

Variation and consolidation single permit

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Biogen Southern Limited

Weston Super Mare AD Plant

Aisecombe Way
Off Herluin Way
Hutton Moor
Weston Super Mare
Somerset
BS22 8NA

Variation application number

EPR/HB3904CC/V009

Permit number

EPR/HB3904CC

Weston Super Mare AD Plant

Permit number EPR/HB3904CC

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Changes introduced by this variation notice and permit review

We have carried out a permit review as required by primary legislation to ensure that permit conditions deliver compliance with relevant legislative requirements and appropriate standards to protect the environment and human health.

The scope of the permit review also covers the assessment of:

- the requirement for bioaerosols monitoring and compliance with M9 bioaerosols monitoring requirements;
- the design and construction of primary and secondary containment;
- review of process monitoring requirements;
- review of waste types;
- register of combustion engines, boilers and generators;
- review of tonnages to ensure compliance with the Industrial Emissions Directive;
- review fugitive emissions loss; and
- review of permit conditions where required.

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for biowaste treatment. The opportunity has also been taken to consolidate the original permit and subsequent variations.

Brief description of the facility

This permit is for an anaerobic digestion facility taking 30,000 tonnes annually. The site accepts wastes and non-waste crops for treatment. Waste goes through pre-treatment at the reception hall, then stored in the external raw waste buffer storage tanks. The digestion process is a continuous flow process, where the feedstock is delivered to the digester at regular intervals. Further processes taking place are pasteurisation and screening. The digestate is transferred offsite by a third party for further storage and use on arable land. The biogas generated by the digestion process is stored in a gas holder before being used as a fuel in the two combined heat and power units. The site comprises a flare stack for emergency and maintenance purposes only. There is an odour abatement system onsite containing a wet scrubber and a closed biofilter.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Permit determined EPR/FP3497EY	12/05/10	Original permit issued to Cory Environmental (Gloucestershire) Limited for a waste transfer station.
Variation determined EPR/FP3497EY/V002	09/02/12	Application Returned
Part surrender determined EPR/FP3497EY/S003	19/12/12	Partial surrender issued.
Variation determined EPR/FP3497EY/V004	25/04/13	Variation to change the activities of the site from a waste transfer station to an anaerobic digestion plant.
Variation determined EPR/FP3497EY/V005	20/03/14	Variation to amend monitoring and site plan.
Variation determined EPR/FP3497EY/V006	03/09/15	Variation to add emission point for second CHP gas engine.
Variation determined EPR/FP3497EY/V007	23/01/18	Company Name and Registered office changed to Enovert South Limited, 20 Old Broad Street, London EC2N 1DP
Transfer determined EPR/HB3904CC (full transfer of permit EPR/FP3497EY)	09/01/20	Full transfer of permit complete to Biogen Southern Limited.
Regulation 61 Notice sent to Operator	29/03/22	Regulation 61 Notice requiring information for statutory review of permit.
Regulation 61 Notice response	27/06/22	Response received from the operator.
Additional information received	04/12/23	More information on drainage, digestate storage and waste acceptance received.
Additional information received	22/12/23	Site containment report and more information on site processes received.
Additional information received	15/01/23	More information on Combined Heat and Power engines received.
Additional information received	09/02/23	Confirmation of removing non-standard wastes; more information on carbon filter and site processes received.
Additional information received	01/03/23	Updated site plan with location of the carbon filter
Application EPR/HB3904CC/V009 (variation and consolidation)	Environment Agency Initiated Variation	Statutory review of permit.
Environment Agency Biowaste Treatment Sector Review Permit reviewed Variation determined EPR/HB3904CC	29/04/2024	Varied and consolidated permit issued.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

Permit number

EPR/HB3904CC

Issued to

Biogen Southern Limited (“the operator”)

whose registered office is

**Milton Parc
Milton Ernest
Bedfordshire
MK44 1YU**

company registration number 12154571

to operate a regulated facility at

**Weston Super Mare AD Plant
Aisecombe Way
Off Herluin Way
Hutton Moor
Weston Super Mare
Somerset
BS22 8NA**

to the extent set out in the schedules.

The notice shall take effect from 26/04/2024.

Name	Date
Laura Asbury	29/04/2024

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/HB3904CC

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/HB3904CC/V009 authorising,

Biogen Southern Limited (“the operator”)

whose registered office is

**Milton Parc
Milton Ernest
Bedfordshire
MK44 1YU**

company registration number 12154571

to operate waste operations at

**Weston Super Mare AD Plant
Aisecombe Way
Off Herluin Way
Hutton Moor
Weston Super Mare
Somerset
BS22 8NA**

to the extent authorised by and subject to the conditions of this permit.

The notice shall take effect from 26/04/2024.

Name	Date
Laura Asbury	29/04/2024

Authorised on behalf of the Environment Agency

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, including those 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 this permit 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 Avoidance, recovery and disposal of wastes produced by the activities

- 1.2.1 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.
- 1.2.2 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 schedule 1 table S1.1 (the “activities”).
- 2.1.2 All process plant and equipment shall be commissioned, operated and maintained in accordance with the manufacturer’s recommendations and shall be fully documented and recorded.

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in blue on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2A, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2A or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2;
 - (b) it conforms to the description in the documentation supplied by the producer and holder
 - (c) it is biodegradable; and
 - (d) the facility has sufficient free capacity to store and treat waste.
- 2.3.4 Records demonstrating compliance with condition 2.3.3 shall be maintained.
- 2.3.5 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1 (A3):
- (a) Each combustion plant must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.
 - (b) the operator must keep periods of start-up and shut-down of each combustion plant as short as possible.
 - (c) there must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) 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 releases 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, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved 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 the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1, S3.2;
- (b) process monitoring specified in table S3.3;

(c) bioaerosols monitoring specified in tables S3.4.

- 3.5.2 The operator shall maintain records of all monitoring required by this permit 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.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in this rule shall either have MCERTS certification or MCERTS accreditation (as appropriate), where available or have UKAS accreditation, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 In the case of new medium combustion plant, the first monitoring measurements shall be carried out within four months of the issue date of the permit or the date when the MCP is first put into operation, whichever is later.
- 3.5.6 Monitoring shall not take place during periods of start-up or shut-down.

3.6 Bioaerosols

- 3.6.1 The operator shall take all appropriate measures, to prevent or where that is not practicable to minimise the release of bioaerosols. Emissions of bioaerosols from the operational activities shall not exceed the emission action levels specified in table S3.4.
- 3.6.2 The operator shall where the emission action levels are exceeded:
- (a) notify the Environment Agency and investigate and take remedial action;
 - (b) submit to the Environment Agency for approval within the period specified, a bioaerosols management plan which identifies and minimises the risks of pollution from bioaerosols; and
 - (c) implement the bioaerosols management plan from the date of approval and revise the plan periodically, unless otherwise agreed in writing by the Environment Agency.

3.7 Pests

- 3.7.1 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.
- 3.7.2 The operator shall:
- (a) only use approved products for pest control;
 - (b) treat pest infestations promptly;
 - (c) 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 from pests;
 - (d) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.8 Fire prevention

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

3.8.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;
- (b) implement the fire prevention plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.8.3 The operator will undertake a DSEAR 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 this permit 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 this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

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

4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.2; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.3 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.4 Within 1 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.

- 4.2.5 The operator shall keep records of the material exported from the site as non-waste including the type of material, the tonnage of material, the batch number and the date of export. This information shall be reported to the Environment Agency within one month of the end of each quarter as specified in schedule 4 table S4.1 and the records shall be maintained for at least 2 years.
- 4.2.6 The operator shall submit an annual report as specified in schedule 4 table S4.1 detailing the efficiency of removal of non-compostable and non-digestible materials from feedstock prior to processing and the level of contamination in the final recovered digestate and or compost.

4.3 Notifications

- 4.3.1 The Environment Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
 - (b) the breach of a limit specified in the permit; or
 - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Following the detection of an issue listed in condition 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.
- 4.3.4 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.
- 4.3.5 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:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (a) any change in the operator's name or address; and
 - (b) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (a) the death of any of the named operators (where the operator consists of more than one named individual);
 - (b) any change in the operator's name(s) or address(es); and
 - (c) 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.
- 4.3.6 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

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

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “without delay”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities		
Waste activities		
Activity reference	Description of activities for waste operations	Limits of activities
A1	<p>Biological treatment by Anaerobic Digestion</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents</p>	<p>Treatment operations shall be limited to:</p> <ul style="list-style-type: none"> • Biological treatment of waste and non-waste crops by anaerobic digestion for the purpose of recovery (no more than 100 tonnes per day including waste and non waste solids and liquids). • The treatment capacity of any plant shall not exceed 10 tonnes of animal waste per day • All bulking, transfer and pre-treatment of waste shall be carried out in an enclosed building fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system. <p>Non-waste crops as described in Table S2.1 Waste types as specified in Table S2.2</p>
A2	<p>Physical and chemical treatment of waste</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents</p>	<ul style="list-style-type: none"> • Physical treatment associated with the anaerobic digestion activity in an enclosed building fitted with appropriate odour abatement and on an impermeable surface with a sealed drainage system including depackaging, removal of plastic and contrary items, shredding, sorting, screening, compaction, baling, mixing, and maceration for the purpose of recovery. • Heat treatment (pasteurisation) of waste and chemical addition for the purpose of recovery • Digestate treatment (other than for the purpose of use as a fuel) including screening to remove plastic residues, separation, centrifuge or pressing, addition of thickening agents (polymers), cooling, pH adjustment and drying • No composting or maturation of digestate material to be conducted on site.
A3	<p>Gas combustion to produce heat and power</p> <p>R1: Use principally as a fuel or other means to generate energy</p>	<p>Burning of waste (biogas) as a fuel for the purpose of generation of electricity and heat for use within the facility and/or export to the grid.</p> <p>1 x 1.500 MWth CHP engine ^{Note 1} – 8100 hours</p> <p>1 x 1.800 MWth CHP engine ^{Note 1} – 8100 hours</p> <p>From the receipt of fuel to supply of heat and power and release of combustion gases.</p>

Table S1.1 activities					
Waste activities					
A4	Auxiliary standby flare D10: Incineration on land	<p>From the receipt of biogas produced at the on-site anaerobic digestion process to incineration with the release of combustion gases.</p> <p>Use of one auxiliary flare required only during periods of breakdown or maintenance of the CHP engines, biogas upgrading plant and/or auxiliary boilers.</p> <p>Emissions of unburned biogas and the operation of the flare shall be recorded.</p> <p>All biogas condensate shall be discharged into a sealed drainage system or recirculated back to the digester.</p>			
A5	Storage Under WFD Annex II operations 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)	<p>This activity is limited to:</p> <ul style="list-style-type: none"> • compatible waste prior to anaerobic digestion • liquid waste consisting of dirty water and, or liquor • non-digestible and quarantined waste • finished digestate, whole or liquid fraction of digestate in covered tanks or lagoons 			
A6	Storing waste generated on site and raw materials 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)	<p>This activity is limited to safe storage of:</p> <ul style="list-style-type: none"> • chemicals • lubrication oil • antifreeze • diesel • activated carbon spent and new and other spent air abatement media 			
Specified Generators activities					
Activity reference	National Grid Reference and or activity reference/ emission point	Activity listed in the EP Regulations	Description of MCP and/or specified generator	Fuel	Operating hours limit per year
A7	Location A3 on site plan in Schedule 7	Schedule 25A – MCP and Schedule 25B – Specified generator	1 x 1.500 MWth CHP engine ^{Note 1}	Biogas	8100 hours
A8	Location A4 on site plan in Schedule 7	Schedule 25A – MCP and Schedule 25B – Specified generator	1 x 1.800 MWth CHP engine ^{Note 1}	Biogas	8100 hours
Note 1: The two CHP engines are both waste operations and part of the specified generator.					

Table S1.2 Operating techniques for waste activities		
Description	Parts	Date Received
Response to RFI dated 14/11/2023	Bioaerosol Risk Assessment report consisting of the following document: BIOAEROSOL RISK ASSESSMENT & MANAGEMENT PLAN (WESTON) – Version 2 Risk assessment on pages 5-12 Issue date: 27.11.2023	Received 04/12/2023
Response to RFI dated 11/12/2023	Containment Assessment report consisting of the following document: Secondary Containment Review, Weston Super Mare AD Plant – Version 1 File name: 160720_424_08307_00005_Weston Containment_bund_report draft Issue date July 2020	Received 22/12/2023

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement condition for primary and secondary containment infrastructure design		
IC1	<p>a) The operator shall submit written proposals for works as described in recommendations a, b, c, and d within Table 1 (of report reference: Secondary Containment Review, Weston Super mare AD Plant; Filename: 160720_424_08307_00005_Weston Containment_bund_report draft; SLR Ref No: 424.08307.00005; July 2020) or propose alternative improvements that provide the same or higher level of protection and comply with standards CIRIA C736, and obtain the Environment Agency's written approval.</p> <p>b) The measures approved under a) shall be implemented in accordance with the Environment Agency's written approval</p>	29/04/2026 or other date as agreed in writing with the Environment Agency (2 years from permit issue)
Improvement condition for review of effectiveness of abatement plant		
IC2	<p>The operator shall carry out a review of the abatement plant on site, in order to determine whether the measures have been effective and adequate to prevent and where not possible minimise emissions released to air including but not limited to odour and ammonia.</p> <p>The operator shall submit a written report to the Environment Agency following this review for assessment and approval.</p> <p>The report shall include but not limited to the following aspects:</p> <ul style="list-style-type: none"> • Full investigation and characterisation of the waste gas streams. • Abatement stack monitoring results (not limited to odour and ammonia) • Abatement process monitoring results (not limited to odour and ammonia) • An assessment of whether the gas storage membranes are being operated in accordance with the manufacturer's instructions, what the design efficiency of them is, whether they are achieving this and whether and if so how performance can be improved. • Details of air quality quantitative impact assessment including modelling and a proposal for site-specific "action levels" (not limited to odour concentration, hydrogen sulphide and ammonia). • Odour monitoring results at the site boundary • Records of odour complaints and odour related incidents 	29/04/2026 or other date as agreed in writing with the Environment Agency (2 years from permit issue)

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<ul style="list-style-type: none"> • Recommendations for improvement including the replacement or upgrading the abatement plant • Timescales for implementation of improvements to the abatement plant <p>The operator shall implement the improvements in line with the timescales as approved by the Environment Agency.</p>	
Improvement condition for review of abatement plant design		
IC3	<p>The operator shall submit to the Environment Agency a written review report of the design details of the site ventilation system and abatement plant and obtain the Environment Agency's written approval to it. The report shall include but not limited to:</p> <ol style="list-style-type: none"> a) Ventilation design performance criteria for effective fugitive odorous emission control b) Design of the abatement systems that will ensure compliance with the odour condition 3.3. The report shall include a demonstration (whether by a detailed review of technical papers or by trial results) that all odorous chemical compounds and their loading rates expected in the relevant air streams have been considered in the design; and supporting evidence that the odorous compounds will be controlled and/or abated either by operating techniques or by the proposed abatement systems. c) Design alarms and triggers for each relevant scenario to alert the operator to the malfunction of both ventilation and abatement systems. The report should further list all relevant contingency mitigation actions to minimise risk of elevated odour pollution from the installation linked to each malfunction scenario and detail the actions to restore systems to normal operating conditions for effective odour control. <p>Ventilation and abatement systems should be designed by suitably qualified named engineers who can supervise and sign-off on construction quality assurance</p>	<p>29/04/2026 or other date as agreed in writing with the Environment Agency</p> <p>(2 years from permit issue)</p>
Improvement condition to address methane slip emissions from gas engines burning biogas		
IC4	<p>The operator shall submit a written plan for approval by the Environment Agency which establishes the methane emissions in the exhaust gas from engines burning biogas and or biomethane and compare these to the manufacturer's specification and benchmark levels.</p> <p>The plan shall develop proposals to assess the potential for methane slip and take corrective actions where emissions of methane above the manufacturer's specification are identified.</p> <p>The operator shall establish methane emissions in the exhaust gas and methane slip using the following standards:</p> <ul style="list-style-type: none"> • EN ISO 25139 • EN ISO 25140 	<p>29/04/2026 or other date as agreed in writing with the Environment Agency</p> <p>(2 years from permit issue)</p>
IC5	<p>The operator shall establish a site-specific leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources. The programme shall include, but not be limited to an LDAR survey, diffuse emissions</p>	<p>29/04/2026 or other date as agreed in writing with the</p>

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<p>source inventory and associated monitoring arrangements. The programme shall be submitted to the Environment Agency for approval.</p> <p>The programme shall take into account the appropriate measures for LDAR plans specified in Section 11.9 of <i>Environment Agency guidance, Biological waste treatment: appropriate measures for permitted facilities</i>.</p> <p>The operator shall also have regard to BS EN 17628 when designing the LDAR programme and consider the use of optical gas imaging cameras in addition to the mandatory application of 'sniffer' techniques according to BS EN 15446.</p>	<p>Environment Agency (2 years from permit issue)</p>

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Vegetable matter (energy crops and residues)	Substantially free of non-vegetable matter
Maize silage	Substantially free of non-vegetable matter
Safe storage of activated carbon	As per manufacturer's instructions

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	The total annual throughput of waste and non-waste feedstock shall not exceed 30,000 tonnes. Daily biological treatment capacity shall be no more than 100 tonnes per day including waste and non waste solids and liquids.
Exclusions	Wastes having any of the following characteristics shall not be accepted: <ul style="list-style-type: none"> • biodegradable wastes that is significantly contaminated with non-compostable or non-digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • wastes containing wood-preserving agents or other biocides and post-consumer wood • wastes containing persistent organic pollutants • wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019 (formerly the EU Invasive Alien Species legislation) • pest infested waste • manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013.
Waste code	Description
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 01	sludges from washing and cleaning – vegetables, fruit and other crops
02 01 02	animal tissue waste
02 01 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled fully degradable animal bedding only)
02 01 07	wastes from forestry
02 01 99	wastes not otherwise specified – spent mushroom compost from commercial mushroom growing only
02 02	wastes from the preparation and processing of meat, fish and other foods of animal origin
02 02 01	sludges from washing and cleaning peeling, centrifuging and separation including wash waters and sludges from secondary food processing or the cook chill sector
02 02 02	animal tissue waste
02 02 03	materials unsuitable for consumption or processing- including animal gut contents
02 02 04	sludges from on-site effluent treatment including sludges from gelatine production
02 03	wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 03 04	materials unsuitable for consumption or processing (including waste from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	The total annual throughput of waste and non-waste feedstock shall not exceed 30,000 tonnes. Daily biological treatment capacity shall be no more than 100 tonnes per day including waste and non waste solids and liquids.
Exclusions	Wastes having any of the following characteristics shall not be accepted: <ul style="list-style-type: none"> • biodegradable wastes that is significantly contaminated with non-compostable or non-digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • wastes containing wood-preserving agents or other biocides and post-consumer wood • wastes containing persistent organic pollutants • wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019 (formerly the EU Invasive Alien Species legislation) • pest infested waste • manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013.
Waste code	Description
02 03 05	sludges from on-site effluent treatment (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 04	wastes from sugar processing
02 04 03	sludges from on-site effluent treatment
02 05	wastes from the dairy products industry
02 05 01	materials unsuitable for consumption or processing - biodegradable wastes derived from the processing of dairy products only
02 05 02	sludges from on-site effluent treatment
02 06	wastes from the baking and confectionery industry
02 06 01	materials unsuitable for consumption or processing - biodegradable wastes from the processing of materials used in baking and confectionary
02 06 03	sludges from on-site effluent treatment - sludges from the processing of materials used in baking and confectionary
02 07	wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials - biodegradable wastes from the processing of the raw materials used in the production of such beverages only (wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa))
02 07 02	wastes from spirits distillation - malt husks, malt sprouts, yeast and yeast-like residues, sludge from production process, or malt husks, malt sprouts, yeasts and yeast-like residues only
02 07 04	materials unsuitable for consumption or processing - biodegradable wastes from the processing of the raw materials used in the production of such beverages only (wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa))
04	Wastes from the leather, fur and textile industries
04 02	wastes from the textile industry

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	The total annual throughput of waste and non-waste feedstock shall not exceed 30,000 tonnes. Daily biological treatment capacity shall be no more than 100 tonnes per day including waste and non waste solids and liquids.
Exclusions	Wastes having any of the following characteristics shall not be accepted: <ul style="list-style-type: none"> • biodegradable wastes that is significantly contaminated with non-compostable or non-digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • wastes containing wood-preserving agents or other biocides and post-consumer wood • wastes containing persistent organic pollutants • wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019 (formerly the EU Invasive Alien Species legislation) • pest infested waste • manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013.
Waste code	Description
04 02 10	organic matter from natural products, e.g. grease, wax
15	Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
15 01	waste packaging (including separately collected municipal packaging waste)
15 01 01	paper and cardboard packaging (excluding veneers, plastic coatings or laminates) certified to EN 13432 or equivalent certified compostable or digestible standard
15 01 02	plastic packaging – compostable plastics only certified to EN 13432 or equivalent certified compostable or digestible standard
15 01 03	wooden packaging – virgin timber only
15 01 05	composite packaging meeting EN 13432 or equivalent certified compostable or digestible standard
19	Wastes 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 (including dechromatation, decyanidation, neutralisation)
19 02 10	glycerol not designated as hazardous i.e. excludes EWC 19 02 08
19 06	wastes from anaerobic treatment of waste
19 06 03	liquor from anaerobic treatment of municipal waste (from a process that treats wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste (from a process that treats wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 05	liquor from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only) and made up of previously pasteurised and stabilised batches only
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (previously digested sewage sludge only)

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	The total annual throughput of waste and non-waste feedstock shall not exceed 30,000 tonnes. Daily biological treatment capacity shall be no more than 100 tonnes per day including waste and non waste solids and liquids.
Exclusions	Wastes having any of the following characteristics shall not be accepted: <ul style="list-style-type: none"> • biodegradable wastes that is significantly contaminated with non-compostable or non-digestible contaminants, in particular plastic and litter shall be no more than 5% w/w and shall be as low as reasonably practicable by 31 December 2025. • wastes containing wood-preserving agents or other biocides and post-consumer wood • wastes containing persistent organic pollutants • wastes containing Japanese Knotweed or other invasive plant species listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019 (formerly the EU Invasive Alien Species legislation) • pest infested waste • manures, slurries and spoiled bedding and straw from farms where animals have notifiable diseases as stipulated in the Animal By-Products (Enforcement) (England) Regulations 2013.
Waste code	Description
19 08	wastes from waste water treatment plants not otherwise specified
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water (from a process that treats wastes which are listed in this table only)
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20 01	separately collected fractions (except 15 01)
20 01 01	paper and cardboard packaging – excludes laminates such as Tetrapaks and must conform to BS EN 13432 equivalent certified compostable or digestible packaging only
20 01 08	biodegradable kitchen and canteen waste containing compostable plastics meeting EN 13432 or equivalent certified compostable or digestible packaging (Category 3 ABPR waste only)
20 01 25	edible oil and fat
20 01 38	wood – untreated wood or virgin timber only (where no non-biodegradable coating or preserving substances are present)
20 02	garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste
20 03	other municipal wastes
20 03 01	mixed municipal waste - only separately collected biodegradable wastes of types listed within this table, Table S2.2
20 03 02	waste from markets - allowed only if source segregated biodegradable fractions e.g. plant material, fruit and vegetables

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
Existing medium combustion plant which are engines fuelled on biogas (1 MW to 5 MW)						
A3 [Point A3 on site plan in Schedule 7]	CHP engine 1 stack Note 1	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Average over sample period	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³ Note 2			BS EN 14791
		Sulphur dioxide	162 mg/m ³ Note 3			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs including methane	1000 mg/m ³			--
A4 [Point A4 on site plan in Schedule 7]	CHP engine 2 stack Note 1	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Average over sample period	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³ Note 2			BS EN 14791
		Sulphur dioxide	162 mg/m ³ Note 3			
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs including methane	1000 mg/m ³			--
Emergency flare stack						
A2 [Point A2 on site plan in schedule 7]	Emergency flare stack Note 5	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Average over sample period (1 hour)	Note 6	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619
Other						
A1 [Point A1 on site]	Biofilter Stack	Hydrogen sulphide	No limit set	Average over	Once every 6 months	CEN TS 13649 for sampling

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
plan in schedule 7]				sample period		NIOSH 6013 for analysis
		Ammonia	20 mg/m ³	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
A5 [Point A5 on site plan in schedule 7]	Carbon filter on digester tank vent	Hydrogen sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for sampling NIOSH 6013 for analysis
		Ammonia	20 mg/m ³	Average over sample period	Once every 6 months	EN ISO 21877
		Odour concentration	No limit set	--	Once every 6 months	BS EN 13725
Gas pressure relief valve	Digesters storage tank(s) and gas delivery systems	Biogas release and operational events	Within plant design	Continuous		SCADA
Vents from tank(s)	Oil/Fuel Storage tank(s)	No parameter set	No limit set	--	--	As per Condition 3.2.1 and 3.2.2
<p>Monitoring is undertaken in accordance with Monitoring stack emissions: environmental permits (formerly M2) and monitoring is undertaken in accordance with guidance 'Monitoring Stack emissions: low risk MCPs and specified generators (formerly M5)'. Note 1 – These emission limits are based on normal operating conditions and load - temperature 0°C (273 K); pressure 101.3 kPa and oxygen 5% (for gas engines burning biogas) and oxygen 3% (for medium combustion plants other than engines and gas turbines burning biogas). Note 2 – This emission limit applies until 31 December 2029, unless the gas engine is replaced. Note 3 – This emission limit applies from 1 January 2030, unless otherwise advised by the Environment Agency. Note 5 –These emission limits are based on normal operating conditions and load - temperature 0°C (273K); pressure 101.3 kPa and oxygen 3%. Note 6 – Following commissioning, monitoring to be undertaken in the event the emergency flare has been operational for more than 10 per cent of a year (876 hours). Record of operating hours to be submitted annually to the Environment Agency.</p>						

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 on Drainage plan in Schedule 7 emission point to foul sewer (50986) Wessex Water Services Limited	Surface water only	No parameter set	No limit set	--	--	--

Table S3.3 Process monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Digester feed (digestion process)	pH	As described in site operating techniques	As described in site operating techniques	Process monitoring to be recorded using a SCADA system where relevant.
	Alkalinity			
	Temperature			
	Hydraulic loading rate			
	Organic loading rate			
	Volatile fatty acids concentration			
	Ammonia			
	Liquid /foam level			
Biogas	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant. Gas monitors to be calibrated every 6 months or in accordance with the manufacturer's recommendations.
	Methane	Continuous	None specified	
	CO ₂	Continuous	None specified	
	O ₂	Continuous	None specified	
	Hydrogen sulphide	Daily	None specified	
	Pressure	Continuous	None specified	
Digestate batch	Volatile fatty acids concentration	One sample at the end of each batch (hydraulic retention time) cycle.	As described in site operating techniques	--
	Ammonia			

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Digester(s) and storage tank(s)	Integrity checks	Weekly	Visual assessment	--
Digester(s)	Agitation /mixing	Continuous	Systems controls	Records maintained in daily operational records.
	Tank capacity and sediment assessment	Once every 5 years from date of commission	Non-destructive pressure testing integrity assessment every 5 years or as specified by manufacturers technical specification.	In accordance with design specification and tank integrity checks.
Waste reception building or area; Digester(s) and storage tank(s)	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary.
Diffuse emissions from all sources identified in the Leak Detection and Repair (LDAR) programme	VOCs including methane	Every 6 months or otherwise agreed in accordance with the LDAR programme	'Sniffing; and/or Optical Gas Imaging techniques in accordance with BS EN 15446 and BS EN 17628	Monitoring points as specified in a DSEAR risk assessment and LDAR programme. Limit as agreed with the Environment Agency as a percentage of the overall gas production
CHP engine stack(s)	VOCs including methane	Annually	BS EN 12619	Total annual VOCs emissions from the CHP engine(s) to be calculated and submitted to the Environment Agency.
	Exhaust gas temperature		Traceable to National Standards	

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Exhaust gas pressure		Traceable to National Standards	Unless gas is dried before analysis of emissions.
	Exhaust gas water vapour content		BS EN 14790-1	
	Exhaust gas oxygen		BS EN 14789	
	Exhaust gas flow		BS EN 16911-1	
Meteorological conditions	Wind speed, air temperature, wind direction	Continuous	Method as specified in management system	Conditions to be recorded in operational diary and records. Equipment shall be calibrated on a 4 monthly basis, in accordance with manufacturer's recommendations or as agreed in writing by the Environment Agency.
Auxiliary flare usage	Operating hours	Continuous	Recorded duration and frequency. Recording using a SCADA system or similar system	Date, time and duration of use of auxiliary flare shall be recorded.
	Quantity of gas sent to emergency flare			Quantity can be estimated from gas flow composition, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions.
Pressure relief valves and vacuum systems – continuous monitoring	Gas pressure	Continuous	Recording using a SCADA system	Continuous gas pressure shall be monitored.
	Re-seating	Weekly inspection	Visual and gas pressure	Operator must ensure that valves are re-seated after

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				release in accordance with the manufacturer's design.
	Inspection, maintenance, calibration, repair and validation	Following foaming or over topping or at 3 yearly intervals whichever is sooner	Written scheme of examination	<ul style="list-style-type: none"> - After a foaming event or sticking, build-up of debris, obstructions or damage - Operators must ensure that PRV function remains within designed operation gas pressure in accordance with the manufacturer's design by suitably trained and qualified personnel. Requirements as for maintenance.
	Inspection calibration and validation report	In accordance with design and construction specifications or after over topping or foaming event		
Primary containment and tank integrity	Tank integrity	Daily operational records of capacity and storage	Inspect tank integrity in accordance with the design specification	Assess sediment build up and remove sediment as appropriate. From the date of commission inspect the tank and carry out a non-destructive pressure testing integrity assessment 5 yearly or as specified by the manufacturer's technical specification, whichever is more frequent.
Storage tank	Volume	Daily	Visual or flow metre measurement	750 mm freeboard must be maintained according to design capacity, or where an associated alarm and cut-out system is in place to protect against

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				over-filling storage tanks must have a freeboard as recommended by the plant manufacturer. Maintain a record.
Gas pressure	Digesters storage tank(s) and gas delivery systems	Biogas release and operational events	Within plant design	Continuous
Odour abatement plant				
Closed biofilters				
Biofilter 1	Gas temperature – inlet and outlet	Continuous	Temperature probe / Traceable to national standards	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content.
	Biofilter media moisture	Daily	Moisture meter or recognised industry method	
	Thatching /compaction	Weekly	Back pressure	Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter / EN 16911-1 and MID for EN 16911-1	
	pH (biofilter drainage effluent)	Weekly	pH metre	
	Efficiency assessment	Annual	Media health, air-flow distribution and emission removal efficiency (BS EN 13725 for odour removal)	Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	CEN TS 13649 for sampling NIOSH 6013 for analysis	Action levels to be agreed on completion of IC2 as approved in writing by the

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
	Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	BS EN 13725	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.2 and the odour management plan.
Scrubber (water)				
Scrubber	Gas temperature – inlet and outlet	Continuous	Temperature probe / Traceable to national standards	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content. Odour abatement plant shall be
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter / EN 16911-1 and MID for EN 16911-1	

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Moisture content or humidity – outlet	Daily	Moisture meter	managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	Back pressure	Weekly	Pressure differential using sensors	
	Efficiency assessment	Annual	Emission removal efficiency (BS EN 13725 for odour removal)	
	pH scrubber solution (pre-abatement)	Continuous	pH meter	
	pH scrubber solution (post-abatement)	Continuous	pH meter	
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	As per Odour Management Plan.	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.3 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.3 and the odour management plan.
Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in	BS EN 13725	Action levels to be agreed on completion of IC2	

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
		writing by the Environment Agency.		as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.3 and the odour management plan.
Carbon filters				
Carbon filter	Carbon bed temperature – inlet and outlet	Continuous	Temperature probe	Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.
	Gas flow rate – inlet and outlet	Continuous	Gas flow meter	
	Moisture or humidity	Daily	Moisture meter	
	Back pressure	Weekly	Recognised industry method	
	Efficiency assessment	Annual	Emission removal efficiency (BS EN 13725 for odour removal)	Carbon filter(s) to be replaced in accordance with manufacturer's recommendations. Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	As per Odour Management Plan.	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				permit condition 3.3 and the odour management plan.
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	EN ISO 21877	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.3 and the odour management plan.
	Odour concentration – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	BS EN 13725	Action levels to be agreed on completion of IC2 as approved in writing by the Environment Agency. Action levels to be achieved in accordance with permit condition 3.3 and the odour management plan.

Table S3.4 Bioaerosols monitoring requirements – ambient monitoring					
Location or description of point of measurement	Parameter	Bioaerosols action levels (CFU m⁻³)	Monitoring frequency	Monitoring standard or method	Other specifications
Upwind of the operational area, as described in the Technical Guidance Note M9	Total bacteria	1000 ^{Note 1}	Twice a year unless another frequency is required and agreed in writing by the Environment Agency ^{Note 2}	In accordance with Technical Guidance Note M9 – Environmental monitoring of bioaerosols at regulated facilities.	As described in the Technical Guidance Note M9, including all the additional data requirements specified therein.
Downwind of the operational area, as described in the Technical Guidance Note M9	Aspergillus Fumigatus	500 ^{Note 1}			
<p>Note 1 – The bioaerosols action levels are only applicable at downwind sampling locations equivalent to the distance of the nearest sensitive receptor. Where these action levels are elevated, the operator must take action to mitigate the impact on sensitive receptors. Assessment of compliance will be based on risk and in line with guidance.</p> <p>Note 2. Where the bioaerosols action levels are exceeded, then monitoring shall be completed as agreed in writing by the Environment Agency.</p>					

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air from combustion plant Parameters as required by condition 3.5.1.	A2, A3, A4	Every 12 months	1 January
Emissions to air from odour abatement plant and Carbon filter Parameters as required by condition 3.5.1.	A1, A5	Every 6 months	1 January, 1 July
Process monitoring Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.3	Every 12 months	1 January
Total annual VOCs emissions from gas engines (calculated)	As specified in schedule 3 table S3.3	Every 12 months	1 January
Digester tank integrity	In accordance with schedule 3 table 3.4	5-yearly from the date of commission or as per the manufacturer's recommendation, whichever is sooner	1 January
Under and over pressure relief systems	In accordance with schedule 3 table 3.4	Yearly summary report of over-pressure and under-pressure events detailing mass balance release	1 January
Pressure relief systems (inspection, calibration and maintenance)	In accordance with schedule 3 table 3.4	Every 3 years	1 January
Leak detection and repair surveys	In accordance with schedule 3 table 3.4	Every 12 months LDAR report to be submitted annually	1 January
Use of auxiliary flare and burning surplus gas	In accordance with schedule 3 table 3.4	Yearly summary report	1 January
Bioaerosols monitoring Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.4	As per condition 3.6.2, if action levels are being exceeded notify the Environment Agency. Reporting should be submitted	Within 1 month of monitoring being completed or as agreed in writing by the Environment Agency

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
		within 1 month of monitoring being completed or as agreed in writing by the Environment Agency	
Waste and output returns	In accordance with conditions 4.2.4, 4.2.5 and 4.2.6	Quarterly – within one month of the end of each quarter	1 January, 1 April, 1 July, 1 October
Medium combustion plant and generators	In accordance with Schedule 3 table 3.1	Each year on 31 January detailing date commissioned location, serial number and thermal input for each unit as detailed in Appendix A. New plant must be notified in accordance with rule 4.3.7	
Non-compostable contamination removal efficiency Parameters as required by conditions 4.2.6		Every 12 months Yearly report of detailing contamination removal efficiency and progress with plastic reduction contamination	

Table S4.2 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Emissions to Air Reporting Form or other form as agreed in writing by the Environment Agency	DD/MM/YYYY
Bioaerosols	As specified in the Technical Guidance Note M9 or other form as agreed in writing by the Environment Agency	DD/MM/YYYY
Process monitoring	Form process 1 or other form as agreed in writing by the Environment Agency	DD/MM/YYYY
Waste returns	E-waste Return Form or other form as agreed in writing by the Environment Agency	--
Medium combustion plant and generators	Appendix A	

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“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 anaerobes and facultative anaerobe bacteria species, which convert the inputs to a methane-rich biogas and whole digestate.

“Annex I” means Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Annex II” means Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“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.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“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.

“bioaerosols action levels” mean the acceptable bioaerosols concentrations at the nearest sensitive receptor, or at an equivalent distance downwind of the biowaste treatment operations, which are attributable to the biowaste treatment operations. The acceptable concentrations are respectively 1000 and 500 CFU m⁻³ for total bacteria and *Aspergillus fumigatus*. Where these action levels are elevated, the operator must take action to mitigate the impact on sensitive receptors.

“Biodegradable” means a material is capable of undergoing biological anaerobic or aerobic degradation leading to the production of CO₂, H₂O, methane, biomass, and mineral salts, depending on the environmental conditions of the process.

“building” means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.

“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.

“combined heat and power” (CHP) or Cogeneration means the simultaneous generation in one process of thermal energy and electrical or mechanical energy.

“compost” means a solid particulate material that is the result of composting, which has been sanitised and stabilised, and which confers beneficial effects when added to soil, used as a component of growing media or used in another way in conjunction with plants.

“compostable plastics” means plastics that are certified to meet the standards of EN 13432, EN 14995 or equivalent and is capable of breaking down by microbial digestion to create compost.

“composting” means the managed biological decomposition of biodegradable waste organic materials, under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat and that result in compost.

“composting batch” means an identifiable quantity of material that progresses through the composting system and when fully processed has similar characteristics throughout. For composting systems that operate on a continuous- or plug-flow basis, batches will be taken to mean a series of “portions of production”.

“diffuse emissions” mean non-channelled emissions (e.g. of dust, organic compounds, odour) which can result in ‘area’ sources (e.g. tanks) or ‘point’ sources (e.g. pipe flanges). This also includes emissions from open-air windrow composting.

“digestate” means material resulting from an anaerobic digestion process.

“disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“existing medium combustion plant” means an MCP which was put into operation before 20 December 2018.

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

“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.

“impermeable surface” means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“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 14 and section 6.6.2 of the Waste Treatment BAT Conclusions.

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

“medium combustion plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“new medium combustion plant” means an MCP which was put into operation after 20 December 2018. This includes replacement MCP and Generators.

“operational area” means any part of a facility used for the handling, storing and treatment of waste.

“operator” means in relation to a regulated facility:

- (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

“pests” 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.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“sanitisation” means the actively managed and intensive stage of composting, lasting for at least 5 days, characterised by high oxygen demand and temperatures of over 55°C, during which biological processes, together with conditions in the composting mass, eradicate human and animal pathogens or reduce them to acceptably low levels.

“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:

- no liquids will run off the surface otherwise than via the system
- all liquids entering the system are collected in a sealed sump, except where liquids may be lawfully discharged to foul sewer.

“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 EPR.

“stable, stabilised” means the degree of processing and biodegradation at which the rate of biological activity has slowed to an acceptably low and consistent level and will not significantly increase under favourable, altered conditions.

“stabilisation stage” means the stage of composting following sanitisation, during which biological conditions in the composting mass, give rise to compost that is nominally stable.

“treated wood” is any wood that has been chemically treated (e.g. to enhance or alter the performance of the original wood). Treatments may include penetrating oils, tar oil preservatives, waterborne preservatives, organic-based preservatives, boron and organo-metallic based preservatives, boron and halogenated flame retardants and surface treatments (including paint and veneer)

“VOC” means Volatile organic compounds as defined in Article 3(45) of Directive 2010/75/EU – ‘volatile organic compound’ means any organic compound as well as the fraction of creosote, having at 293.15K a vapour pressure of 0.01 kPa or more, or having a corresponding volatility under the particular conditions of use.

“waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“year” means calendar year ending 31 December.

When the following terms appear in the waste code list in Schedule 2, table S2.2 for that table, they have the meaning given below:

“hazardous substance” means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008.

“heavy metal” means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances.

“PCBs” means

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 %by weight.

“transition metals” means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances.

“stabilisation” means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste.

“solidification” means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste.

“partly stabilised wastes” means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term.

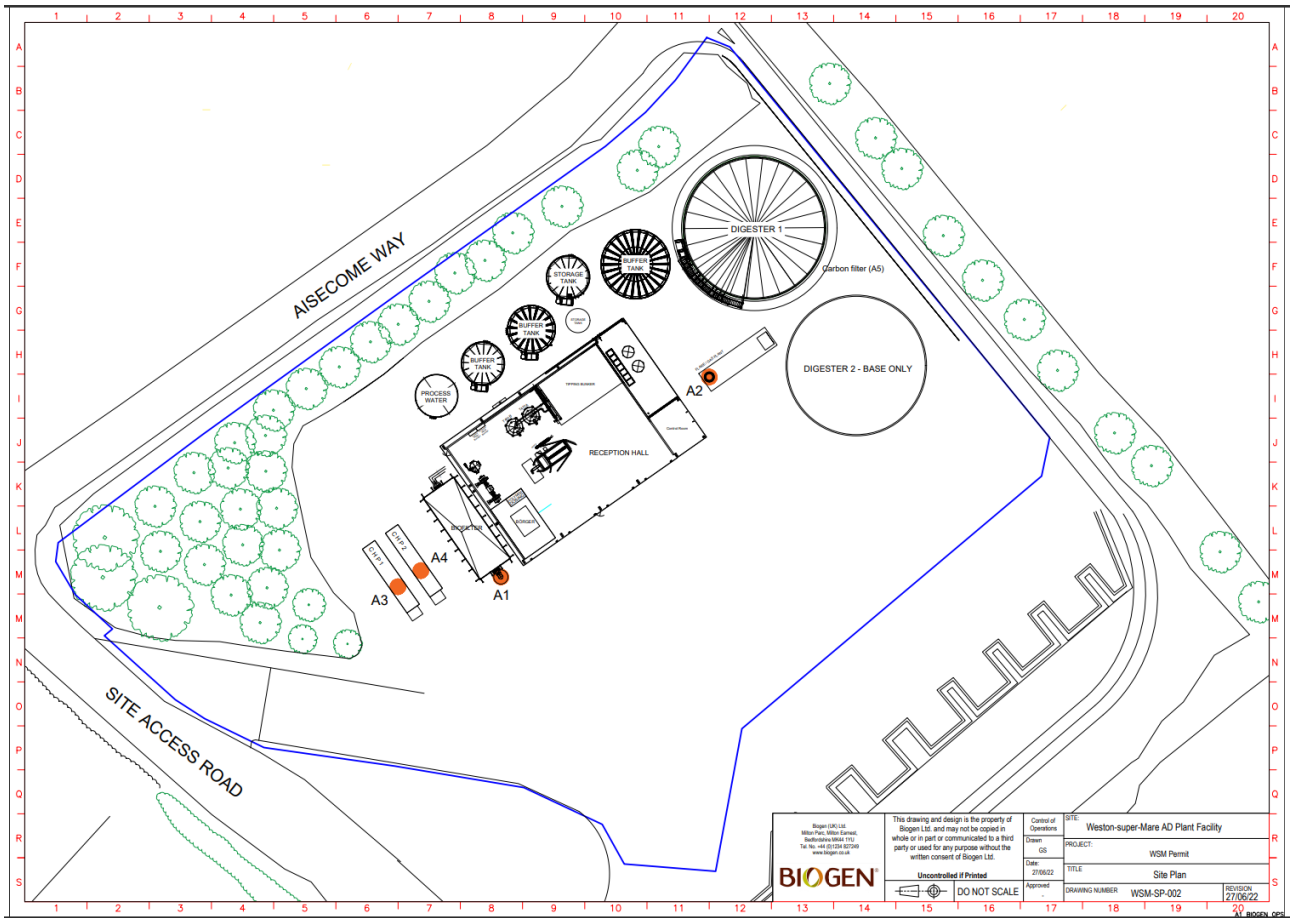
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid fuels and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

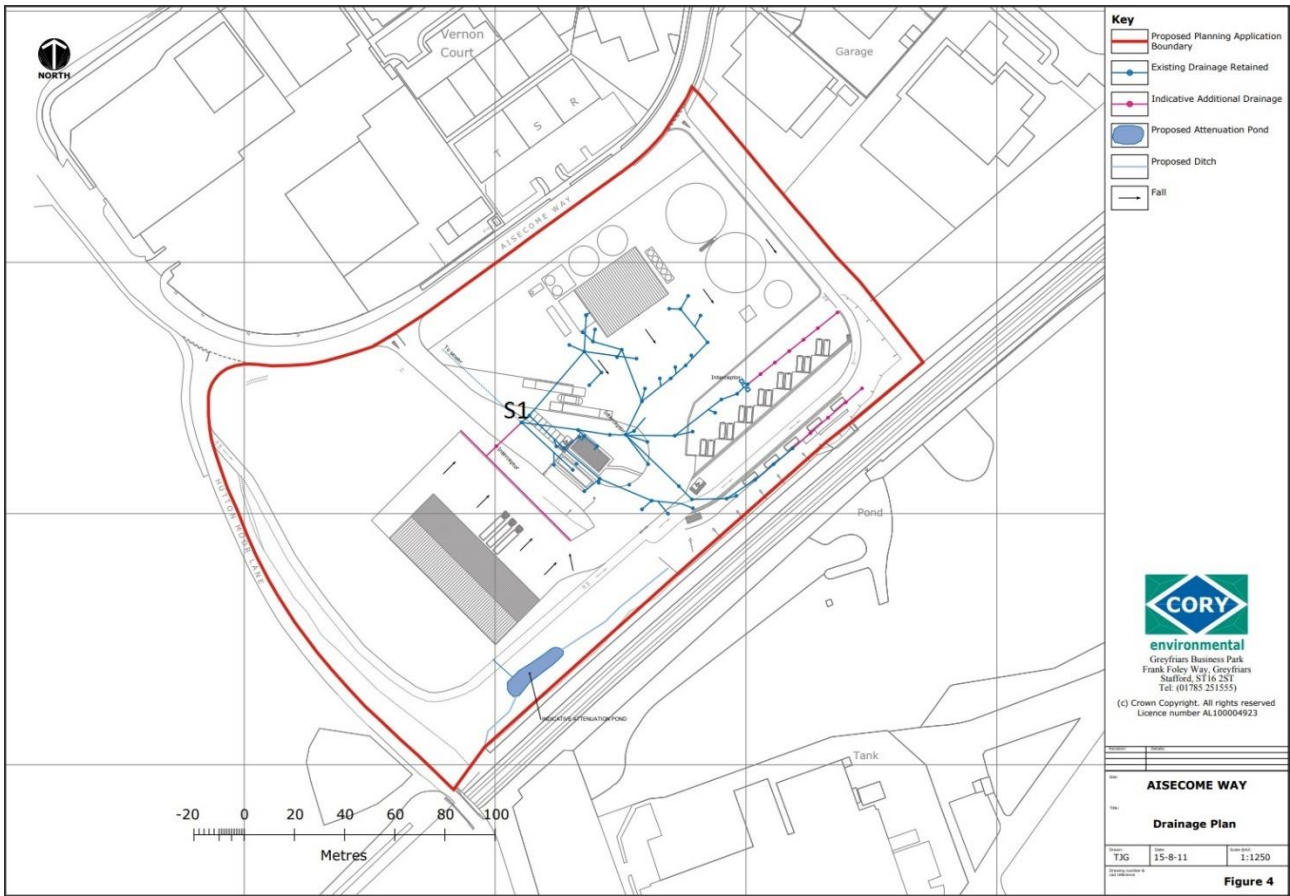
Schedule 7 – Site plan

Site plan



<p>Biogen (UK) Ltd. Weston Park, Weston-Super-Mare, Bathurst Way, Weston-Super-Mare, The Vale, Somerset BA21 4JH www.biogen.co.uk</p> <p>BIOGEN</p>	<p>This drawing and design is the property of Biogen Ltd. and may not be copied in whole or in part or communicated to a third party or used for any purpose without the written consent of Biogen Ltd.</p>	<p>Control of Operations Drawn GS Date: 21/06/22 Approved</p>	<p>SITE: Weston-super-Mare AD Plant Facility PROJECT: WSM Permit TITLE: Site Plan DRAWING NUMBER: WSM-SP-002 REVISION: 27/06/22</p>	
	<p>Uncontrolled if Printed</p>	<p>DO NOT SCALE</p>	<p>20</p>	
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Drainage Plan



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