged periods. This term would therefore apply to dwellings (including any associated gardens) and to many types of workplaces. We would not normally regard a place where people are likely to be present for less than 6 hours at one time as being a sensitive receptor. The term does not apply to those controlling the permitted facility, their staff when they are at work or to visitors to the facility, as their health is covered by Health and Safety at Work legislation, but would apply to dwellings occupied by the family of those controlling the anaerobic digestion facility

“new medium combustion plant” means one that is not existing i.e. which was put into operation after 20 December 2018. This includes replacement MCPD and Generators

‘’Operator’’ means in relation to a regulated facility, means-

(a) the person who has control over the operation of the regulated facility,

(b) if the regulated facility has not yet been put into operation, the person who will have control over the regulated facility when it is put into operation, or

(c) if a regulated facility authorised by an environmental permit ceases to be in operation, the person who holds the environmental permit

‘pest’ means birds, vermin and insects.

"pollution" means emissions as a result of human activity which may—

(a) be harmful to human health or the quality of the environment,

(b) cause offence to a human sense,

(c) result in damage to material property, or

(d) impair or interfere with amenities and other legitimate uses of the environment.

“*quarter*” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“R” means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste.

“Representative internal” – means representative monitoring at a point internally of the windrows that will give a representative assessment of temperature. Note: Larger windrows will require more bespoke temperature equipment to adequate assess temperature profiles accurately.

“sealed drainage system” in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

(a) no liquid will run off the surface otherwise than via the system;

(b) except where they may lawfully be discharged to foul sewer, all liquids entering the system are collected in a sealed sump.

“Secondary containment” – means a system that is capable of containing loss from all above ground and underground storage tanks and that complies with CIRIA standard 736 or an equivalent standard of design and construction.

“secure storage” means storage where waste cannot escape and members of the public do not have access to it.

“site” means the location where waste storage and treatment activities can take place.

“specified AQMA” means an air quality management area within the meaning of the Environment Act 1995 which has been designated due to concerns about oxides of nitrogen.

“Specified Air Quality Management Area” means an air quality management area within the meaning of the Environment Act 1995 which has been designated due to concerns about oxides of nitrogen.

"specified generator" means a group of generators other than excluded between 1 and 50 megawatts or less than 50 megawatts as defined in Schedule 25B(2) of SI 2018 No.110 of the EPRs.

"SSSI" means Site of Special Scientific Interest within the meaning of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000).

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk. 'List of Wastes' means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

"year" means calendar year commencing on 1st January.

End of standard rules

Appendix A

MCP Plant List (Annex 1 Information)

Operator Name:

Operator Registered Office:

Address of Plant (Site):

NACE Code:

Plant Name	Activity (MCP or SG = MCP)	Type of MCP (Technology) e.g. Diesel Engine, Gas Turbine, Dual Fuel Engine	Serial number of plant	Plant Grid Reference (Lat/Long) or (E/N)	Commissioning Date of MCP	Size (MWth) (Rated Thermal Input)	Fuel Type	Share of Fuels	Expected Operating (& Ave L
Plant 1	Medium Combustion Plant								
Plant 2	Medium Combustion Plant								
Plant 3	Specified Generator (is also an MCP)								
Plant 4	Specified Generator (is also an MCP)								
Plant 5	Specified Generator (is also an MCP)								

Note:

This table only lists MCP Plant (including any SG Plant that is also an MCP) permitted on this site.

The operator shall notify the Environment Agency, as soon as is practicable, in writing of any change of new medium combustion plant Annex I information. If this includes adding or removing MCP plant from the permitted site a variation of this standard permit will be required.

If you have any queries please contact us at MCPDHelp@environment-agency.gov.uk