

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Advantage Biogas Limited
Brocklesby Biogas AD Facility
Crosslands Lane
North Cave
East Riding of Yorkshire
HU15 2PG

Permit number

EPR/JP3435DN

Brocklesby Biogas AD Facility

Permit number EPR/JP3435DN

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows:

The Brocklesby Biogas Anaerobic Digestion (AD) Facility is located at Crosslands Road, North Cave, East Riding of Yorkshire at National Grid reference SE 88124 32281. It is located adjacent to a sand and gravel quarrying operation (to the north) and the Brocklesby Limited Fatty Acid Methyl Ester (FAME) Plant (to the south). The M62 motorway is approximately 1km to the west of the site and the B1240 road runs 400m to the south of the site.

There are four residential properties within 250 metres of the facility. The nearest Site of Special Scientific Interest (SSSI) is Everthorpe Quarry approximately 3.3 km to the east of the site. The Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar sites are approximately 5.5 km to the south of the site.

The operation will be a wet mesophilic anaerobic digestion facility that will process up to 70,000 tonnes of pumpable liquid wastes per annum – the majority expected to be sourced via underground pipeline from the adjacent Brocklesby Limited FAME Plant, although other waste streams and delivery by road tankers are also permitted. The resultant biogas will power five combined heat and power (CHP) engines with aggregated thermal output of 3.4 MW (aggregated thermal input of 8.3 MW). Four CHP engines will be located on the Brocklesby Biogas AD Facility site while the fifth CHP engine is on land currently under the control of the operator of the adjacent Brocklesby Limited FAME Site. This area of land will be surrendered from its permit, EPR/JP3931SG, to be included within the permit boundary for Brocklesby Biogas AD Facility. Surplus electricity will be exported to the National Grid.

The installation will be regulated under Section 5.4 Part A (1) (b) (i) of the Environmental Permitting Regulations 2016. The facility will comprise the following site infrastructure:

- Four waste reception storage tanks
- Ferric chloride storage tank
- Waste glycerol storage tank
- Two digester vessels (primary & secondary digestion)
- Three pasteuriser vessels
- Digestate storage tank
- Five CHP engines
- Tanker loading & offloading facilities
- Underground attenuation tank for storage of site surface water run-off prior to discharge to swale.

Main releases to air will be odour emissions from the processing of waste, odour abatement and emissions from the combustion of biogas (CHP engines and emergency flare). Oxides of nitrogen, sulphur dioxide, carbon monoxide and total volatile organic compounds will be monitored periodically. The facility will carry out desulphurisation of the biogas before input to the CHP engines using biological control on sulphur mats and chemical dosing with ferric chloride to ensure there are no breaches of the air quality standards for sulphur dioxide.

Any spillage of liquid materials will be collected either within the bunded area or in sumps adjacent to tanker loading/offloading where they can either be pumped back into the process or removed from site by dedicated road tankers. Uncontaminated surface run-off will be directed to the underground attenuation tank where it can be tested before discharge to adjacent swale.

Domestic sewage will be collected in a sealed cesspit and removed from site by a dedicated road tanker for specialist disposal.

Assessment of noise and odour controls indicate that they should be sufficient to ensure no adverse impact at sensitive receptors. Odour is controlled through a sealed gas line in continuity from the waste reception tanks to the digestate storage tank. No odorous gasses are released during normal operation and odour is destroyed by burning the biogas in the CHP engines and/or flare. There is a carbon filter on the entry to each CHP unit. There is also a carbon filter to control the potential for odour from vented air when road tankers are loaded with digestate for removal from site.

The site will operate a pre-screening and acceptance procedure for all wastes including both those arriving by pipeline from the adjacent Brocklesby Limited FAME site and those arriving by road tanker from other sites or suppliers.

The site will operate an in-process monitoring system involving discrete sampling for physical and chemical testing and a continuous SCADA (supervisory control and data acquisition) control system for key process operating parameters.

The facility will operate an environmental management system (EMS) in accordance with the requirements of ISO14001 which will also regulate any interfaces between the Brocklesby Biogas AD Facility and the Brocklesby Limited FAME Plant.

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

Status log of the permit		
Description	Date	Comments
Application EPR/JP3435DN/A001	Duly made 26/05/17	Application for an anaerobic digestion facility with combustion of biogas.
Additional information received	20/07/17	Detail provided on energy input of boilers, reference conditions for gaseous emission data and operating scenarios.
Additional information received	21/07/17	Response to Schedule 5 Notice dated 30/06/17.
Additional information received	01/09/17 & 26/09/17	Response to Schedule 5 Notice dated 14/08/17.
Additional information received	26/09/17	Detail provided on desulphurisation, containment, waste acceptance, underground pipeline, aqueous emissions and odour.
Additional information received	12/10/17	Confirmation from operator that abatement technology will be installed to reduce NOx emissions.
Additional information received	16/11/17	Response to Schedule 5 Notice dated 19/10/17
Permit determined (Billing Reference: JP3435DN)	06/12/17	Permit issued to Advantage Biogas Limited.

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Brocklesby Limited	EPR/JP3931SG	08/05/06

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/JP3435DN

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Advantage Biogas Limited (“the operator”),

whose registered office is

**6 - 8 Goodwood Road
Keytec 7 Business Park
Pershore
Worcestershire
WR10 2JL**

company registration number 09662571

to operate an installation at

**Brocklesby Biogas AD Facility
Crosslands Lane
North Cave
East Riding of Yorkshire
HU15 2PG**

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

Name	Date
Mike Jenkins	06/12/2017

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 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.

1.5 Multiple operator installations

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator of the installation of the same information.

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”).

2.2 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.
- 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.

2.4 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.

2.5 Pre-operational conditions

- 2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

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.
- 3.1.3 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.

3.3 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 Pests

- 3.5.1 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.
- 3.5.2 The operator shall:
 - (a) 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;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring

- 3.6.1 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
- 3.6.2 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.
- 3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.6.4 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.

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 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.

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

4.3.4 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.

4.3.5 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.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

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

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
AR1	S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 100 tonnes per day involving biological treatment.	R3: Recycling/reclamation of organic substances which are not used as solvents	<p>From receipt of waste through to digestion and recovery of by-products (digestate).</p> <p>Anaerobic digestion of waste in two tanks followed by burning of biogas produced from the process.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2.</p>
Directly Associated Activity			
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)	<p>Undertaken in relation to Activity A1.</p> <p>From the receipt of permitted waste to pre-treatment and despatch for anaerobic digestion on site.</p> <p>Storage of residual wastes from pre-treatment to despatch off-site for recovery or disposal.</p> <p>Storage of pumpable liquid wastes in enclosed tanks fitted with appropriate odour abatement and on an impermeable surface with sealed drainage.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2</p>
AR3	Physical treatment for the purpose of recycling	R3: Recycling/reclamation of organic substances which are not used as solvents	<p>Undertaken in relation to Activity A1.</p> <p>From the receipt of waste to despatch for anaerobic digestion or despatch off site for recovery.</p>

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
			<p>Pre-treatment of waste in a sealed system on impermeable surface with sealed drainage system including maceration of pumpable liquid wastes.</p> <p>Heat treatment (pasteurisation) of waste in three tanks for the purpose of recovery.</p> <p>Gas cleaning by biological treatment on sulphur mats and chemical scrubbing using ferric chloride and activated carbon.</p> <p>Waste types suitable for acceptance are limited to those specified in Table S2.2.</p>
AR4	Heat and electrical power supply.	R1:Use principally as a fuel to generate energy	<p>Undertaken in relation to Activity A1.</p> <p>From the receipt of biogas produced at the on-site anaerobic digestion process to combustion with the release of combustion gases.</p> <p>Combustion of biogas in five combined heat and power (CHP) engines with an aggregated thermal input of 8.3 MWth.</p> <p>The combustion of biogas via CHP engines during the interim period between permit issue and engine modification of all CHP engines on site shall be in accordance with the proposed operating regime described in the application (1404-6- Air Quality Schedule 5 Response – Brocklesby AD Plant dated 09/11/17).</p>

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
			Combustion of biogas in one auxiliary boiler with a thermal input of 0.65 MWth.
AR5	Emergency flare operation	D10: Incineration on land	<p>Undertaken in relation to Activity A1.</p> <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 emergency flare required only during periods of breakdown or maintenance of the CHP engines and auxiliary boiler.</p>
AR6	Raw material storage	Storage of raw materials including fuel (engine) oil, red diesel, grease, ferric chloride, activated carbon, glycol, biocides, pesticides and laboratory chemicals.	<p>Undertaken in relation to Activity A1.</p> <p>From the receipt of raw materials to despatch for use within the facility.</p>
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 produced)	<p>Undertaken in relation to Activity A1.</p> <p>Storage of biogas produced from on-site anaerobic digestion of permitted waste in roof space of digesters.</p> <p>From the receipt of biogas produced at the on-site anaerobic digestion process to despatch for use within the facility.</p>
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)	<p>Undertaken in relation to Activity A1.</p> <p>From the receipt of processed uncertified digestate produced from the on-site anaerobic digestion process to despatch for use off-site.</p>

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 uncertified liquid digestate in sealed tanks within bunded area.
AR9	Surface water collection and storage	Collection of uncontaminated roof and surface water generated on site.	Undertaken in relation to Activity A1. From the collection of uncontaminated roof and site surface water process area bund process area bund, storage in sump and attenuation tank to re-use within the facility or release to swale.
AR10	Abatement of odour emissions	Collection and treatment of odorous air from site processes activated carbon filter systems	Undertaken in relation to Activity A1. From the collection of odorous air from site processes to treatment and release of treated air to atmosphere.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/JP3435DN/A001	Document HC 1542-16 BAT (including Appendices) in response to section 3a – technical standards, Part B of the application form.	13/01/17
Application EPR/JP3435DN/A001	Document HC 1542-08, HC 1542-09, HC 1542-10, and HC1542-16 in response to section 5B, Table 3 – General Requirements, Part B of the application form.	13/01/17
Response to Schedule 5 Notice dated 30/06/17	Operating techniques described in Response 2 (desulphurisation of biogas)	21/07/17
Response to Schedule 5 Notice dated 14/08/17	Operating techniques described in the responses to the Notice (including accompanying information): Response 2 (desulphurisation of biogas), Responses 4 and 6 (odour management), Responses 9 and 10 (underground pipeline), Responses 11 to 23 (containment), Responses 24 and 25 (chemical storage), Responses 26 to 35 (waste acceptance), Response 36 (management of foul sewage), Response 37 (site operation), Responses 38 to 42 (management of aqueous emissions), Response 44 (digestion) and Responses 46 to 50 (accident management plan).	01/09/17 and 26/09/17

Table S1.2 Operating techniques		
Description	Parts	Date Received
Response to Schedule 5 Notice dated 19/10/17	Operating techniques described in the responses to the Notice (including accompanying information): Response 1 (air quality – NOx), Responses 2 and 3 (air quality - desulphurisation), Responses 4 to 7 (odour management), Responses 8 and 9 (containment), Response 10 (accident management plan), Response 11 (digestion) and Response 12 (management of aqueous emissions).	16/11/17

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The operator shall submit a performance review of the carbon filter odour abatement at the facility to the Environment Agency for approval. The performance review shall demonstrate that the abatement system is capable of ensuring odour emissions do not extend beyond the permit boundary. The operator shall also confirm the details of odour abatement plant monitoring protocols and an assessment of the abatement system against design parameters.	07/07/2018.
IC2	Following completion of IC1, if the performance review finds that the odour abatement system is insufficient in ensuring that odour emissions do not extend beyond the permit boundary, the operator shall submit to the Environment Agency for approval a detailed evaluation of alternative odour abatement techniques, proposals and timescales for the installation of an alternative odour abatement system. The proposals for any alternative odour abatement shall be in accordance with the requirements of the Environment Agency's H4 Odour Management guidance and Guidance How to comply with your environmental permit. Additional guidance for: Anaerobic Digestion (November 2013).	Within one month following completion of IC1.
IC3	A detailed assessment of noise shall be carried out at the facility during normal operations in accordance with BS4142:2014 (Rating industrial noise affecting mixed residential and industrial areas) and BS7445: 2003 (Description and measurement of environmental noise), or other methodology as agreed with the Environment Agency, in order to validate the assessment provided within the permit application. The assessment shall include a comparison of noise levels resulting from the operation of the AD plant alone and in combination with the adjacent FAME plant with background noise levels. The assessment shall consider all noise sources at the facility, including static plant and on-site vehicle movements. Where any noise sources are identified as exhibiting tonal contributions, they shall be quantified by means of frequency analysis. The results of the assessment together with conclusions and recommendations shall be submitted to the Environment Agency for approval in writing.	07/12/2018.
IC4	Following the completion of IC3, if the assessment finds that emissions of noise and vibrations are likely to cause annoyance outside of the site boundary, the operator shall submit to the Environment Agency a report detailing proposals and timescales for the implementation of appropriate noise mitigation measures to ensure that site noise levels are below the background levels.	Within one month following completion of IC3.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The proposals for noise mitigation shall be in accordance with the requirements of the Environment Agency's Technical Guidance Note IPPC H3 Part 2. The proposals shall be implemented by the operator from the date of approval in writing by the Environment Agency subject to any such amendments or additions as notified by the Environment Agency.	

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
1	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the installation, the operator shall ensure that a review of the design, method of construction and integrity of the proposed site secondary containment is carried out by a qualified structural or civil engineer. The review shall compare the constructed secondary containment against the standards set out in section 7.9.1 of the Environment Agency Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013) and CIRIA C736 - Containment Systems for the Prevention of Pollution - secondary, tertiary and other measures for industrial and commercial premises or other relevant industry standard.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> • physical condition of the secondary containment; • the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure; • any work required to ensure compliance with the standards set out in CIRIA C736 or other relevant industry standard; and • a preventative maintenance and inspection regime <p>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 secondary containment meets the standards set out in the technical guidance documents and implement the maintenance and inspection regime.</p> <p>No site operations shall commence or waste accepted at the facility unless the Environment Agency has given prior written permission under this condition.</p>
2	<p>At least 2 weeks (or any other date as agreed with the Environment Agency) prior to commissioning of the installation, the operator shall submit a written copy of the site Environmental Management System (EMS) and make available for inspection all documents and procedures which form part of the site EMS.</p> <p>The EMS shall cover all activities at the installation and shall be in accordance with the Environment Agency Guidance – How to develop a management system: environmental permits and section 8.2.1 of the Environment Agency Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013). The EMS shall include the techniques the operator relies upon to manage the operation, accidents (including flooding), closure and decommissioning of the site. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.</p> <p>No site operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written permission under this condition.</p>
3	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the installation, the operator shall provide a written commissioning plan (including timescales for completion) for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment</p>

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
	<p>and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved by the Environment Agency.</p> <p>No site operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written permission under this condition.</p>
4	<p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the installation, the operator shall provide written evidence to the Environment Agency of the Technically Competent Manager (TCM) at the proposed installation. The report shall confirm that the person(s) hold the relevant qualifications under the CIWM/WAMITAB scheme or other equivalent for the operation of the anaerobic digestion plant.</p> <p>No site operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written permission under this condition.</p>

Schedule 2 – Waste types, raw materials and fuels

Raw materials and fuel description	Specification
Fuel Oil	Sulphur content not exceeding 0.1% by mass

Maximum quantity	Annual throughput shall not exceed 70,000 tonnes
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
02 01 02	animal tissue waste
02 01 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw) 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
02 02 02	animal tissue waste
02 02 03	materials unsuitable for consumption or processing
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
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
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
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
02 06 03	sludges from on-site effluent treatment
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

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 70,000 tonnes
Waste code	Description
02 07 02	wastes from spirits distillation
02 07 04	materials unsuitable for consumption or processing
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard
03 03	wastes from pulp, paper and cardboard production and processing
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04	Wastes from the leather, fur and textile industries
04 02	wastes from the textile industry
04 02 10	organic matter from natural products, e.g. grease, wax
07	Wastes from organic chemical processes
07 01	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals
07 01 08*	Other still bottoms and reaction residues (glycerol waste from bio-diesel manufacture from non-waste vegetable oils only)
16	Wastes not otherwise specified in the list
16 10	aqueous liquid wastes destined for off-site treatment
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01 (liquor/leachate from a composting process that accepts waste input types listed in this table only)
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 03	pre-mixed wastes composed only of non-hazardous wastes (waste types listed within this table, Table S2.2, that have been mixed together only)
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sludge types from waste listed within this table, Table S2.2, that have been heat treated only)
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09 (glycerol not designated as hazardous i.e. excludes EWC code 19 02 08)
19 05	wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
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)
19 06 04	digestate from anaerobic treatment of municipal waste (source segregated biodegradable waste from a process that treats wastes which are listed in this table 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)

Table S2.2 Permitted waste types and quantities for anaerobic digestion	
Maximum quantity	Annual throughput shall not exceed 70,000 tonnes
Waste code	Description
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
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 other than those mentioned in 19 08 11
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (waste types listed in this table, Table S2.2, that have been subjected to mechanical treatment 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 08	biodegradable kitchen and canteen waste
20 01 25	edible oil and fat
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

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
A15 [Point A15 on site plan in Schedule 7]	CHP engine 1 stack [note 1] [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	100 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A16 [Point A16 on site plan in schedule 7]	CHP engine 2 stack [note 1] [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	100 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A17 [Point A17 on site plan in schedule 7]	CHP engine 3 stack [note 1] [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	100 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A18 [Point A18 on site plan in schedule 7]	CHP engine 4 stack [note 1] [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	100 mg/m ³			BS EN 14791

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
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A19 [Point A19 on site plan in schedule 7]	CHP engine 5 stack [note 1] [note 4]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	100 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:2013
A14 [Point A14 on site plan in schedule 7]	Emergency flare stack [note 2]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Hourly average	[note 3]	BS EN 14792
		Carbon monoxide	50 mg/m ³			BS EN 15058
		Total VOCs	10 mg/m ³			BS EN 12619:2013
A13 [Point A13 on site plan in schedule 7]	Auxiliary biogas boiler stack	Sulphur dioxide	100 mg/m ³	Hourly average	Annual	BS EN 14791
A1 – A4 Pressure relief valves [Points A1 – A4 on site plan in schedule 7]	Incoming waste storage tanks	No parameter set	No limit set	--	Record of operating hours	--
A7 – A12 Pressure relief valves [Points A7 – A12 on site plan in schedule 7]	Digesters/Digestate storage tank	No parameter set	No limit set	--	Record of operating hours	--
A5 Vent from tank [Point A5 on site plan in schedule 7]	Ferric chloride tank	No parameter set	No limit set	--	--	--
A6 Vent from tank [Point A6 on	Oil/Fuel Storage tank	No parameter set	No limit set	--	--	--

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
site plan in schedule 7]						
A20 Vent from tank [Point A20 on site plan in schedule 7]	Carbon filter odour abatement system	No parameter set	No limit set	--	--	--
A21 Vent from tank [Point A21 on site plan in schedule 7]	Glycerol tank	No parameter set	No limit set	--	--	--
A22 – A23 Foam vent from tanks [Points A22 A23 on site plan in schedule 7]	Digesters	No parameter set	No limit set	--	Record of operating hours	--
<p>Note 1 - These limits are based on normal operating conditions and load - temperature 0°C (273K); pressure: 101.3 kPa and oxygen: 5 per cent (dry gas). The measurement uncertainty specified in section 4.5.1 of LFTGN08 v2 2010 shall apply.</p> <p>Note 2 - These limits are based on normal operating conditions and load - temperature 0°C (273K); pressure: 101.3 kPa and oxygen: 3 per cent (dry gas). The measurement uncertainty specified in section 5.3.1 of LFTGN05 v2 2010 shall apply.</p> <p>Note 3 - Monitoring to be undertaken 12 months after commissioning of the emergency flare. 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> <p>Note 4 - The combustion of biogas via CHP engines during the interim period between permit issue and engine modification of all CHP engines on site shall be in accordance with the proposed operating regime described in the application (1404-6- Air Quality Schedule 5 Response – Brocklesby AD Plant dated 09/11/17).</p>						

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W3 on site plan in schedule 7	Uncontaminated site surface water from roofs, site bund and non-operational areas via an attenuation tank	pH	6 - 9	--	When attenuation tank is discharged	BS 6068-2.50:1995
		Suspended solids	30 mg/l	--		BS EN 872:2005
		Chemical Oxygen Demand (COD)	125 mg/l	--		BS 6068-2.34:1988
		Ammonia	0.1 mg/l	--		In accordance with M18

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Biogas from Digesters	Flow	Continuous	In accordance with EU weights and measures Regulations	--
Biogas from Digesters	Methane	Continuous	None specified	Gas monitors to be calibrated every 6 months or in accordance with the manufacturer's recommendations
	Hydrogen sulphide	Daily	None specified	--
Waste reception tanks; Digesters and digestate storage tank	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary
Digesters and storage tanks	Integrity checks	Weekly	Visual assessment	--
Carbon filtration system	None specified	In accordance with manufacturer's recommendations	None specified	Odour abatement system shall be regularly checked and maintained to ensure appropriate temperature and moisture content

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
				Carbon filter to be replaced when saturated in accordance with manufacturer's recommendations
Representative sample of each digester's contents	Key parameters to include temperature, ammonia, hydraulic loading rate, organic loading rate, alkalinity and pH	As described in Application or as agreed in writing with Environment Agency.	As described in Application or as agreed in writing with Environment Agency	--

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 Parameters as required by condition 3.6.1.	A13 – A19	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.6.1	W3	Every 6 months	1 January, 1 July

Parameter	Units
Electricity generated	MWh
Whole digestate	tonnes or m ³

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 biogas boiler usage	Annually	hours

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	06/12/17
Water	Form water 1 or other form as agreed in writing by the Environment Agency	06/12/17
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	06/12/17
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	06/12/17
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	06/12/17

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
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	
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 methane-rich biogas and whole digestate.

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

“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.

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

“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.

“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

“Industry Standard Protocol” means “A standardised protocol for the monitoring of bioaerosols at open composting facilities” published by the Association for Organics Recycling and developed in conjunction with the Environment Agency.

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

“pests” means Birds, Vermin and Insects.

“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.

“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.

“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 varnish).

“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.

“year” means calendar year ending 31 December.

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, 5% for 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



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END OF PERMIT

Permit Number: JP3435DN **Operator:** Advantage Biogas Limited

Facility: Brocklesby Biogas AD **Form Number:** Air1 / 06/12/17
Facility

Reporting of emissions to air for the period from to

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
A15	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	1 hour period		BS EN 14792		
A15	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		
A15	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		
A15	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A16	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	1 hour period		BS EN 14792		
A16	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		
A16	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		
A16	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A17	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	1 hour period		BS EN 14792		
A17	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		
A17	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
A17	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A18	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	1 hour period		BS EN 14792		
A18	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		
A18	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		
A18	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A19	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	250 mg/m ³	1 hour period		BS EN 14792		
A19	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		
A19	Carbon monoxide	1400 mg/m ³	1 hour period		BS EN 15058		
A19	Total VOCs	1000 mg/m ³	1 hour period		BS EN 12619:2013		
A14	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	1 hour period		BS EN 14792		
A14	Carbon monoxide	50 mg/m ³	1 hour period		BS EN 15058		
A14	Total VOCs	10 mg/m ³	1 hour period		BS EN 12619:2013		
A13	Sulphur dioxide	100 mg/m ³	1 hour period		BS EN 14791		

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: JP3435DN Operator: Advantage Biogas Limited

**Facility: Brocklesby Biogas AD Form Number: Water1 / 06/12/17
Facility**

Reporting of emissions to water (other than to sewer) and land for the period from to

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Number of samples	Maximum result in reporting period [1]	Date and time of maximum result [3]	Minimum result in reporting period [1]	Date and time of minimum result [3]	Test Method [2]	Uncertainty [4]
W3	pH	6 - 8	Periodic						BS6068-2.50:1995	
W3	Total suspended solids	30 mg/l	Periodic						BS EN 872	
W3	Chemical Oxygen Demand (COD)	125 mg/l	Periodic						BS 6068-2.34:1988	
W3	Ammonia	0.1 mg/l	Periodic						In accordance with M18	

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: JP3435DN **Operator:** Advantage Biogas Limited

Facility: Brocklesby Biogas AD **Form Number:** WaterUsage1 / 06/12/17
Facility

Reporting of Water Usage for the year

Water Source	Usage (m³/year)	Specific Usage (m³/unit output)
Mains water		
Site borehole		
River abstraction		
TOTAL WATER USAGE		

Operator's comments:

Signed

Date.....

(authorised to sign as representative of Operator)

Permit Number: JP3435DN Operator: Advantage Biogas Limited

Facility: Brocklesby Biogas AD Form Number: Energy1 / 06/12/17
Facility

Reporting of Energy Usage for the year

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
Natural Gas	MWh		
Gas Oil	tonnes		
Recovered Fuel Oil	tonnes		
Biogas	tonnes		
TOTAL	-		

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Permit Number: JP3435DN **Operator:** Advantage Biogas Limited

Facility: Brocklesby Biogas AD **Form Number:** Performance1 / 06/12/17
Facility

Reporting of other performance indicators for the period to

Parameter	Units
Total raw material used	tonnes
CHP engine usage	hours
CHP engine efficiency	%
Auxiliary biogas boiler usage	hours
Emergency flare operation	hours
Electricity exported	MWh

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)