

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Sutton Grange AD Limited

Retford Anaerobic Digestion Facility Sutton Grange Sutton-Cum-Lound Retford Nottinghamshire DN22 8SB

Variation application number

EPR/TP3236NK/V005

Permit number

EPR/TP3236NK

Retford Anaerobic Digestion Facility Permit number EPR/TP3236NK

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/statutory review

The Industrial Emissions Directive (IED) came into force on 7 January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) Conclusions as described in the Commission Implementing Decision. Article 21(3) of the IED requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. The BAT Conclusions for Waste Treatment (the BREF) was published on 17 August 2018 following a European Union wide review of BAT, implementing decision (EU) 2018/1147 of 10 August 2018.

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

- the bioaerosols monitoring and compliance with M9 bioaerosols monitoring requirements;
- the design and construction of secondary containment and storage lagoons;
- the available storage facilities and measures to reduce ammonia emissions from storage; and
- information on existing medium combustion plant and/or specified generators on site.

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 process

The facility is located adjacent to the existing Sutton Grange Farm, 7.5 km north west of Retford and south east of the village of Lound at grid reference SK 69823 85548. The facility is bound to the north by main Tarmac Plant buildings off Chain Bridge and David Lees Concrete Plant; to the south by farmland; to the east by sand and gravel pits; to the west by shrubs and trees.

The proposed facility is designed to process up to 87,000 tonnes per annum of predominantly maize silage and agricultural-sourced wastes (chicken litter, vegetable trimmings and dairy waste). The facility will comprise the following operations:

- Anaerobic digestion (AD) plant
- Combined heat and power (CHP) plant (including an emergency flare and a boiler)

Under the Environmental Permitting Regulations, the installation activity is defined as Section 5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.

Deliveries of maize silage are stored in the existing silage clamp adjacent to the waste reception building. Liquid feedstock is delivered via tankers and pumped to storage tanks. Chicken litter and vegetable trimmings are deposited in the enclosed waste reception building. The waste reception building is equipped with an extraction ventilation system which extracts air to a biofilter that treats odour emissions prior to discharge to atmosphere. Vegetable waste and maize silage is fed to the bio-feeding hoppers to ensure the optimum particle size is achieved prior to digestion. Chicken litter is fed to the nitrogen extraction (NiX) cooker to remove ammonia. The resulting feedstock is transferred to the primary and secondary digesters where it undergoes digestion at 38°C for about 28 to 35 days.

Biogas drawn off from the digesters is used to generate electricity and heat from two CHP engines with an aggregated thermal input of 7 MW and a boiler (1.7 MW). The heat produced from the engines is recovered and integrated in the process heating requirements including pasteurization of waste as required by the Animal By-Products Regulations. The by-product from the process (digestate) is separated and stored in an enclosed building (solid fraction) or in a tank (liquid fraction) prior to despatch off-site as a soil conditioner. The spreading of digestate on land is not included or authorised by this Environmental Permit.

Main releases to the environment are to air via combustion of biogas. Uncontaminated site surface water is directed to a surface water attenuation pond after passing through a hydrocarbon interceptor. Excess uncontaminated site surface water is discharged off-site to a nearby Lake (NGR: SK 69702 85425). Process effluent from the anaerobic digestion operation is re-circulated within the AD process.

There are no European habitat sites (Special Protection Areas, Special Areas of Conservation or Ramsar) within 10 km from the Installation. Sutton and Lound Gravel Pits, a Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR) is located 704 metres from the Installation. There are three local wildlife sites located within 2 km of the Installation. Assessment by the Environment Agency shows that emissions from activities undertaken at the Installation are unlikely to have a significant impact on the habitat sites.

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	
Application received	Duly made 02/08/2013	Application for a new Environmental Permit.	
Additional information received	11/10/2013	Revised odour modelling report and model input files.	
Additional information received	04/11/2013	Clarification of information in relation to aspects of the Application.	
Additional information received	13/11/2013	Grid reference of outfall from site and adjacent Lake.	
Additional information received	18/11/2013	Planning permission.	
Additional information received	20/11/2013	Biofilter design specification, clarification on raw material, Hazop details, commissioning plan (Phase 1).	
Additional information received	28/11/2013	Revised odour management plan.	
Permit determined EPR/TP3236NK	16/12/2013	Original permit issued to Sutton Grange AD Limited.	

Status log of the permit				
Description	Date	Comments		
Application EPR/TP3236NK/V002	Duly made 12/12/2014	Application for an admin variation to add an additional waste stream, defined by code: 19 12 12.		
Variation determined EPR/TP3236NK/V002	28/01/2015	Varied permit issued.		
Application EPR/TP3236NK/V003 (variation)	Duly made 20/06/2017	Application for an admin variation to add five waste streams.		
Additional information	03/08/2017	Additional six waste streams requested and justification for administrative variation.		
Additional information	08/08/2017	Confirmation of removal of one requested waste stream 02 06 99.		
Variation determined EPR/TP3236NK	15/08/2017	Varied permit issued.		
Notified of change of registered office address	20/02/2018	Registered office address changed to C/O Biogen, Milton Parc, Milton Ernest, Bedford, MK44 1YU		
		EPR/TP3236NK/V004		
Variation determined EPR/TP3236NK/V004	26/02/2018	Varied permit issued to Sutton Grange AD Limited		
Regulation 61 Notice sent to Operator	20/01/2020	Regulation 61 Notice requiring information for statutory review of permit.		
Regulation 61 Notice response	20/07/2020	Response received from the operator.		
Application EPR/TP3236NK/V005 (variation and consolidation)	Environment Agency Initiated Variation	Statutory review of permit occasioned by Waste Treatment BAT Conclusions published on 17 August 2018.		
Environment Agency Biowaste Treatment Sector Review Permit reviewed Variation determined EPR/TP3236NK (Billing Ref: HP3202LG)	28/04/2022	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/TP3236NK

Issued to

Sutton Grange AD Limited ("the operator")

whose registered office is

C/O Biogen Milton Parc Milton Ernest Bedford MK44 1YU

company registration number 07948621

to operate a regulated facility at

Retford Anaerobic Digestion Facility Sutton Grange Sutton-Cum-Lound Retford Nottinghamshire DN22 8SB

to the extent set out in the schedules.

The notice shall take effect from 28/04/2022.

Name	Date
Rebecca Warren	28/04/2022

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/TP3236NK

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/TP3236NK/V005 authorising,

Sutton Grange AD Limited ("the operator"),

whose registered office is

C/O Biogen Milton Parc Milton Ernest Bedford MK44 1YU

company registration number 07948621

to operate an installation at

Retford Anaerobic Digestion Facility Sutton Grange Sutton-Cum-Lound Retford Nottinghamshire DN22 8SB

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

Name	Date
Rebecca Warren	28/04/2022

Authorised on behalf of the Environment Agency

Conditions

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 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.

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 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.

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 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 S1.2, 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 S1.2 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 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 Waste shall only be accepted if:
 - (a) it is of a type and quantity listed in schedule 2 table S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
 - (c) the facility has sufficient free capacity to store and treat the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
 - (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and
 - (e) the waste code of the waste.
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.7 Waste pre-acceptance and acceptance procedures shall be undertaken in accordance with best available techniques.

- 2.3.8 For the following activities referenced in schedule 1, table S1.1 (AR4):
 - (a) each MCP 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 MCP 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.

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.
- 3.1.3 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.

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 shall implement a leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources.

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.

3.4 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 and S3.2;
 - (b) process monitoring specified in table S3.3.
- 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 condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, 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 table S3.1 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 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-infected 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 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 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 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.
- 3.7.3 The operator shall undertake a DSEAR assessment and maintain an accident management plan.

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 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
 - (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
 - (b) the annual production/treatment data set out in schedule 4 table S4.2; and

- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- 4.2.3 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 S4.4; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 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.
- 4.2.5 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.
- 4.2.6 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 maintained for at least 2 years.
- 4.2.7 The operator shall submit an annual report 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 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 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, 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 Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.
- 4.3.8 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 "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

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
AR1	S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.	R3: Recycling/reclamation of organic substances which are not used as solvents	From receipt of waste through to digestion and recovery of by-products (digestate). From the receipt of energy crops and wastes through to its digestion and recovery of by-products (digestate) from the installation. Anaerobic digestion of waste in four tanks followed by burning of biogas produced from the process. Waste types suitable for acceptance are limited to those specified in Table
	Directly Associated Activity	4	S2.2.
AR2	Storage of waste pending recovery or disposal	R13: Storage of waste pending the operations numbered R1 and R3 (excluding temporary storage, pending collection, on the site where it is produced)	From the receipt of permitted waste to pre- treatment and despatch for anaerobic digestion on site. Storage of residual wastes from pre-treatment to despatch off-site for recovery. Storage of waste in an enclosed building fitted with appropriate odour abatement and on an impermeable surface with sealed drainage. Waste types suitable for acceptance are limited to those specified in Table S2.2
AR3	Physical treatment for the purpose of recycling	R3: Recycling/reclamation of organic substances which are not used as solvents	From the receipt of waste to despatch for anaerobic digestion or despatch off site for recovery.

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
			Pre-treatment of energy crop and waste in enclosed building fitted with appropriate odour abatement and on impermeable surface with sealed drainage system including shredding, sorting screening, compaction, baling, mixing and maceration.
			Post-treatment of digestate in an enclosed building fitted with appropriate odour abatement and on an impermeable surface with sealed drainage system, including screening to remove contraries, centrifuge or pressing and addition of thickening agents (polymers) or drying for use as a fertiliser or soil conditioner (drying for the purpose of use as a fuel is not permitted).
			Heat treatment (pasteurisation) of waste in three tanks for the purpose of recovery.
			Raw materials specified in table S2.1. Energy crops shall be stored in covered silage clamps specified in the site plan (schedule 7).
			Gas cleaning by biological or physical (carbon filtration) or chemical scrubbing.
			Waste types suitable for acceptance are limited to those specified in Table S2.2.
AR4	Steam and electrical power supply	R1:Use principally as a fuel to generate energy	From the receipt of biogas produced at the on-site anaerobic digestion process to combustion with the

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
			release of combustion gases.
			Combustion of biogas in two combined heat and power (CHP) engines with an aggregated thermal input of 7 MW.
			Combustion of biogas in one auxiliary boiler with an aggregated thermal input of 1.7 MW.
AR5	Emergency flare operation	D10: Incineration on land	From the receipt of biogas produced at the on-site anaerobic digestion process to incineration with the release of combustion gases.
			Use of one auxiliary flare required only during periods of breakdown or maintenance of the CHP engines, biogas upgrading plant and/or auxiliary boilers.
AR6	Raw material storage	Storage of raw materials including energy crops, lubrication oil, antifreeze, propane, ferric chloride, activated carbon, diesel.	From the receipt of raw materials to despatch for use within the facility.
AR7	Gas 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	Storage of biogas produced from on-site anaerobic digestion of permitted waste in the roof space of one digester.
		produced)	From the receipt of biogas produced at the on-site anaerobic digestion process to despatch for use within the facility.
AR8	Digestate 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)	From the receipt of processed uncertified digestate produced from the on-site anaerobic digestion process to despatch for use off-site.

Table S1.1 ac	Table S1.1 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	
			Storage of processed uncertified liquid digestate in one storage tank.	
			Storage of processed uncertified solid digestate in one building and on an impermeable surface with a sealed drainage system.	
AR9	Surface water collection and storage	Collection and storage of uncontaminated roof and site surface water in one sub-surface sump.	From the collection of uncontaminated roof and site surface water from non- operational areas only to re- use within the facility or discharge off-site.	
AR10	Air treatment	Collection and treatment of air from the buildings or plant using abatement system – [biofilters] prior to release to atmosphere.	From the collection of air from site processes to treatment and release of treated air to atmosphere.	

Table S1.2 Operating techniques			
Description	Parts	Date Received	
Application EPR/TP3236NK/A001	WAMITAB certificate in response to section 3b, Part B2 of the application form.	19/09/2013	
	CRM.054.001.R.004 in response to section 3d, Part B2 of the application form.		
	Chapter 6 – Drawings in response to section 6a, Part B2 of the application form.		
	CRM 054 001 R 002 in response to section 6b, Part B2 of the application form.		
	CRM 054 001 R 001 in response to section 6c, Part B2 of the application form.		
	CRM 054 001 R 003 in response to section 7, Part B2 and section 1, Part B3 of the application form.		
	CRM 054 001 R 004 in response to sections 1, 3a, 3c, 4a, 6a, 6b and 6e of Part B3 of the application form.		
	CRM 054 001 R 005 and CRM 054 001 R 006 in response to section 3b, Part B3 of the application form.		
Additional information received	Revised odour modelling report	11/10/2013	

Table S1.2 Operating techniques			
Description	Parts	Date Received	
Response to request for additional information in email dated 21/10/13	Clarification of information in relation to aspects of the Application (NiX cooker, accident risk assessment, emergency flare, attenuation pond, pre-acceptance evaluation, noise from feeding hoppers, biogas clean-up system and secondary containment)	04/11/2013	
Additional information received	Grid reference of outfall from site and adjacent Lake	13/11/2013	
Additional information received	Biofilter design specification, clarification on raw material, Hazop details, commissioning plan (Phase 1)	20/11/2013	
Additional information received	Revised odour management plan	28/11/2013	
Response to Regulation 61 Notice dated 20/01/2020	 Annex 1 Returns Spreadsheet Compliance and operating techniques identified in response to BAT Conclusions 1 to 8, 10 to 24 and 33 to 38 in the Waste Treatment BREF published on 17 August 2018. 	Received 20/07/2020	

Reference	Requirement	Date
IC1	The operator shall review measures to reduce odour emissions during the handling and transfer of maize silage and vegetable waste from the silage clamp or delivery vehicles to the feeding hoppers located outside the reception building.	Withdrawn. Superseded by IC2, IC3, IC9 and IC10
	A written report of the review shall be submitted to the Environment Agency detailing the review's findings and recommendations. Remedial action shall be taken to ensure that the proposed odour reduction measures shall be in accordance with the Environment Agency's Horizontal Guidance H4 – <i>Odour Management</i> .	
Improvemen	t condition for progress report to achieve BAT-AELs	
IC2	The operator shall submit, for approval by the Environment Agency, a report which confirms that the site has achieved the Best Available Techniques Conclusion Associated Emission Levels (BAT-AELs) where BAT is currently not achieved, but will be achieved before 17 August 2022.	17/07/2022
	The report shall address the BAT Conclusions for Waste Treatment with respect to the following:	
	• BAT 34 Table 6.7 (compliance with BAT-AELs for channelled NH ₃ , odour, dust and TVOC emissions to air from the biological treatment of waste)	
	Refer to BAT conclusions as described in the Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 and published 17 August 2018, for a full description of BAT requirement.	
Improvemen	t condition for progress report to achieve Narrative BAT	
IC3	The operator shall submit, for approval by Environment Agency, a report which confirms that the "Narrative BAT" have been achieved	17/07/2022

Table S1.3 In	provement programme requirements	1
Reference	Requirement	Date
	where BAT is currently not achieved, but will be achieved before 17 August 2022.The report shall address the BAT Conclusions for Waste Treatment with respect to BAT 3, 8, 10, 14, 23, 33 and 34.	
	Refer to BAT Conclusions for a full description of the BAT requirement.	
	Refer to BAT conclusions as described in the Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 and published 17 August 2018, for a full description of BAT requirement.	
Improvement	t condition for site risk assessment to prevent soil & groundwater poll	ution
IC4	The operator shall submit to the Environment Agency for approval a risk assessment considering the possibility of soil and groundwater contamination at the installation where the activity involves the use, production or release of a relevant hazardous substance (as defined in Article 3(18) of the Industrial Emissions Directive). The risk assessment shall clearly establish with appropriate evidence whether or not there is a risk of contamination of soil and groundwater and should follow the Defra Guidance – Industrial Emissions Directive EPR Guidance on Part A Installations (Section 5.10-5.15, pages 28-29 - Baseline Reports and Permit Surrender).	28/04/2022 or other date as agreed in writing with the Environment Agency
IC5	 Where the risk assessment carried out under IC3 above establishes a risk to soil and groundwater, the operator shall: a) prepare and submit a baseline report compliant with Article 22 of the Industrial Emissions Directive (IED) containing information necessary to determine the current state of soil and groundwater contamination; or 	28/04/2022 or other date as agreed in writing with the Environment Agency
	 b) provide a summary report referring to information previously submitted where the operator is satisfied that such information represents the current state of soil and groundwater contamination, so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation of activity. 	
Improvement	t condition for primary containment	
IC6	The operator shall submit a written 'primary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of an inspection and program of works undertaken by a qualified engineer, and shall assess the extent design specification and condition of primary containment systems where polluting liquids and solids are being stored, treated, and/or handled.	28/04/2022 or other date as agreed in writing with the Environment Agency
	The plan shall include:	
	 an assessment of the physical condition of all primary containment systems (storage and treatment vessels) using a Written Scheme of Examination and their suitability for providing primary containment when subjected to the dynamic and static loads caused by catastrophic tank failure; 	
	 a program of works with timescales for the implementation of individual improvement measures necessary to demonstrate that the primary containment is fit for purpose or alternative 	

Reference	nprovement programme requirements	Date
Reference	Requirement appropriate measures to ensure all polluting materials will be	Date
	contained on site; and	
	a preventative maintenance and inspection regime	
	The plan shall be implemented in accordance with the Environment Agency's written approval.	
Improvemen	t condition for secondary containment design	
IC7	The operator shall submit a written 'secondary and tertiary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of an inspection and program of works undertaken by a competent structural engineer, in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance, of the condition and extent of secondary and tertiary containment systems where all polluting liquids and solids are being stored, treated, and/or handled.	28/04/2022 or other date as agreed in writing with the Environment Agency
	The inspection shall consider, but not be limited to, the storage vessels, bunds, loading and unloading areas, transfer pipework/pumps, temporary storage areas, and liners underlying the site.	
	The plan shall include:	
	 an assessment of the physical condition of all secondary and/or tertiary containment systems, using a Written Scheme of Examination and their suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure; a program of works with timescales for the implementation of individual improvement measures necessary for the secondary 	
	and/or tertiary containment systems to comply with CIRIA C736 (2014) guidance, or equivalent.	
	a preventative maintenance and inspection regime	
	The plan shall be implemented in accordance with the Environment Agency's written approval.	
Improvemen	t condition for digestate storage cover and operational storage capaci	ty
IC8	The operator shall provide a written "digestate storage plan" and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review of the current storage of digestate produced from site operations. The review shall examine site contingency arrangements in the event of closed landspreading periods, extreme weather conditions, site closure, and disease outbreak.	28/04/2022 or other date as agreed in writing with the Environment Agency
	The storage plan shall include:	
	 Existing cover arrangements on storage tanks used to store digestate to minimise odour, ammonia and methane emissions. 	
	 Additional storage capacity on-site (at least 2 months storage) and storage capacity off-site. 	

Table S1.3 In	nprovement programme requirements	
Reference	Requirement	Date
	 Identification of alternative outlets for digestate – identify companies/permitted waste facilities that would be able to manage the digestate, taking into account their permits and capacity constraints. 	
	The plan shall be implemented in accordance with the Environment Agency's written approval.	
Improvemen	t condition for review of effectiveness of abatement plant	
IC9	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.	28/04/2022 or other date as agreed in writing with the
	The operator shall submit a written report to the Environment Agency following this review for assessment and approval.	Environment Agency
	The report shall include but not limited to the following aspects:	
	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)	
	 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	
	Recommendations for improvement including the replacement or upgrading the abatement plant	
	Timescales for implementation of improvements to the abatement plant	
	The operator shall implement the improvements in line with the timescales as approved by the Environment Agency.	
Improvemen	t condition for review of abatement plant design	·
IC10	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.	28/04/2022 or other date as agreed in writing
	The report shall include but not limited to:a) Ventilation design performance criteria for effective fugitive	with the Environment Agency
	 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 	

Table S1.3 Improvement programme requirements						
Reference	Requirement	Date				
	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. 					
	Ventilation and abatement systems should be designed by suitably qualified named engineers who can supervise and sign-off on construction quality assurance.					
Improvement	condition for assessment of methane slip					
Improvement condition for assessment of methane slipIC11The operator shall establish the methane emissions in the exhaust gas from engines burning biogas and compare these to the manufacturer's specification and benchmark levels agreed in writing with the Environment Agency.The operator shall, as part of the methane leak detection and repair (LDAR) programme, develop proposals to assess the potential for methane slip and take corrective actions where emissions above the manufacturer's specification or appropriate benchmark levels are identified.		28/04/2022 or other date as agreed in writing with the Environment Agency				

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels				
Raw materials and fuel description	Specification			
Chemicals	Operational requirement only			
Fuel oil	Operational requirement only			
Maize silage	Substantially free of non-vegetable matter			

Table S2.2 Permitte	d waste types and quantities for anaerobic digestion
Maximum quantity	Annual throughput shall not exceed 87,000 tonnes
Exclusions	 Wastes having any of the following characteristics shall not be accepted: biodegradable wastes that is significantly contaminated with non- compostable or 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 Species (Amendment etc.) (EU Exit) Regulations 2019 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. pest infested waste
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 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled fully biodegradable animal bedding)
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)
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

Maximum quantity	Annual throughput shall not exceed 87,000 tonnes
Exclusions	 Wastes having any of the following characteristics shall not be accepted: biodegradable wastes that is significantly contaminated with non- compostable or 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 Species (Amendment etc.) (EU Exit) Regulations 2019 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. pest infested waste
Waste code	Description
02 04 03	sludges from on-site effluent treatment – sludges from the processing of sugar
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 bakery and confectionery
02 06 03	sludges from on-site effluent treatment – sludges from the processing of materials used in baking and confectionery
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 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))
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 06	wastes from anaerobic treatment of waste
19 06 06 ¹	digestate from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	waste types listed in this table, Table S2.2, that have been subjected to mechanical treatment only (from a process that treats wastes which are listed in this table only).
	s shall be accepted at the installation during the seeding of the digester tanks only.

Schedule 3 – Emissions and monitoring

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
Existing me	dium combustion p	lant which are e	engines fuell	ed on biogas (1 MW to 5 MW	/)
A1 [Point A1a 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]			or CEN TS 17021
						or by calculation based on fuel sulphur
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set			BS EN 12619
A1 [Point A1b 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]			or CEN TS 17021
						or by calculation based on fuel sulphur
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	No limit set			BS EN 12619
Existing me	dium combustion p	lant other than	engines fuel	led on biogas (1MW to 5 MW	()
A1 [Point A1c on site plan in Schedule 7]	Boiler 1 stack [burning biogas] [note 1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³ [note 3]	Average over sample period	Annual	BS EN 14792

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Sulphur dioxide	200 mg/m ³ [note 3]			BS EN 14791
						or CEN TS 17021
						or by calculation based on fuel sulphur
A2 [Point A2 on site plan in schedule 7]	Emergency flare stack [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Average over sample period	[note 5]	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619
A3 [Point A3 on site plan in schedule 7]	Channelled emissions such as odour abatement (biofilter) 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
Pressure relief valves	Digesters/Digestate storage tank	Biogas release and operational events	No limit set	Recorded duration and frequency	Daily inspection	
Vents from tanks	Oil/Fuel Storage tanks	No parameter set	No limit set			

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 4 – These emission limits are based on normal operating conditions and load - temperature 0°C (273K); pressure 101.3 kPa and oxygen 3%.

Note 5 – 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.

Table S3.2 Point source emissions to water (other than sewer) and land – emission limits and
monitoring requirements

monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
SW1 on site plan in schedule 7 emission to <i>"The Lake"</i>	Uncontaminated site surface water from roofs and non-operational areas [Note 1]	Oil and grease	No visible oil or grease		Weekly	Visual assessment
NGR: SK 69702 85425						

Note 1 – Clean surface water from roofs, or from areas of the site that are not being used in connection with storing and treating waste can be discharged directly to surface waters, or to groundwater by seepage through the soil via a soakaway.

Table S3.3 Process mor Emission point	Parameter	Monitoring	Monitoring	Other	
reference or source or description of point of measurement	Parameter	frequency	standard or method	specifications	
Digester feed	рН	As described in	As described in site operating	Process	
(digestion process)	Alkalinity	site operating techniques		monitoring to be recorded using a SCADA system where relevant.	
	Temperature		techniques		
	Hydraulic loading rate				
	Organic loading rate				
	Volatile fatty acids concentration				
	Ammonia				
	Liquid /foam level				
Biogas in digester	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant.	
	Methane	Continuous	None specified	Gas monitors to	
	CO ₂	Continuous	None specified	be calibrated every 6 months or in accordance	
	O ₂	Continuous	None specified	with the manufacturer's	
	Hydrogen sulphide	Daily	None specified	recommendations.	
	Pressure	Continuous	None specified		
Digestate batch	Volatile fatty acids concentration	One sample at the end of each	As described in site		
	Ammonia	batch (hydraulic retention time) cycle.	operating techniques		
Digesters and storage tanks	Integrity checks	Weekly	Visual assessment	In accordance with design specification and tank integrity checks.	
Digesters	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	In accordance with design specification and tank integrity checks.	

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		
			manufacturers technical specification.			
Waste reception building or area; Digesters and storage tanks	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	BS EN 15446 In accordance with the LDAR programme	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 stacks	VOCs including methane	Annually	BS EN 12619	Total annual VOCs emissions from the CHP engines to be calculated and submitted to the Environment Agency.		
	Exhaust gas temperature		Traceable to National Standards			
	Exhaust gas pressure		Traceable to National Standards			
	Exhaust gas water vapour content		BS EN 14790- 1	Unless gas is dried before analysis of emissions.		
	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		

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				with manufacturer's recommendations or as agreed in writing by the Environment Agency.
Emergency flare	nergency flareOperating hoursContinuousRecorded duration and frequency. Recording using a SCADA system or similar system	duration and frequency. Recording using a	Date, time and duration of use of auxiliary flare shal be recorded.	
		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	Gas pressure	Continuous	Recording using a SCADA system	Continuous gas pressure shall be monitored.
	Re-seating	Weekly inspection	Visual	Operator must ensure that valves are re-seated after release in accordance with the manufacturer's design.
	Inspection, maintenance, calibration, repair and validation	Following foaming or overtopping or at 3 yearly intervals whichever is sooner	Written scheme of examination in accordance with condition 1.1.1	After a foaming event or sticking, build-up of debris, obstructions or damage, operator must ensure that pressure relief valve function remains within designed gas pressure in accordance with the manufacturer's design by suitably trained and qualified personnel.

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Inspection, calibration and validation report	In accordance with design and construction specifications or after over topping or foaming event		Operator must ensure that valves are re-seated after release, after a foaming event or sticking, build-up of debris, obstructions or damage. Operator must ensure that PRV function remains within designed operation gas pressure in accordance with the manufacturer's design by suitably trained/qualified personnel. Inspection, calibration and validation report. In accordance
				with industry Approved Code of Practice
Storage lagoons and storage tanks	Volume	Daily	Visual or flow metre measurement	750 mm freeboard must be maintained for storage lagoons.
Biofilter 1	Surface condition (signs of vegetation and channelling)	Daily	Visual assessment	Odour abatement plant shall be regularly checked and maintained to ensure appropriate temperature and moisture content.
				Odour abatement plant shall be managed in accordance with permit condition 3.3, the odour management plan and manufacturer's recommendations.

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
				Equipment shall be calibrated on a 4 monthly basis, or as agreed in writing by the Environment Agency.
	Gas temperature – inlet	Daily	Temperature probe / Traceable to national standards	
	Biofilter media moisture	Daily	Moisture meter, Grab test, oven drying or recognised industry method	
	Thatching /compaction	Weekly	Back pressure	
	Gas flow rate – inlet	Continuous	Gas flow meter / EN 16911-1 and MID for EN 16911-1	
	pH (biofilter drainage effluent)	Daily	pH metre	
	Efficiency assessment	Annual	Media health, air-flow distribution and emission removal efficiency (BS EN 13725 for odour removal)	
	Hydrogen sulphide – inlet and outlet gas stream	Every 6 months or as agreed in writing by the Environment Agency.	As agreed in the odour management plan and approved by the Environment Agency	Action levels to be agreed on completion of IC9 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.

Table S3.3 Process mor	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
	Ammonia – inlet	Every 6 months or as agreed in writing by the Environment Agency.	As agreed in the odour management plan and approved by the Environment Agency	Action levels to be agreed on completion of IC9 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 IC9 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.

Schedule 4 – Reporting

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

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air from CHP engines Parameters as required by condition 3.5.1.	A1a and A1b	Every 12 months	1 January
Emissions to air from CHP engines Parameters as required by condition 3.5.1.	A1c	Every 12 months	1 January
Emissions to air from odour abatement plant Parameters as required by condition 3.5.1.	A3	Every 6 months	1 January, 1 July
Process monitoring – digester tank integrity Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.4	Every 5 years from the date of commissioning or as per the manufacturer's recommendation, whichever is sooner	1 January
Process monitoring – under and over pressure relief systems Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.4	Every 12 months Yearly summary report of over- pressure and under-pressure events detailing mass balance release	1 January
Process monitoring – leak detection and repair (inspection, calibration and maintenance) Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.4	Every 3 years	1 January
Process monitoring – use of emergency flare Parameters as required by condition 3.5.1	As specified in schedule 3 table S3.4	Every 12 months	1 January
Non-compostable contamination removal efficiency Parameters as required by conditions 2.3.4 and 2.3.7		Every 12 months Yearly report of detailing contamination removal efficiency and progress with plastic reduction contamination	
Total annual VOCs emissions from gas engines (calculated)	As specified in schedule 3 table S3.4	Every 12 months	1 January

Table S4.2 Annual production/treatment		
Parameter	Units	
Electricity generated	MWh	
Whole digestate	tonnes	
Liquid digestate	tonnes or m ³	
Solid digestate	tonnes	

Table S4.3 Performance parameters			
Parameter	Frequency of assessment	Units	
Water usage	Annually	tonnes or m ³	
Energy usage	Annually	MWh	
Raw material usage	Annually	tonnes or m ³	
Emergency flare operation	Annually	hours	
Electricity exported	Annually	MWh	
CHP engine usage	Annually	hours	
CHP engine efficiency	Annually	%	
Auxiliary boiler usage	Annually	hours	

Table S4.4 Reporting forms			
Media/parameter	Reporting format	Date of form	
Air	Form air 1 or other form as agreed in writing by the Environment Agency	28/01/2022	
Process monitoring	Form process 1 or other form as agreed in writing by the Environment Agency	28/01/2022	
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	28/01/2022	
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	28/01/2022	
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	28/01/2022	
Waste returns	E-waste Return Form or other form as agreed in writing by the Environment Agency		

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.

"ADQP" means Anaerobic Digestion Quality Protocol

"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 methanerich biogas and whole digestate.

"animal waste" means any waste consisting of animal matter that has not been processed into food for human consumption.

"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.

"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 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. For in-vessel composting, the residence time for sanitisation should be calculated separately and then aggregated to the complete composting time. Further guidance '<u>RGN2: Understanding the meaning of regulated facility Definition of regulated facility</u>' is available.

"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.

"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. See the guidance on the <u>level of competence and duration of attendance</u>

"compost" means 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 waste containing packaging or non-packaging items (or both) with a valid certificate of conformity to EN 13432 or an equivalent standard for compostable and digestible items, the certificate issued by an independent certification body capable of fully biodegrading by a biological process to create compost or digest.

'direct discharge' means discharge to a receiving water body

"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.

"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" 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.

"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:

- 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" means 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, water-borne preservatives, organic-based preservatives, boron and organo-metallic based preservatives, boron and halogenated flame retardants and surface treatments (including paint and venner).

"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.

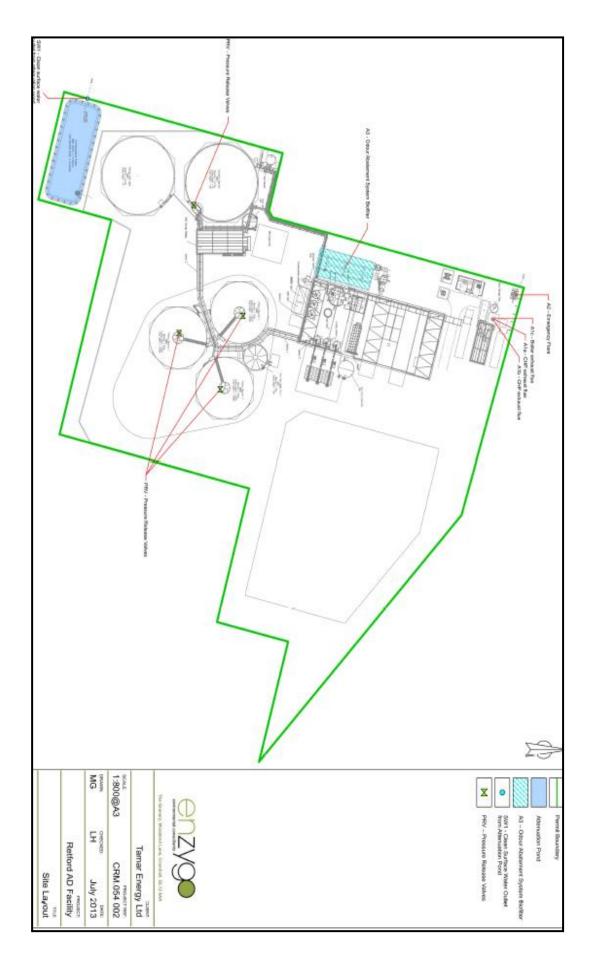
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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.

"year" means calendar year ending 31 December.

Schedule 7 – Site plan



1. Rated thermal input (MW) of the medium combustion plant.	CHP engine 1 – 3.5 MWth CHP engine 2 – 3.5 MWth Boiler – 1.7 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Combined heat & power gas engine Boiler
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Biogas
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	CHP engine 1 – 2014 CHP engine 2 – 2014
5. Sector of activity of the medium combustion plant or the facility in which it is applied (NACE code.	D35.1.1
6. Expected number of annual operating hours of the medium combustion plant and average load in use.	8,760 hours
7. Where the option of exemption under Article 6(3) or Article 6(8) is used, a declaration signed by the operator that the medium combustion plant will not be operated more than the number of hours referred to in those paragraphs.	
8. Name and registered office of the operator and, in the case of stationary medium combustion plants, the address where the plant is located.	Operator Address C/O Biogen Milton Parc Milton Ernest Bedford MK44 1YU
	Site Address
	Retford Anaerobic Digestion Facility Sutton Grange Sutton-Cum-Lound Retford Nottinghamshire DN22 8SB

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