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Wales

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Anglesey Energy Limited

**Mona Anaerobic Digestion Plant
Mona Industrial Estate
Gwalchmai
Isle of Anglesey
LL65 4RJ**

Permit number

EPR/AP3033HY

Mona Anaerobic Digestion Plant

Permit number EPR/AP3033HY

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

Mona Industrial Park is situated within a rural area adjacent to the Mona airfield, operated by the Ministry of Defence and was once part of the airfield. There are several residential properties located close to the site. The village of Gwalchmai lies to the West, Bodffordd to the North and Rhostrehwfa to the East. Other major landmarks include the Cefni Reservoir lie to the North East.

Access to the industrial park is directly off the A5 which has been replaced as the main arterial route in Anglesey by the A55.

The industrial site has similar users i.e. a waste transfer station opposite, but most activity is situated around the entrance to the estate. The area is predominantly rural in its setting and supports numerous farms and associated businesses. Adjacent businesses include a poultry farm and highways depot.

Four Special Areas of Conservation were identified within 10km of the site and a Site of Specific Scientific Interest within 2km of site.

The permit is for the operation of an anaerobic digestion plant which utilises the breakdown of organic matter by naturally occurring bacteria in the absence of air resulting in the production of biogas and bio-fertiliser.

The feedstock associated with this plant is predominantly chicken litter, glycerine, dairy DAF effluent and biomass including maize and rye silage. The total annual throughput is 49,500 tonnes per year.

The permit is required to authorise the Recovery of non-hazardous waste with a capacity exceeding 100 tonnes per day involving biological treatment, which is an activity covered by the description in Section 5.4 Part A (1)(b)(1) in Schedule 1 of the Environmental Permitting Regulations. A second listed activity 4.3 Part A(1)(a) authorises the further treatment of the material to produce an ammonium based fertiliser.

The process involves solid wastes being delivered into the building in vehicles which will discharge the waste into an unloading bay. The main solid material for the plant is chicken litter, this will be stored within a building which benefits from an odour control system. The chicken litter will be transferred from the building to the feed hoppers in the yard by a telehandler, from the feed hoppers the chicken litter enters the primary digesters. The silage will be stored outside within covered silage clamps and transferred to the feed hoppers by telehandler, from the feed hoppers the silage enters the primary digesters.

Raw liquid waste materials will be discharged from tankers outside the building into a raw waste tank which will feed the primary digesters, the primary digester tanks have a capacity of 2592m³ each. This is a gas tight cylindrical system in which the anaerobic digestion takes place. All tanks that are outside of the main containment area are fully bunded. The digester tanks, storage tanks and post digester tank are located within a

containment area that is sealed and banded. Gas is produced from this process which will be used to fuel a gas engine with a total thermal input of 4.68MW. The gas engines will in turn produce electricity. The digestate is stored within an enclosed tank prior to further treatment or removal from site.

Material from the post digester is then fed into a solid and liquid separation process. The plant comprises of the pasteurisation, separation, drying and evaporation processes along with the in-vessel composting process (including press screw separation).

The digestate treatment operations being carried out consist of two drying systems; evaporator and belt dryer. Each is equipped with a washing/scrubbing system which removes ammonia from the air flow leaving the dryer unit. To remove the ammonia the acid-base reaction principle is used by adding sulphuric acid to the ammonia washing system., which leaves as an ammonium sulphate solution. Ammonium sulphate has properties equal to typical fertilisers. The dry material (compost) is then stored in a separate building prior to removal off-site. If any of the digestate is not sent for further treatment it will be removed from site via sealed pipe-work to a sealed tanker.

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/AP3033HY/A001	Duly made 13/10/10	
Additional information requested	15/12/10	
Additional information received	06/01/11	
Additional information received	15/02/11	
Additional information received	01/03/11	
Permit determined EPR/AP3033HY/A001	27/06/11	
Application for variation EPR/AP3033HY/V002	Duly Made 20/02/12	Change of technical provider. Change of operator name
Additional information requested	16/03/12	Requested by email
Additional information received	15/03/12	Received by email, part only
Additional information received	20/03/12	Received by email, remainder
Additional information requested	23/03/12	Requested by email
Additional information received	03/04/12	Received by email
Variation notice EPR/AP3033HY/V002 Issued	11/05/12	
Variation notice EPR/AP3033HY/V003 Issued	23/05/12	Admin variation
Application EPR/AP3033HY/V004	Duly Made 11/04/16	

Additional information received	16/05/16	Gas Flare Specification
Additional information received	25/05/16	Information received relating to the Site Condition report and site boundary
Additional information received	01/07/16	Revised waste codes table
Additional information received	30/06/16	Revised Site Boundary Plan
Variation notice EPR/AP3033HY/V004 Issued	06/09/16	Consolidated permit issued
Application EPR/AP3033HY/V005	Duly Made 25/07/16	
Additional Information requested	22/09/16	Schedule 5 request sent – additional air quality modelling
Additional information received	28/10/16 and 22/12/16	Information received relating air quality assessment and containment solutions
Additional information received	20/01/17	Information received relating to containment solutions
Consolidated permit EPR/AP3033HY/V005 issued	24/04/17	Consolidated permit issued
Application EPR/AP3033HY/V006	18/08/17	NRW led variation to amend conditions relating to bio-aerosols
Application EPR/AP3033HY/T007	Duly made 23/10/17	Application to transfer the permit in full where management remains largely the same to 4D AD Services Limited.
Transfer determined EPR/AP3033HY/T007	08/12/17	Full transfer of permit complete
Application EPR/AP3033HY/T008	Duly made 19/12/18	Application to transfer the permit from 4D AD Services Limited to Optimal Biogas Limited
Transfer determined EPR/AP3033HY/T008	04/01/19	Permit transferred in full.
Application EPR/AP3033HY/T009	Duly made 05/03/20	Application to transfer the permit from Optimal Biogas Ltd to Anglesey Energy Limited
Transfer determined EPR/AP3033HY/T009	20/03/20	Permit transferred in full to Anglesey Energy Limited

Regulation 61 Notice sent to the Operator	24/03/20	Issue of a Notice under Regulation 61(1) of the EPR. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for Waste Treatment.
Regulation 61 Notice response	20/09/20	Response received from the operator.
Natural Resources Wales initiated variation determined EPR/AP3033HY/V010	26/05/21	Varied and consolidated permit issue to Operator.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number
EPR/AP3033HY

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/AP3033HY/V010 authorising,

Anglesey Energy Limited (“the operator”),
whose registered office is

**80 Guildhall Street
Bury St. Edmunds
Suffolk
England
IP33 1QB**

company registration number **12083139**

to operate an installation at

**Mona Anaerobic Digestion Plant
Mona Industrial Estate
Gwalchmai
Isle of Anglesey
LL65 4RJ**

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

Name	Date
Holly Noble	25/05/2021

Authorised on behalf of Natural Resources Wales

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 or other approval issued by Natural Resources Wales.

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

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

1.4.1 The operator shall take appropriate measures to ensure that:

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

- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).
- 2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

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 (a) 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 Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales 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 Natural Resources Wales.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 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.
- 2.3.4 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.
- 2.3.5 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 Natural Resources Wales.
- 2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales 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 S1.4A have been completed.
- 2.5.2 The operations specified in schedule 1 table S1.4B shall not commence until the measures specified in that table 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 Where a substance is specified in schedule 3 table S3.1 or S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.
- 3.1.4 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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 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 Natural Resources Wales, 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.

3.3.3 The operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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
- (c) bioaerosol monitoring specified in table S3.4

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

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, S3.3 and S3.4 unless otherwise agreed in writing by Natural Resources Wales.

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) if notified by Natural Resources Wales, submit to Natural Resources Wales for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by Natural resources Wales

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 Natural Resources Wales, 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 Natural Resources Wales.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 Natural Resources Wales, 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 Natural Resources Wales, 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 Natural Resources Wales 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 submit an annual solvent management plan in order to demonstrate compliance with the requirements of the Solvent Emissions Directive, as specified in Article 9(1) of the Directive, by 31 January each year in respect of the previous year.

4.3 Notifications

- 4.3.1 (a) In the event 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 Natural Resources Wales,
 - (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) in the event of a breach of any permit condition the operator must immediately—
- (i) inform Natural Resources Wales, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event 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 Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales 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) Natural Resources Wales 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 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, Natural Resources Wales shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

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)	<p>Recovery of non-hazardous waste with a capacity exceeding 100 tonnes per day involving: (i) biological treatment</p> <p>R3: recycling/reclamation of organic substances which are not used as solvents (including composting and other biological/transformation processes)</p> <p>R5: Recycling/reclamation of other inorganic materials</p> <p>R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste was produced)</p>	<p>The total annual throughput – up to 49,500 tonnes of liquid and solid organic waste</p> <p>Daily treatment capacity of 250 tonnes/day</p> <p>Maximum waste storage is 29,885 m³</p> <p>Waste acceptance, storage and pre-treatment, including maceration</p> <p>Gas cleaning by biological and chemical scrubbing and upgrading to bio-methane</p> <p>Gas storage and drying</p> <p>All solid wastes must be stored inside the waste reception /chicken litter building</p> <p>The waste reception building will be provided with fast acting roller shutter doors provided for access and egress</p> <p>Bulking and mixing will only take place under instruction from appropriately trained personnel</p> <p>Exhaust air gases from the chicken litter building and waste storage tanks will pass through abatement prior to discharge to atmosphere</p> <p>Activities shall be carried out on an impermeable surface with sealed drainage system</p> <p>Where separate fractions do not meet PAS 110 Quality protocol, they will continue to be treated as wastes and the procedures for storage of wastes will be</p>

			followed
			Waste types as specified in Table S2.2.
AR2	S4.3 Part A(1)	<p>Producing (including any blending which is related to their production) phosphorus- nitrogen- or potassium-based fertilisers (simple or compound fertilisers).</p> <p>D9: Physico-chemical treatment which results in compounds or mixtures that are discarded.</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological/transformation processes)</p> <p>R5: Recycling/reclamation of other inorganic materials</p>	<p>Digestate to be transferred via sealed pipework to the separation and drying process area.</p> <p>The evaporator and dryer processes are to be undertaken within an enclosed building and both processes are to have odour control systems installed and bunding of the building.</p> <p>Operations to be carried out on an impermeable concrete hardstanding.</p> <p>Waste liquids to be diverted to site leachate drainage</p> <p>Ammonium Sulphate to be stored within a 107m³ storage tank within a bunded area.</p> <p>Annual fertiliser production capacity of 2346 t/annum.</p> <p>All activities are to be carried out within a bunded and contained area with a sealed drainage system.</p> <p>Leak detection system to be installed on all Phase 2 equipment and tanks</p>
Directly Associated Activity			
AR3	Physical pre-treatment of wastes	<p>Mechanical treatment of waste including screening, mixing and blending.</p> <p>D9: Physico-chemical treatment which results in compounds or mixtures that are discarded.</p>	-
AR4	Combustion of resultant biogas	<p>The combustion of fuel (biogas and oil) in a CHP engine with a thermal rating less than 5 MW for the purpose of generating electricity and heat for use within the installation and national grid.</p> <p>R1: Use principally as a fuel or other means to generate electricity</p>	<p>From receipt of biogas in the installation through to the combustion process and subsequent delivery of the electricity and the generation of heat for use by the anaerobic digestion process</p>

AR5	Biogas storage	Storage of biogas in floating roof digesters	From storage of biogas produced from anaerobic digestion to being used within a combustion engine
AR6	Gas flare	Use of an auxiliary flare required only for short periods of breakdown or maintenance D10: Incineration on land	
AR7	Raw materials storage	Storage of silage in a clamp covered by a plastic membrane. Storage of lubrication oil used in the CHP engine.	From receipt of raw materials to their use within the installation.
AR8	Digestate storage	Storage of liquid digestate in bulk concentration tanks	From storage of digestate to dispatch for off-site use
AR9	Waste oil storage	Storage of used lubrication oil used in the CHP engine	From use within the installation to removal off-site
AR10	Waste liquid storage	Storage of leachate within the leachate storage tank	Leachate from the AD process and storage of silage
AR11	Solid waste storage	Other solid waste materials are to be stored within the enclosed building with active odour control	
AR12	Scrubber	Waste reception building and IVC odour control unit	Modular odour control system. Ipur unit consisting of cartridges containing catalyst coated foamed glass and UV-C lamps.
AR13	Drying and composting activities	In-vessel composting of digestate from anaerobic digestion process	Annual compost production capacity of 1200t/annum Both the compost and the solid digestate are to be stored in designated storage sheds All activities are to be carried out on an impermeable surface within a bunded and contained area with a sealed drainage system Leak detection system to be installed on all Phase 2 equipment and tanks
AR14	Chemical Storage	Storage of Sulphuric acid for use in the drying process scrubbers	Sulphuric acid to be stored within a 4m ³ double-skinned and bunded tank. Filling connection to be protected by barriers.
AR15	Storage of recyclable materials	Storage of finished compost product R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and	Compost and dried digestate to be stored in an enclosed building

other
biological/transformation
processes)

R5: Recycling/reclamation of
other inorganic materials

R13: Storage of waste
pending any of the
operations numbered R1 to
R12 (excluding temporary
storage, pending collection,
on the site where the waste
was produced)

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	Response to Part C2 of the application, Q3d – management systems. Doc ref: Environmental Management System	16/03/16
Application	Response to Part C2 of the application, Q5c – Non-Technical Summary	16/03/16
Application	Response to Part C3 of the application, Q1 – Appendix D – Raw materials and waste optimisation	16/03/16
Application	Response to Part C3 of the application, Q3b – Appendix A – Plant odour management plan and odour assessment	16/03/16
Application	Response to Part C3 of the application, Q3b – Appendix B – Noise and Vibration management plan	16/03/16
Application	Response to Part C3 of the application, Q6a – Appendix E – Basic and specific measures to improve energy efficiency	16/03/16
Application	Application document Appendix C – Fugitive emissions and monitoring	16/03/16
Application	Application document Appendix H- Health & Safety policy & guidelines	16/03/16
Application	Application document Appendix L – Accident Management plan	16/03/16
Application	Application document Appendix N – CHP engine specification and user manual	16/03/16
Application	Application document Appendix O – Drainage plans and summary	16/03/16
Application	Application document Appendix R – Mona AD Executive summary	16/03/16
Application	Application document Appendix S – Fire prevention and rescue plan (FPRP)	16/03/16
Application	Application document - Site Specific Bio-aerosol risk assessment	16/03/16
Application	Pipe bridge Foundation Drawing – Drawing number 2341.PH2.SK.01	16/03/16
Email from operator	Stack calculations for new flare to be used on site	16/05/16
Email from operator	Site plan with boundary – Document A2529UK	25/05/16
Email from operator	Reception building waste delivery and digestate transfer odour information	05/07/16
Application	EMS Appendix - Mona AD Executive summary	25/07/16
Application	EMS Appendix – Mona Key Issues, Phase 1 and Phase 2	25/07/16
Application	Appendices A – S of the site EMS	25/07/16
Additional Information Received	Schedule 5 response in relation to Air Quality assessment and modelling	28/10/16
Additional Information Received	Additional information relating to new/updated drainage proposals and drawings	22/12/16
Additional Information Received	Revised Drainage Design document, ref – 170124_Revision Phase_1_rev5	24/01/17
Additional Information Received	Email received explaining containment arrangements for the Sulphuric Acid system	09/02/17
Additional Information Received	2 nd Schedule 5 response in relation to containment solutions for Phase 2 equipment and tanks – all parts of response	20/02/17
Additional Information Received	Revised EMS, accident management plan and environmental policy provided by email	27/02/17

Response to All regulation 61(1) Notice – request for information dated 23/03/2020 detailing how the Operator will comply with the BAT conclusions for Waste Treatment, under Directive 2010/75/EU of the European Parliament and of the Council		20/09/20
Agreed written methodology for meeting the process parameters listed in table S3.3	All relevant sections	In line with Improvement Condition IC6

Table S1.4 Improvement programme requirements

Reference	Requirement	Date
IC1	The Operator shall monitor emissions from the gas engines for the determinants listed in Table S3.1. The results of the emissions monitoring shall be used to assess the environmental impact of the emissions from the gas engines on air quality standards. A copy of the impact assessment shall be submitted to Natural Resources Wales	Complete
IC2	The operator shall undertake a noise assessment in accordance with procedures given in BS4142:2014 (description and measurement of environmental noise) or other methodology as agreed in writing Natural Resources Wales. Any noise sources(s) identified as exhibiting tonal contributions shall be quantified by means of frequency analysis. Noise measurement shall be undertaken by an experienced and suitably qualified person. On completion of the assessment a copy of the survey shall be submitted to Natural Resources Wales in the form of a report, with interpretation of the results and conclusions and recommendations drawn.	Complete
IC3	The operator shall review the effectiveness of the Odour Management Plan in preventing and minimising odour emissions from all point and fugitive sources during the first two months of operation. This shall include a review of assumptions and conclusions drawn in the Odour Monitoring Report and the Dispersion Modelling Assessment, by sampling and measuring odour emissions from all point and fugitive sources. This review shall be undertaken in accordance with Environment Agency Guidance notes H1 and H4. A copy of the review shall be submitted to Natural Resources Wales detailing improvements required (where applicable) to prevent and minimise odour emissions and ensure the installation does not cause an odour nuisance.	Complete
IC4	The Operator shall submit 'the as built drainage plan' as soon as the plant has been built. On completion of the plant a copy of the drawing shall be submitted to Natural Resources Wales.	Complete
IC5	The operator shall submit to Natural Resources Wales a written procedure(s) describing how they intend to meet the following BAT requirements in accordance with requirements specified within BAT Conclusion of the Waste Treatment BREF Document (EU 2018):	17 February 2022 or otherwise agreed in writing with

	<ul style="list-style-type: none"> • BAT 1 (IV)(XII)(XIII) Environment Management System • BAT 2(b) and BAT 2(c) – Improving environmental performance • BAT 3(i)(a) and BAT 3(i)(b) – Establish and maintain a waste water and waste gas inventory as part of the EMS • BAT4(b) – Adequate storage capacity • BAT 8 – Monitoring emissions to air • BAT 19 (c) – Impermeable surface • BAT 21 – Emissions from accidents and incidents • BAT 24 – Reuse of packaging • BAT 34 – Reduce emissions to air of dust, organic compounds and odorous compounds (including H₂S and NH₃) • BAT 36 – Biological treatment of waste: aerobic methods • BAT 37 – Biological treatment of waste: aerobic methods 	Natural Resources Wales
IC6	The Operator shall submit for written approval a methodology for meeting the process parameters listed in table S3.3 as per BAT 38 for the anaerobic treatment of waste. The methodology shall identify each of the process parameters and detail the frequency and techniques in place to record the data. Where a process parameter cannot be monitored justification should be provided and/or a suitable alternative proposed. The methodology should include trigger levels for each of the parameters with associated procedures in place if trigger levels are exceeded.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC7	The Operator shall submit a written report to Natural Resources Wales for approval detailing how the site will implement the latest version of 'Technical Guidance Note M9 Environmental monitoring of bioaerosols at regulated facilities dated July 2018 Version 2'. The written report shall be submitted to Natural Resources Wales by July 31st 2021 and provide procedures and timelines for implementing the new methodology by October 31st 2021.	31 July 2021 and 31 October 2021 or otherwise agreed in writing with Natural Resources Wales

Table S1.4A Pre-operational measures	
Reference	Pre-operational measures
1	The Operator shall confirm that all containment, bunding and attenuation lagoon investigations/repairs proposed by the document; 819_3047_Schedule 5 II_response-V2 and 170217_Revision EP Mona_rev2 received on the 20 th February 2017 are in-place prior to the operation of the Phase 2 plant and equipment.

Table S1.4B Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
1	Anaerobic Digestion Plant	The operator shall not accept any of the following waste codes without seeking prior approval from Natural Resources Wales. A request must be sent to NRW with justification showing that these waste streams will not cause odour issues; 19 05 01, 19 05 02, 19 05 03, 19 05 99, 20 01 08, 20 01 99, 20 02 01, 20 03 01, 20 03 02, 20 03 03, 20 03 99

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels

Raw materials and fuel description	Specification
Biogas Methane (60-65%) Carbon Dioxide (35-40%) Other (<1%)	Combusted to produce electricity and heat. Biogas was selected as a fuel because it is readily available as a by-product from the AD process.
Lubricating Oil (mineral or synthetic oil)	To reduce friction between moving surfaces in the CHP engine.
Gear Oil (mineral oil)	To reduce friction between moving surfaces in the CHP engine.
Heating Oil (mineral oil)	Start-up fuel for the CHP engines.
Red Diesel fuel	To power the bob cat machinery used on-site. Used also for the emergency generator.
Antifreeze (ethylene glycol)	Antifreeze for engine cooling systems.
Metomex (patented micronutrients)	Added into the digesters as a feedstock.
ODR (neutralising additive)	Odour neutraliser for use in the feed hopper neutralising spray system.
Sulphuric acid (H ₂ SO ₄)	Used for ammonia removal in Phase 2 odour control unit

Table S2.2 Permitted waste types and quantities for use in the anaerobic digestion process

Maximum quantity	The total annual throughput must not exceed 49,500 tonnes per annum. ABPR waste will not be accepted.
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 03	plant-tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 01 07	wastes from forestry
02 01 99	wastes not otherwise specified
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 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 02 05	sludges from on-site effluent treatment
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 02	wastes from preserving agents
02 03 03	wastes from solvent extraction
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 03 99	wastes not otherwise specified
02 04	Wastes from sugar processing

02 04 03	sludges from on-site effluent treatment
02 04 99	wastes not otherwise specified
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 05 99	wastes not otherwise specified
02 06	Wastes from the baking and confectionary industry
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment
02 06 99	wastes not otherwise specified
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
02 07 02	wastes from spirit distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
02 07 99	wastes not otherwise specified
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 01	Wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 01 99	wastes not otherwise specified
03 03	Wastes from pulp, paper and cardboard production and processing
03 03 01	waste bark and wood
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	de-inking sludges from paper recycling
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
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
03 03 99	wastes not otherwise specified
07	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 01	Wastes from the manufacture, formulation, supply and use (MSFU) of basic organic chemicals
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11 ^(see note 1)
07 01 99	wastes not otherwise specified ^(see note 1)
07 02	Wastes from the manufacture, formulation, supply and use (MSFU) of plastics, synthetic rubber and man-made fibres
07 02 13	waste plastics
07 06	Wastes from the manufacture, formulation, supply and use (MSFU) of fats, grease soaps, detergents, disinfectants and cosmetics
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
12	WASTES FROM THE SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
12 01	Wastes from the shaping and physical and mechanical surface treatment of metals and plastics
12 01 05	Plastic shavings and turnings ^(see note 2)

15	WASTES PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	Packaging (including separately collected municipal packaging waste)
15 01 01	paper and cardboard packaging ^(see note 3)
15 01 02	plastic packaging ^(see note 3)
15 01 05	Composite packaging ^(see note 3)
15 01 06	Mixed packaging ^(see note 3)
15 01 09	Textile packaging ^(see note 3)
16	WASTES NOT OTHERWISE SPECIFIED ON THE LIST
16 03	Off-specification batches and unused products
16 03 06	organic wastes other than those mentioned in 16 03 05
16 10	Aqueous liquid substances destined for off-site treatment
16 10 02	aqueous liquid waste other than those mentioned in 16 10 01
16 10 04	aqueous concentrates other than those mentioned in 16 10 03
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 treatment of wastes (including dechromation, decyanidation, neutralisation)
19 02 03	Premixed wastes only of non-hazardous wastes
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09 ^(see note 4)
19 05	Wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal waste
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 05 99	wastes not otherwise specified
19 06	Wastes from anaerobic treatment of municipal waste
19 06 03	liquor from anaerobic treatment of municipal waste
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 05	liquor from anaerobic treatment of animal and vegetable waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 08	Wastes from waste water treatment plants not otherwise specified
19 08 09	Grease and oil mixture containing only edible oils and fats
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09	Wastes from the preparation of water intended for human consumption or water for industrial use
19 09 01	solid waste from primary filtration and screening
19 09 02	sludges from water clarification
19 09 06	solutions and sludges from regeneration of ion exchanges
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 01	paper and cardboard
19 12 04	plastic and rubber ^(see note 2)
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 12	other wastes (including mixture of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL,

INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS

20 01	Separately collected fractions (except 15 01)
20 01 01	paper and cardboard
20 01 08	biodegradable kitchen and canteen waste
20 01 11	textiles
20 01 25	edible oil and fat
20 01 38	wood (where no biodegradable coating or preservative)
20 01 39	plastics (see note 2)
20 01 99	wastes not otherwise specified
20 02	Garden and park wastes (including cemetery waste)
20 02 01	biodegradable waste
20 03	Other municipal wastes
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 99	wastes not otherwise specified

Notes:

1. Includes only materials that can be demonstrated to be of benefit to the overall health of the plant by buffering pH or offering micronutrients, or are capable of being broken down within the process and in any case will not give rise to compounds or mixtures which could affect the status of the digestate.
2. Only materials meeting BS EN 13432 will be accepted.
3. Packaging materials which are not suitable for anaerobic digestion but which contains organic materials capable of extraction through de-packaging will be accepted. Only the contents will be introduced into the digester.
4. Codes which may be suitable for glycerol.

Schedule 3(a) – Emissions and monitoring effective until 16 August 2022

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
A1	Exhaust stack on CHP Gas Engine	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:1999 or BS EN 13529:2002 depending on concentration
		mm-VOCs	75 mg/m ³			BS EN 13649:2002
A2	Auxiliary flare stack ^{Note 1}	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	No limit set	Hourly average	Annual	BS EN 14792
		Total VOCs	No limit set			BS EN 12619:1999 or BS EN 13529:2002
		Carbon monoxide	No limit set			BS EN 15058
A3	Odour Control Unit	No parameters set	No limit set	-	-	-
A4	Pressure relief valves/vents	No parameters set	No limit set	-	-	-

Note 1: Annual monitoring is only required when emergency flare operates in excess of 10 % of the time, taken on an annual assessment period.

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
S1	Surface water balancing facility	Visible oil and grease	No visible trace	Not specified	Weekly (discharge and rainfall dependant)	Visual check
		Visual contamination	No visible trace	Not specified		Visual check
		Ammonia	0.3 ppm	Not specified		Instantaneous ammonia reading

Table S3.3 Process monitoring requirements

Emission point reference or source or description of point of measurement	Parameter ^{Note 1}	Monitoring frequency	Monitoring standard or method	Other specifications
Biogas from digesters	Flow	Continuous	In accordance with EU weights and measures regulations	Gas monitors calibrated every 6 months to manufacturers requirements
	Methane (CH ₄)			
	Hydrogen sulphide (H ₂ S)			
	Carbon dioxide (CO ₂)			
Digesters, storage tanks, waste reception building, drying hall, compost storage area	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary
Amount of sulphuric acid used per day		Daily		
Amount of biogas used by the CHP unit per day	t/day	Daily	As agreed in writing with Natural Resources Wales	

Note 1: There is no requirement to report process monitoring data. The information shall be made available at the Installation for inspection

Table S3.4 Bioaerosol monitoring requirements

Location or description of point of measurement	Parameter	Bioaerosol threshold limits CFU m ⁻³ (these limits do not apply to upwind measurements)	Monitoring frequency	Monitoring standard or method	Other specifications
At a minimum of 3 separate locations, as described in the Evaluation of Bio-aerosols document submitted with the application	Gram negative bacteria	300	Monthly This may reduce after the first six months if agreed in writing by Natural Resources Wales	In accordance with M9; Environmental monitoring of bioaerosols at regulated facilities	As described in the industry standard protocol, including all the requirements specified within
	Total bacteria	1000			
	Aspergillus Fumigatus	500			

Schedule 3 (b) – Emissions and monitoring effective from 17 August 2022

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
A1	Exhaust stack on CHP Gas Engine	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	500 mg/m ³	Hourly average	Annual	BS EN 14792
		Sulphur dioxide	350 mg/m ³			BS EN 14791
		Carbon monoxide	1400 mg/m ³			BS EN 15058
		Total VOCs	1000 mg/m ³			BS EN 12619:1999 or BS EN 13529:2002 depending on concentration
		mm-VOCs	75 mg/m ³			BS EN 13649:2002
A2	Auxiliary flare stack ^{Note 1}	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	No limit set	Hourly average	Annual	BS EN 14792
		Total VOCs	No limit set			BS EN 12619:1999 or BS EN 13529:2002
		Carbon monoxide	No limit set			BS EN 15058
A3	Odour Control Unit	Odour concentration ^{Note 2}	1,000 OUE/Nm ³	Not specified	Every 6 months	EN 13725
		Hydrogen sulphide (H ₂ S) ^{Note 2}	No limit set	Not specified	Every 6 months	US EPA Method 11 (Impinger method) or CEN TS 13649 (Charcoal tube), US EPA Method 15
		Ammonia (NH ₃) ^{Note 2}	20 mg/Nm ³	Not specified	Every 6 months	EN ISO 21877
A4	Pressure relief valves/vents	No parameters set	No limit set	-	-	-

Note 1: Annual monitoring is only required when emergency flare operates in excess of 10 % of the time, taken on an annual assessment period.

Note 2: Parameters, limits and monitoring requirements to be agreed upon completion of Improvement Condition IC5. As per BAT Conclusion 8 of the Waste Treatment BRef Document (EU 2018), odour may be monitored instead of hydrogen sulphide and ammonia. As per BAT Conclusion 34 of the Waste Treatment BRef Document (EU 2018) either the BAT-AEL for ammonia or the BAT-AEL for the odour concentration applies.

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
S1	Surface water balancing facility	Visible oil and grease	No visible trace	Not specified	Weekly (discharge and rainfall dependant)	Visual check
		Visual contamination	No visible trace	Not specified		Visual check
		Ammonia	0.3 ppm	Not specified		Instantaneous ammonia reading

Table S3.3 Process monitoring requirements

Emission point reference or source or description of point of measurement	Parameter ^{Note 1}	Monitoring frequency	Monitoring standard or method	Other specifications
Digesters, storage tanks, waste reception building, drying hall, compost storage area	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary
Amount of sulphuric acid used per day		Daily		
Amount of biogas used by the CHP unit per day	t/day	Daily	As agreed in writing with Natural Resources Wales	
Digester feed	pH			
	Alkalinity			
	Hydraulic and organic loading rates			
Digester	Operating temperature			
	Liquid and foam levels			
	Concentration of ammonia			
	Concentration of VFAs			
	Alkalinity	To be agreed with NRW	To be agreed with NRW	Subject to approved methodology in improvement condition IC6 and as agreed with NRW
	FOS/TAC ratio (VFA/TA)			
Digestate	pH			
	Concentration of VFAs			
	Ammonia			
Biogas from digesters	Flow			
	Quantity			
	Pressure			
	Composition			
	Methane			
	Hydrogen Sulphide			
	Carbon Dioxide			

Note 1: There is no requirement to report process monitoring data. The information shall be made available at the Installation for inspection

Table S3.4 Bioaerosol monitoring requirements

Location or description of point of measurement	Parameter	Bioaerosol threshold limits CFU m ⁻³	Monitoring frequency	Monitoring standard or method	Other specifications
	Total bacteria	1000			

Table S3.4 Bioaerosol monitoring requirements

Location or description of point of measurement	Parameter	Bioaerosol threshold limits CFU m⁻³	Monitoring frequency	Monitoring standard or method	Other specifications
Bioaerosols shall be monitored: - upwind of the site and - downwind of the site; in accordance with "M9 – Technical Guidance Note (Monitoring) – Environmental monitoring of bioaerosols at regulated facilities, 2018 Version 2".	Aspergillus Fumigatus	500	Quarterly unless otherwise agreed in writing by Natural Resources Wales	In accordance with "M9 – Technical Guidance Note (Monitoring) – Environmental monitoring of bioaerosols at regulated facilities, 2018 Version 2" unless otherwise agreed in writing by Natural Resources Wales	As described M9 Technical Guidance Note, including all the additional data requirements specified therein.

Schedule 4 (a) – Reporting until 16 August 2022

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

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2	Every 12 months	1 January
Bio-aerosol monitoring Parameters as required by condition 3.5.1	3 locations	Monthly	1 January

Table S4.2: Annual production/treatment

Parameter	Units
Biogas produced by AD facility	m ³
Liquid digestate	m ³
Solid digestate	tonnes
Total amount of compost produced	tonnes
Total amount of ammonium sulphate produced	tonnes
Total amount of waste treated	tonnes
Total amount of biomass treated	tonnes
Total amount of sulphuric acid used	tonnes

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Power output	Annually	MWh
Energy Efficiency		MWh/m ³ biogas
Electrical energy exported to the grid		MWh
Electrical energy drawn from the grid		MWh
Water usage		m ³
Operational time of flare		% of operational time

Table S4.4 Reporting forms

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	01/01/16
Water usage	Form water usage 1 or other form as agreed in writing by Natural Resources Wales	01/01/16
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	01/01/16
Bio-aerosol monitoring	Form BA1 or other form as agreed in writing by Natural Resources Wales	24/07/17
Waste Subject to Conditions 4.2.5 and 4.2.6	Waste tonnage return form from the Natural Resources Wales website or other form as agreed in writing by Natural Resources Wales	N/A

Schedule 4 (b) – Reporting effective from 17 August 2022

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.5.1	S1	Every 3 months	1 January, 1 April, 1 July, 1 October
Bio-aerosol monitoring Parameters as required by condition 3.5.1	3 locations	Every 3 months or as otherwise agreed in writing by Natural Resources Wales	1 January, 1 April, 1 July, 1 October or as otherwise agreed in writing by Natural Resources Wales

Table S4.2: Annual production/treatment	
Parameter	Units
Biogas produced by AD facility	m ³
Liquid digestate	m ³
Solid digestate	tonnes
Total amount of compost produced	tonnes
Total amount of ammonium sulphate produced	tonnes
Total amount of waste treated	tonnes
Total amount of biomass treated	tonnes
Total amount of sulphuric acid used	tonnes

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Power output	Annually	MWh
Energy Efficiency	Annually	MWh/m ³ biogas
Electrical energy exported to the grid	Annually	MWh
Electrical energy drawn from the grid	Annually	MWh
Water usage	Annually	m ³
Operational time of flare	Annually	% of operational time
Energy usage	Annually	MWh
Generation of residues	Annually	tonnes
Generation of wastewater	Annually	m ³
Amount of biogas sent to the flare	Annually	m ³

Table S4.4 Reporting forms

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	17/08/2022
Water	Form water 1 or other form as agreed in writing by Natural Resources Wales	17/08/2022
Water usage	Form water usage 1 or other form as agreed in writing by Natural Resources Wales	01/01/16
Energy usage	Form energy 1 or other form as agreed in writing by Natural Resources Wales	17/08/2022
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	17/08/2022
Waste Subject to Conditions 4.2.5 and 4.2.6	Waste tonnage return form from the Natural Resources Wales website or other form as agreed in writing by Natural Resources Wales	N/A
Bioaerosol monitoring	As specified in the "M9 – Technical Guidance Note (Monitoring) – Environmental monitoring of bioaerosols at regulated facilities, 2018 Version 2". or other form as agreed in writing by Natural Resources Wales	N/A

Schedule 5 - Notification

These pages outline the information that the operator must provide.

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

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

Part A

Permit Number	EPR/AP3033HY
Name of operator	
Location of Facility	
Time and date of the detection	

(a)	
Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
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 permit condition	
To be notified within 24 hours of detection	
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) In the event 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:	
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

“ABPR” means Animal By-Products Regulations

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

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

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

“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 Natural Resources Wales 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.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“best available treatment, recovery and recycling techniques” shall have the meaning given to it in the document published jointly by the Department for Environment, Food and Rural Affairs, the Welsh Assembly Government and the Scottish Executive on 27th November 2006, entitled “Guidance on Best Available Treatment, Recovery and Recycling Techniques (BATRRRT) and Treatment of Waste Electrical and Electronic Equipment (WEEE);

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

*“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.*

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

“disposal” or “D” 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 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.

“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 or background concentration limit.

“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.

“hazardous property” has the meaning in Annex III of the Waste Framework Directive

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

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

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

“*Pests*” means Birds, Vermin and Insects.

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

“*recovery*” or “*R*” 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.

‘*residue*’ means the solid waste generated by the waste treatment activity and is not directly related to the type of waste treated in the plant

“*Solvent Emissions Directive*” means Directive 1999/13/EC (as amended by Directive 2004/42/EC) on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.

“*Waste code*” means the six digit code referable to a type of waste in accordance with the list of wastes established by Commission Decision 2000/532/EC as amended from time to time (the ‘List of Wastes Decision’) 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.

“*Waste Treatment BAT Conclusions*” means the BAT Conclusions for the Waste Treatment sector published as a Commission Implementing Decision EU 2018/1447 in the Official Journal of the EU on 17 August 2018

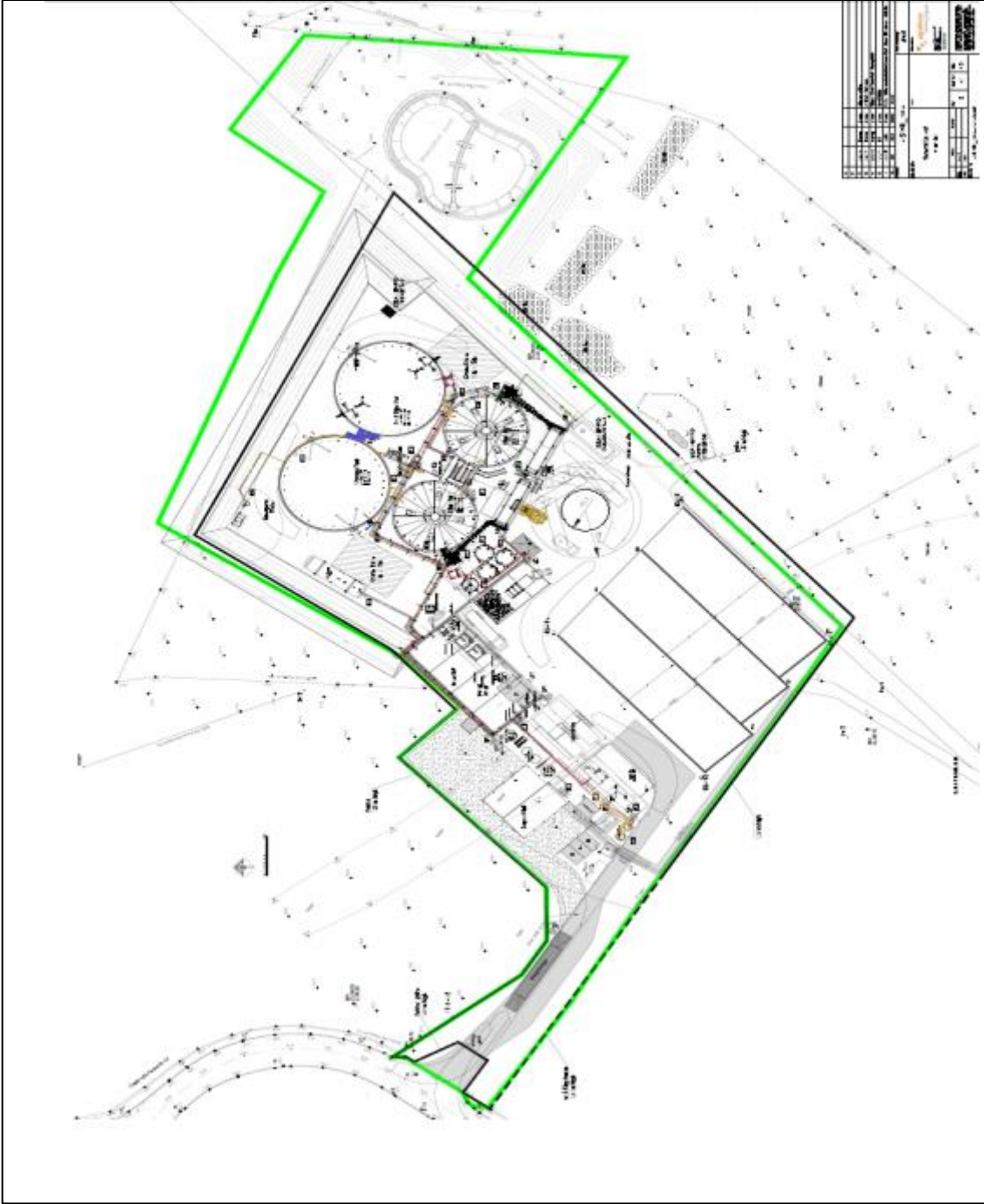
“*year*” means calendar year ending 31 December.

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:

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

Schedule 7 - Site plan



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