

Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – GP Biotec Ltd

We have decided to issue the variation for Great Porthamel Anaerobic Digestion Plant in Talgarth, Brecon, Powys operated by GP Biotec Ltd.

The permit number is **EPR/AB3233DW/V007**.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

The permit has been varied following the publication of the revised Best Available Techniques (BAT) Reference Documents (BREF) for Waste Treatment. The associated BAT conclusions to this document were published on 17 August 2018 in the Official Journal of the European Union.

This variation incorporates the changes required by the Industrial Emissions Directive following a statutory review of permits in the Waste Treatment sector. These include the amendment of the wording of several permit conditions relating to notifications, changes to emissions limits and monitoring requirements.

We are satisfied that the operator will be compliant with the published BAT conclusions which will apply from 17 August 2022.

Purpose of this document

This decision document:

- explains how we have carried out our statutory review of the Operator's Permit;
- why we have decided to vary the Permit as a result of that review; and
- why we have included the specific conditions in the revised Permit through the variation notice we are issuing.

It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position.

Structure of this document

- Assessment of Great Porthamel AD Plant against the published BAT conclusions for Waste Treatment.
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions

Assessment of Great Porthamel Anaerobic Digestion Plant against the published BAT conclusions for Waste Treatment

1. Our decision

We have issued a variation, which will allow GP Biotec Ltd to operate the installation, subject to the conditions in the varied permit.

The variation does three things:

- it consolidates the original permit to reflect changes made through earlier variations;
- it brings the permit into line with our modern regulatory template; and

- it varies the permit where appropriate to reflect the outcome of our statutory review and incorporate Best Available Techniques (BAT) and Associated Emission Limit Values (BAT-AELs).

We consider that, in reaching this decision, we have taken into account all relevant considerations and legal requirements and that the permit will continue to ensure that a high level of protection is provided for the environment and human health.

The original permit, issued on the 12 March 2012, ensured that the installation, employed Best Available Techniques (BAT) and ensured a high level of protection for human health and the environment. We have altered the permit as a result of the statutory review, and we are confident that the new requirements will deliver a superior level of protection to that which was previously achieved. Where a site is not currently compliant with BAT, Improvement Conditions have been included to bring the site up to standard by 17 August 2022.

2. The legal framework

The Variation and Consolidation Notice (which includes the consolidated permit as Schedule 2) will be issued under Regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 (EPR). The environmental permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the Industrial Emissions Directive (IED);
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Variation and Consolidated Permit, it will ensure that the operation of the installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

3. How we reached our decision

Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 on 4 April 2019 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Regulation 61(1) Notice required the operator to:

- Describes the techniques that will be implemented before 17 August 2022, which will then ensure that operations meet the revised standard, or
- Justify why standards will not be met by 17 August 2022, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- Justify why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

Where their permitted activity involves the use, production or release of a hazardous substance, as defined in Article 3(18) of the Industrial Emissions Directive, GP Biotec Ltd were required to carry out a risk assessment considering the possibility of soil and groundwater contamination at the permitted installation with such substances. Where risk of such contamination is established prepare a baseline report containing information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definite cessation of the activity. GP Biotec Ltd have a Site Condition Report 2014 which considers the potential for operations on site to impact soil and groundwater underlying the installation to be low risk. GP Biotec Ltd have also provided 'Table 1.0 Summary of Chemical and Materials used', to detail the different substances used by the site as well as substances produced from the site's activities. Table 1.0 references a data sheet (noted as 'available on request') which GP Biotec Ltd have stated provides all relevant information with respect to the use of these substances and covers information on

hazard identification, composition, handling and storage, physical and chemical properties, disposal consideration, regulatory information etc. GP Biotec Ltd have stated that as per the guidelines provided by COUNCIL REGULATION (EC) No 428/2009, there are no other identified hazardous substances used, produced or released by the site.

Where their permitted activity involves the use, production, storage or release of a priority hazardous substances and any other relevant substances, as defined by the Water Framework Directive, GP Biotec Ltd were required to carry out a risk screening assessment considering the presence of priority hazardous substances at the permitted installation. Where a risk of these substances is established the operator is to sample the effluent and screen for the priority hazardous substances. If these substances are found to be present in the effluent stream, then assessment using the H1 tool and potential detailed modelling will be required to demonstrate that the effluent discharge will not have a significant impact to the receiving water. GP Biotec Limited do not have any discharges of process water to surface water or sewer; only clean surface water which discharges via pipeline to River Llynfi and is tested prior to release.

Where the operator proposed that they were not intending to meet a BAT standard, that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61(1) Notice requested that the operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 61(1) Notice response from the operator was received on the 18 September 2019, with additional information received on the 6 and 12 February 2020, 10 August 2020 and 3 September 2020.

We considered that the response contained sufficient information for us to commence determination of the permit review. The operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 61 (1) Notice response that appears to be confidential in relation to any part.

4. Key issues/Regulation 61 (1) response

BAT Conclusions for the Waste Treatment were published as a Commission Implementing Decision (EU 2018/1447) in the Official Journal of the EU on 17 August 2018. There are 53 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This should be read in conjunction with the permit/variation notice issued.

A detailed response was received from GP Biotec Ltd. Following assessment of the Regulation 61(1) response, further information was requested from GP Biotec Ltd. Where the operator has concluded that they have achieved BAT, and we are in agreement, no further information/justification has been sought by Natural Resources Wales.

5. Changes we have made

Improvement Conditions

Based on the information provided in the Regulation 61 (1) response, we consider that we need to set improvement conditions. These conditions are set out below. We are using these conditions to require the operator to provide Natural Resources Wales with details that need to be established or confirmed during operations. The improvement conditions ensure compliance by 2022. IC 1-7 are improvements required to meet the BAT conclusions of the Waste Treatment BREF Document (EU2018).

Reference	Requirement	Date
IC1	The operator shall submit evidence of ISO 14001:2015 certification to Natural Resources Wales. 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 Conclusions of the Waste Treatment BREF Document (EU 2018): BAT 1 ii. Planning and implementing procedures, objectives & targets in conjunction with financial planning & investment BAT 1 iv. i) Safeguarding compliance with environmental legislation (e.g. legal register reviews) BAT 1 vii. Following the development of cleaner technologies BAT 1 VIII. Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life BAT 1 xi. The inventory of waste gas stream (and BAT 3) BAT 1 xii. Residues Management Plan	17th February 2022 or otherwise agreed in writing with Natural Resources Wales

IC2	The operator shall submit to Natural Resources Wales a written procedure(s) in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: BAT 3 i) a) Update the existing process flow diagram to include the activated carbon filtration system outlet (which serves the blood storage tanks and ABP hopper) as an emission source (BAT 3 (i)(a)). BAT 3 iii) establish an inventory of waste gas (for the waste gas from the blood storage tanks and ABP hopper to be treated by the activated carbon filtration system) to collate the information in accordance with BAT3, including but not limited to average concentrations and load values of relevant substances.	17th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC3	The operator shall submit to Natural Resources Wales an updated Odour Management Plan in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: BAT 10 - monitoring to an EN standard (either dynamic olfactometry according to EN 13725 in order to determine the odour concentration or EN 16841-1 or -2 in order to determine the odour exposure) will be carried out in the event of a substantiated odour incident.	17th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC4	The operator shall submit to Natural Resources Wales a report assessing the gas recovery system capacity to ensure sufficient capacity in line with BAT 15(a), correct plant design. It is noted that treatment capacity at the site has increased (V006) and as such the capacity of the gas recovery system should be re-assessed to ensure it is still fit for purpose.	17 th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC5	The operator shall submit to Natural Resources Wales information in order to evidence compliance with BAT 19 requiring the use of one or a combination of techniques: c) impermeable surface (information on how the site complies with CIRIA 736 or an equivalent engineering standard to which the surface complies together with sign off from construction by a Certified Quality Auditor) in accordance with requirements specified within BAT Conclusion 19 of the Waste Treatment BAT Conclusions (EU 2018).	17 th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC6	The operator shall submit to Natural Resources Wales a written procedure(s) in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: BAT 23 a) an energy efficiency plan for monitoring and analysing performance against indicators. BAT 23 b) energy flow information in an energy balance record showing how the energy is used throughout the process.	17th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC7	The operator shall submit to Natural Resources Wales a written procedure(s) in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: BAT 33 In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input. The technique consists of carrying out the pre-acceptance, acceptance and sorting of the waste input (see BAT 2) so as to ensure the suitability of the waste input for the waste treatment, e.g. in terms of nutrient balance, moisture or toxic compounds which may reduce the biological activity.	17th February 2022 or otherwise agreed in writing with Natural Resources Wales
IC8	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	17 th February 2022 or otherwise agreed in writing

	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.	with Natural Resources Wales
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IC8 has been included on the permit for the operator to demonstrate that they have control over their aerobic treatment of waste process. BATc 38 of the Waste Treatment BREF requires the Operator to reduce emissions to air and to improve the overall environmental performance. BAT to is to monitor and/or control the key waste and process parameters. The description requires the operator to have a manual and/or automatic system and lists a number of example process parameters.

The approach taken by NRW is to have an improvement condition for the operator to submit a methodology for how they will address the requirements listed in Table S3.3 of the permit. The Operator will confirm how the information will be gathered, for example, using a SCADA system, on-site testing, sampling etc as well as the frequency this information will be recorded. Where the operator does not undertake certain monitoring parameters they must provide suitable justification and/or offer an alternative parameter.

This IC (IC8) is for the operator to demonstrate control over their process. NRW need to understand trigger levels on site by the Operator as well as the frequency of the monitoring. This information will help inform NRW that the process is stable. The monitored parameters may be submitted as part of the annual report, however, if there is an issue at the site the Schedule 5 Notification Form should be sent to NRW informing us of any issues or exceedances of trigger levels.

This procedure should be reflected within the sites EMS with the site having appropriate backup of this information. The resulting response to IC will become part of the Operating Techniques in Table S1.2.

Operational Changes

GP Biotec Ltd operate two combined heat and power (CHP) engines. A permit must be applied for and in place by 1st January 2024 for existing MCPs with a capacity greater than 5MWth and less than 50MWth or by 1st January 2029 for MCPs with a capacity between 1MWth and less than or equal to 5MWth. ELVs and monitoring for existing MCPs & SGs is not required until 1st January 2025 at the earliest. As this is

some way off, we decided to maintain any existing ELVs and monitoring requirements in the permit and not to impose new stricter ELVs ahead of time.

The emission point W2 has been added to the permit under Schedule 3, Table S3.2 as a point source emission to water. This is uncontaminated surface water from the parking and turning areas and identified on the Site plan in Schedule 7.

The point source emission points to air from pressure relief valves have been added to the permit under Schedule 3, Table S3.1. These relate to points PRV1-4 on the site plan in schedule 7. No limits are associated with these points.

Emission points W2 and PRV1-4 have been updated as should already listed on the permit as they are existing emission points.

Emissions to Water

As part of our delivery of the Water Framework Directive requirements, we need to identify and assess the impact for all discharges to surface waters and/or sewer from the site for priority hazardous substances and any other relevant substances. The emissions monitoring for these substances should be carried out using the methods and standards described in the M18 guidance on “Monitoring of discharges to water and sewer”.

With reference to the risk assessment guidance on the gov.uk website entitled “Surface water pollution risk assessment for your environmental permit” (accessible via: <https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit>) the following assessments are required:

- Screening tests for priority hazardous pollutants and any other relevant priority hazardous substances.
- For any substance which is not screened out by the screening tests further modelling, as described in the risk assessment guidance “Surface water pollution risk assessment for your environmental permit”.

The company did not carry out this risk assessment as there are no discharges to surface water or sewer from the installation other than clean uncontaminated surface water.

The specific BAT Conclusions on water emissions were also reviewed based on the Waste Treatment BREF and no changes are made to the ELV's for emissions to water taking into account BAT Conclusion 20 from the BREF.

There are no emissions of waste water to water (only an emission of clean uncontaminated water) associated with the permitted activity.

Emissions to Water – Article 15(4) Derogations

No derogations

Emissions to Air

There were changes to the ELV's for emissions to air taking into account BAT conclusions from the Waste Treatment BREF.

The tables below outlines the parameters and limits set to implement BAT 8 and the BAT-AELs set out in BAT 34:

Effective until 16th August 2022

Release point	Parameter	Limit/ BAT AEL	Effective until
Point A6 on site plan in schedule 7	none	none	16/08/2022
Activated carbon filtration outlet			

Effective from 17th August 2022

Release point	Parameter	Limit/ BAT AEL	Effective from
	NH ₃	20 mg/Nm ³	17/08/2022

Point A6 on site plan in schedule 7	H ₂ S	none	17/08/2022
Activated carbon filtration outlet			

Where BAT associated emission levels are identified (BAT-AELs), limits may be prescribed at the top end of the range unless the proximity of sensitive receptors requires a tighter limit or if tighter limits are previously on the permit, this ensures no backsliding of emission limits.

Emission point A6 have been added to the permit for carbon filter used to treat odorous air collected from storage waste and digestate (dry) storage areas. Carbon filters at point A4 and A5 are also included on the site plan, the emission outlets for carbon filters A4, A5 are enclosed within the CHP engines which means all the emissions from the filtration units go through the CHPs to emit through the exhaust of the CHPS (emission points A1 and A2). Any ammonia or hydrogen sulphide is likely to be consumed in the combustion process (CHP engines and emissions via outlets A1 and A2 and therefore no limits added for ammonia or hydrogen sulphide. These systems have been installed in response to previous odour complaints. These are small release points installed to treat releases of odour only. The appropriate BAT-AEL's have been adopted for emission point A6 (as detailed in the table above) and are in line with BAT. No emission limits/BAT-AEL's have been set for the Carbon filters labelled as A4 and A5 as their emissions are via the CHP engines and emissions points A1 and A2. Any ammonia or hydrogen sulphide is likely to be consumed in the combustion process of the CHP engines and therefore no need to set a limit.

Emissions to Air – Article 15(4) Derogations

No derogations

Other IED BREFs relevant to the permit review

There are no specific listed activities within Table S1.1 of the permit that are within scope of other published BREFS.

6. Conclusion

We consider that the installation already employed what used to be BAT, but that the operator requires a few improvements to meet the new BATc. The revised BREF and its BAT-AELs provide the opportunity to consider further environmental improvements.

Coupled with the consolidation and modernisation of the permit, we believe this variation provides a sound basis for ongoing regulation of the installation and we are satisfied that the operator is currently achieving or will be achieving all relevant BAT by 17 August 2022.

We believe that we have ensured compliance with all relevant legal requirements in carrying out this review and making our determination on the variation.

Annex 1: Decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the Waste Treatment Bref were published as a Commission Implementing Decision ((EU 2018/1147) in the Official Journal of the EU on 17th August 2018. There are 53 BAT Conclusions. This checklist provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the consolidated variation notice.

All BAT Conclusions arising are listed by number in order below;

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
OVERALL ENVIRONMENTAL PERFORMANCE		
	Environment Management System (EMS) – <u>ALL</u> of the following:	
1	I. Management commitment	Currently compliant An Environmental Management System (EMS) is in place with the full commitment of senior management in accordance with the plan, do, check and act cycle. The operator is currently taking steps to adopt the ISO14001 Standard. Full certification is yet to be achieved but application process is underway.

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	II.	Environmental policy development including CI of performance	Currently compliant An effective Environmental Policy is in place with the commitment to an annual review to ensure continued adoption of best practice.
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	Compliant in future The operator has not provided any information on this feature. An improvement condition (IC) has been set – IC1.
	IV.	Implementation of procedures	
		(a) Structure & responsibility	Currently compliant Workplace organogram is in place with a direct line of management structure as well as clear definition of responsibilities and roles
		(b) Recruitment, training, awareness & competence	Currently compliant At recruitment, the skills, experience and previous training of the applicant is assessed in order to appoint the most suitable person for the job. Training needs are reviewed at recruitment of new starters and then formally on an annual basis during appraisals. Training needs are also identified on an ongoing basis for example following change in legislation or standards.
		(c) Communication	Currently compliant An effective and continuous communication between workers at all levels is in place through varied modes of communication such as emails, WhatsApp chats, notice boards, monthly staff meetings and tool box talks. All policies, standards and practices adopted by the company are communicated to employees.

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
		(d) Employee involvement	Currently compliant Employees are engaged through periodic staff meetings and annual appraisal meetings. Employees are provided feedback as and when required and are encouraged to communicate any suggestions and thoughts to senior management. During tool box talks, employees are encouraged to share their knowledge and best practices on environmental issues as it relates to their work duties.
		(e) Documentation	Currently compliant All Operating procedures, site infrastructure and layout are documented. The associated records for each procedure are documented.
		(f) Effective process control	Currently compliant All process and process controls are documented to ensure standardization of the process.
		(g) Maintenance programmes	Currently compliant Routine inspection, testing, servicing and calibration of equipment, machines and products is undertaken.
		(h) Emergency preparedness & response	Currently compliant Emergency planning, assessment of risk and response and recovery outlined in Accident Management Plan v4 (AMP)
		(i) Safeguarding compliance with environmental legislation	Compliant in future The operator has not provided information on any procedures relating to review of environmental legislation and safeguarding

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			compliance with environmental legislation. An IC has been set to add a legal register to the EMS which should be reviewed periodically to ensure the site stays aware of relevant environmental legislation and maintains compliance. IC1 set.
	V.	Checking performance and taking corrective action	
		(a) Monitoring & measurement	Currently compliant Monitoring of all parameters necessary for permit compliance carried out and in accordance with EP- E08 Environmental Management and Monitoring Procedure
		(b) Corrective and preventive action	Currently compliant GP-E10 Environmental Records procedure refers to the accident and incidents record which includes recording the known or suspected cause(s) and the action that is taken when the incident took place. If preventative action is taken, then this will also be recorded. The same procedure also refers to PAS 110 Quality Management System audits actioning non-conformities and follow-up activities including verification of the actions taken and reporting of verification results. Hazard Analysis and Critical Control Points have been identified and defined using Codex Alimentarius. A detailed HACCP is in place.
		(c) Maintenance of records	Currently compliant All maintenance records after inspections i.e. daily, weekly, monthly checks are maintained and kept together with records

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
		after testing of samples and records from calibration and servicing of equipment.
	(d) Independent (where practicable) internal or external EMS auditing	Currently compliant Established system in place for annual auditing of management systems in line with Anaerobic Digestion quality protocols (PAS 110).
	VI.	Senior management review of EMS
	Currently compliant Procedure to review management system in place.	
	VII.	Following development of cleaner technologies
	Compliant in future The operator has not provided information on any procedure or feature of the EMS that ensures the site follows the development of cleaner technologies going forward. An IC has been set – IC1.	
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life
Compliant in future Operator stated N/A, however, considerations should be taken for impacts of eventual decommissioning and throughout its operating life. Improvement Condition set (IC1).		
IX.	Regular sectoral bench marking	Currently compliant Participant of Aardvark AD Benchmarking surveys. Conclusions and results from this exercise factored in management reviews. Also a member of the Welsh Government's SMART Expertise Programs which seeks to explore innovative bioprocesses to improve the overall efficiency of a range of industrial operations.
X.	Waste stream management (BAT 2)	Currently compliant

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			An effective system of tracking waste received into the site, where it has come from and how much of the waste has come in through the use of a weighbridge system. All waste produced by the site is recycled through a weekly collection arrangement.
	XI.	Inventory of waste water & waste gas streams (BAT 3)	Compliant in future The operator has indicated this is not applicable but a waste gas stream inventory needs to be produced and added to the EMS, for the waste gas flowing to the activated carbon filtration system serving the blood storage tanks and ABP hopper. An IC1 has been set.
	XII.	Residues Management Plan – S6.5	Compliant in future A Residues Management Plan needs to be implemented as part of the EMS providing measures aiming to 1) minimise the generation of residues arising from the treatment of waste 2) optimise the reuse, regeneration, recycling and/or recovery of energy of the residues and 3) ensure the proper disposal of residues. An IC1 has been set.
	XIII.	Accident Management Plan – S6.5	Currently compliant There is an AMP in place.
	XIV.	Odour Management Plan (BAT 12)	Currently compliant An Odour Management Plan is in place.
	XV.	Noise & Vibration Management Plan (BAT 17)	Not applicable N/A

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
2	Improving overall environmental performance – <u>ALL</u> of the following:	
	a.	Set up and implement waste characterisation & pre-acceptance procedures
	Currently compliant Waste Pre-acceptance procedure in place that includes information to be obtained in line with BAT.	
	b.	Set up and implement waste acceptance procedures
	Currently compliant Waste Acceptance procedure in place which covers logistics, identification of waste and the removal and management of any contamination. This includes a system of pre booking, load collection and inspection and load arrival on site. Loads are not accepted onto site unless sufficient storage capacity exists.	
	c.	Set up and implement a waste tracking system & inventory
	Currently compliant An electronic tracking system is in use on the site which allows for the weight of waste, waste type, ABP category, source of waste and details of the delivery vehicle to be tracked and procedures are in place detailing: Waste Acceptance (detailing electronic waste tracking system), AD Operation (detailing product labelling prior to off-site transfer), Off-site Waste Transfer (detailing transfers recorded in site diary).	
	d.	Set up and implement an output quality management system
	Currently compliant Process Control and Monitoring procedure is in place detailing requirements to comply with PAS 110, the AD Quality Protocol and Biofertiliser Certification Scheme and the sampling and testing	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			undertaken to check compliance together with reference to the sites Hazard Analysis and Critical Control Point Plan.
	e.	Ensure waste segregation	Currently compliant Waste Reception procedure in place which describes how different wastes are segregated e.g. ABP / liquid / blood etc. Once waste is accepted on site, it is delivered to the relevant reception area which are signposted and labelled, i.e. either to the ABP waste Reception area or non-ABP waste reception area. The farm derived feedstocks are stored in silage clamps on the site’s affiliated farmyard (Great Porthamel Farm).
	f.	Ensure waste compatibility prior to mixing or blending	Currently compliant Permitted to accept only non-hazardous, biodegradable and ABPR wastes so there would not be any compatibility issues other than keeping the ABPR wastes separate (and ensuring only permitted wastes accepted), for which SOPs are in place. The operator adheres strictly to selecting materials compatible with the chemistry of AD tanks.
	g.	Sort solid incoming waste – S6.4	Currently compliant All incoming solids are separated and transported to the solids reception area. Solids are kept separate from liquids to enable easier and environmentally safer storage and treatment. Waste Reception procedure in place which describes how solid wastes are

BATc number		Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
				sorted (i.e. visual check) and process flow diagram which shows macerating screws and stone trap.
3	Establish and maintain a waste water and waste gas inventory as part of the EMS - <u>ALL</u> of the following:			
	Information on characteristics of waste and waste treatment processes			
	(i)(a)	simplified process flow sheets showing emission sources		Compliant in future A process flow diagram has been provided but needs to be updated to include the activated carbon filtration system outlet serving the blood storage tanks and ABP hopper as an emissions source. An IC has been set – IC2.
	(i)(b)	Process-integrated and waste water/waste gas treatment descriptions including performance		Currently compliant Information on the waste gas treatment (activated carbon filtration system for blood storage tanks and ABP hopper) is provided in the Odour Management Plan v3 (OMP) and V004 permit variation application document indicating the plant would remove 100% of emissions. Performance guarantee in Annex II of the OMP (for H ₂ S).
	Information on characteristics of waste water streams			
	(ii)(a)	Mean and variability of:		Not applicable There are no waste water discharges to watercourses or sewers. Surface water from the ABP reception area is collected and transferred into the AD tanks.
		Flow		As above
		pH		As above

BATc number		Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
		Temperature		As above
		Conductivity		As above
	(ii)(b)	Mean concentration, load and variability of:		Not applicable There are no waste water discharges to watercourses or sewers. Surface water from the ABP reception area is collected and transferred into the AD tanks.
		Total suspended solids		As above
		COD/TOC		As above
		Nitrogen species		As above
		Phosphorous		As above
		Metals		As above
		Priority substances/micropollutants		As above
		Any other relevant compounds		As above
		(ii)(c)	Bioeliminability data (see BAT 52):	
	BOD		As above	
	BOD to COD ratio		As above	
	Zahn-Wellens test		As above	
	Biological inhibition potential		As above	
Information on characteristics of waste gas streams				

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	(iii)(a)	Mean and variability of:		Compliant in future Information on the waste gas stream treated by the activated carbon filtration system serving the blood storage tanks and ABP hopper needs to be collected. An IC has been set – IC2.
		Flow		As above
		temperature		As above
	(iii)(b)	Mean concentration, load and variability of relevant substances:		As above
		Organic compounds		As above
		POPs e.g. PCBs		As above
		Any other relevant compounds		As above
	(iii)(c)	Flammability		As above
		Lower and Higher Explosive Limits		As above
		Reactivity		As above
	(iii)(d)	Presence of other substances that may affect the gas treatment system or plant safety:		As above
		O2		As above
		N2		As above
		Water vapour		As above
		Dust		As above
4	Reducing environmental risk associated with waste storage – ALL of the following:			

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	a.	Optimised storage location	Not applicable Technique a is 'generally applicable to new plants'.
	b.	Adequate storage capacity	Currently compliant Storage availability assessed against waste intake and product output. Assessment takes into consideration parameters such as retention times, spreading rates and weather patterns. Arrival of loads on site and accompanying documentation is overseen and managed by the Site Managers.
	c.	Safe storage operation	Currently compliant The operator has indicated that all storage facilities and tanks are built according to permit bunding requirement with the use of impermeable surfaces and anti-corrosion materials. Daily checks on storage tanks are carried out for leak detection. All ABP waste accepted on site is delivered into the dedicated and segregated 'dirty' area to comply with the EU ABP Regulations to minimise potential contamination.
	d.	Separate area for storage & handling of packaged hazardous waste	Not applicable Hazardous waste not accepted on site.
5	Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:		
	Carried out by competent staff		Currently compliant Regular training and tool box talks for all staff are provided to ensure a continual development in necessary skills such as handling

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		and transfer of waste. Training records are kept in the site office intranet.
	Duly documented, validated and verified	Currently compliant Procedures are in place to monitor and document hazards associated with handling and transfer of waste. Further control measures such as inspection of waste by site manager prior to unloading provides an avenue for procedures to be validated and verified.
	Spill prevention, detection and mitigation measures	Currently compliant Staff trained in unloading of waste deliveries and all transfers of waste to be supervised by Site Managers. Tanks visually inspected daily by Site Manager to ensure continued integrity of tanks and identify any necessary remedial action. Spill Response Plan contained in the AMP.
	Take precautions when mixing or blending wastes	Currently compliant The Waste Reception procedure clearly states how ABP and non-ABP wastes are to be segregated when received on site. Any mixing of wastes occurs within the closed AD system.
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	Currently compliant A Hazard Analysis and Critical Control Points plan is in use which means critical control points are examined and assessed against their corresponding critical control limit. The AMP and Waste Reception procedure also consider risks and impacts.

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MONITORING		
6	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
	Waste water flow	Not applicable There are no waste water discharges to watercourses or sewers. Surface water from the ABP reception area is collected and transferred into the AD tanks.
	pH	As above
	Temperature	As above
	Conductivity	As above
	BOD	As above
	Other process parameters	As above
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	As above
	Final treatment inlet	As above
	Discharge point (to the environment)	As above
	Other location	As above
7	<u>Monitoring emissions to water (refer to table)</u> Monitoring parameters depend on waste treatment process(es) involved	Not applicable

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		There are no waste water discharges to watercourses or sewers. Surface water from the ABP reception area is collected and transferred into the AD tanks.
8	<u>Monitoring emissions to air (refer to table)</u> Monitoring parameters depend on waste treatment process(es) involved	Compliant in future Point source emissions to air from the activated carbon filtration outlet (for the blood storage tanks and ABP hopper) will need to be monitored once every six months in line with BAT 8 for: H ₂ S and NH ₃ . No requirement set for odour concentration monitoring as no odour nuisances are expected / have been substantiated for a number of years. Monitoring requirements in the permit have been updated.
9	Monitoring diffuse emissions of organic compounds to air from processes involving solvents. Use one or a combination of the following:	
	a	Measurement – S6.2 descriptions
	b	Emissions factor calculation
	c	Mass balance calculation
10	Periodically monitor odour emissions where nuisance is expected and/or has been substantiated (monitoring frequency is outlined in BAT 12)	
	Use EN standards e.g. 13725 or 16841	

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		Daily 'odour intensity' sniff test monitoring is undertaken and is sufficient as 'first line' monitoring. As odour issues have occurred in the past the OMP will need to be updated to include monitoring in line with the EN standards noted in BAT10 where an odour issue occurs and is substantiated by NRW. An improvement condition has been set IC3.
	Use equivalent methods e.g. ISO / national / international monitoring standards	Currently compliant Daily 'odour intensity' sniff test monitoring is undertaken in line with H4 Odour Management guidance which is considered sufficient unless an odour issue is identified which requires further investigation (see above).
11	Annual monitoring for:	
	- Water, energy and raw materials	Currently compliant Energy usage and water usage are recorded and reported annually as part of existing permit reporting requirements. Maintaining a record of raw materials used is also a requirement of the existing permit.
	- Generation of residues and waste water	Currently compliant Foul water is discharged via a sealed drainage system to a holding tank and used in the digestion process so will not require monitoring. Generation of waste residues are recorded on waste returns.

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EMISSIONS TO AIR		
12	Set up, implement and review an Odour Management Plan (as part of the site EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:	
	Protocol containing actions and timelines	Currently compliant An OMP is in place and contains a trigger points and contingency actions table together with investigative actions to be undertaken in the event of an odour complaint.
	Protocol for conducting odour monitoring (BAT 10)	Compliant in future The OMP contains provision for daily odour sniff test monitoring which is considered sufficient at this time as no odour nuisance is expected / been substantiated for a number of years. However, as odour issues have occurred in the past the OMP will need to be updated to include monitoring in line with the EN standards noted in BAT10 where an odour issue occurs and is substantiated by NRW. An improvement condition has been set – IC3.
	Protocol for response to odour incidents/complaints	Currently compliant The OMP contains protocols for responding to odour incidents/complaints.
	Odour prevention and reduction programme	Currently compliant Odour prevention and reduction controls and techniques are contained within the OMP and the AMP v4.

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13	Techniques to prevent, or where not practicable reduce odour emissions. Use one or a combination of the following:	
	a.	Minimising residence times (open systems only)
	b.	Use chemical treatment (N/A if desired output is hampered)
	c.	Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.
Currently compliant This is only applicable to open systems however the installation does minimise residence times of waste prior to treatment (see OMP).		
Currently compliant H ₂ S generated in the digesters will be reduced by injecting a small quantity of O ₂ into the gas storage. If levels are particularly high and O ₂ addition is not sufficient, ferric sulphate will be injected to the digester.		
Not applicable This technique relates to aerobic treatment of water-based liquid waste which is not undertaken at this facility.		
14	Techniques to prevent, or where not practicable reduce diffuse emissions to air, in particular of dust, organic compounds and odour. Use one or a combination of the following:	
	a.	Minimising potential diffuse emission sources – see examples
	b.	Select and use high-integrity equipment – see examples
Currently compliant The operator has indicated they use techniques: to minimise the residence times of waste in storage; that make provisions for seasonal peak volumes of waste and the use of wind barriers; and limit traffic speed.		
The operator has indicated that high integrity equipment such as: biocuts, CHP and storage tanks are in use for the plants processes though no detail is provided on the valves, seals, gaskets etc so it		

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			cannot be determined if this technique is in use. As BAT 14 requires ‘one or a combination of’ techniques a – h, BAT is still considered met through other techniques employed.
	c.	Corrosion prevention – see examples	Currently compliant The operator has stated that anti-corrosion material is used for storage containers.
	d.	Containment, collection and treatment of diffuse emissions – see examples	Currently compliant Odorous waste stored in storage tanks. Waste reception building kept under negative pressure. Carbon filters in use as an appropriate abatement system.
	e.	Dampening (with water or fog)	Currently compliant Dampening with water of site roadways is carried out as and when necessary.
	f.	Maintenance – see examples	Currently compliant Site checks including integrity of containment, bunds, drains, waste and digestate storage and machinery are undertaken and recorded.
	g.	Cleaning of waste treatment and storage areas – see examples	Currently compliant cleaning of reception areas after every load. Contaminated waste reception point separated from uncontaminated reception areas cleaning of storage areas, equipment and containers
	h.	Leak Detection And Repair (LDAR) programme for organics – S6.2	Storage, digester and pasteuriser tanks are located within bunded areas. Digesters fitted with leak detection (see V004 permit application). The digester tanks have leak detection chambers

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			which are checked daily. Engine room has alarmed gas detection system. However it is not clear that the description in the BREF is implemented. As BAT 14 requires ‘one or a combination of’ techniques a – h, BAT is still considered met through other techniques employed.
15	Use flaring only for safety reasons or non-routine operating conditions (OTNOC). Use <u>both</u> of the following:		
	a.	Correct plant design – see examples	Compliant in future The operator has stated that the plant design includes the provision of a gas recovery system with sufficient capacity and the use of high integrity relief vales. The V004 permit variation application notes the capacity of the flare is noted as approximately 400 m³/hr. It is noted from V006 that capacity at the site has increased and as such the capacity of the gas recovery system should be re-assessed to ensure it is still fit for purpose. An IC has been set – IC4.
	b.	Plant management including gas system balancing and advanced process control	Currently compliant The operator has indicated that the gas system is balanced and advanced process control is used.
16	Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:		
	a.	Correct design of flaring devices – see examples	Currently Compliant The operators response is not site specific however information in the V004 permit variation application notes: the flare stack height is 10m and diameter is 0.6m; that the flare is under full automatic control and has a continuously ignited pilot light; constructed of

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			stainless steel with motor control inlet valve, flame arrestors, automatic spark ignition and flame detection. This document also states the flare is a standard elevated flare with free visible flame and local electrical panel. The capacity of the flare is noted as approximately 400 m ³ /hr.
	b.	Monitoring and recording as part of flare management – see examples	Compliant in future The operator has stated that the quantity of gas sent to flaring is estimated and that the recording of flare events includes the duration and number of events and allows for the quantification of emissions and the potential prevention of future flaring events. The permit has been updated to provide for continuous monitoring of the quantity of gas sent to flare.
NOISE AND VIBRATIONS			
17	Set up, implement, and regularly review a Noise and Vibration Management Plan (as part of the EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:		
	i.	Protocol with actions and timelines	Not applicable The Environmental Management and Monitoring procedure notes that the location of the site, topography of the land and the fact that there are no nearby sensitive receptors (beyond the residential dwellings of the operator) in close proximity to the site mean that

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			noise is not considered to be a significant potential source of pollution to the environment. The operator has stated that generally, activities on site do not generate noise levels above acceptable limits and do not cause any issues. The engines are the main source of noise on site and are housed in containers. The permit requires emissions from the activities to be free from noise and vibration at levels likely to cause pollution outside the site and if the activities are giving rise to noise pollution outside the site, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration will be required.
	II.	Noise and vibration monitoring plan/protocol	As above
	III.	Noise & vibration complaint response plan/protocol	As above
	IV.	Noise and vibration reduction programme	As above
18	Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:		
	a.	Appropriate location of equipment and buildings	Not applicable Site is existing. The location of the site, topography of the land and the fact that there are no nearby sensitive receptors (beyond the residential dwellings of the operator) in close proximity to the site mean that noise is not considered to be a significant potential source of pollution to the environment.

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	b.	Operational measures – see examples
	c.	Low-noise equipment – see examples
	d.	Noise & vibration control equipment – see examples
	e.	Noise attenuation – see examples
Currently compliant The following procedures are in place to minimise noise emissions: All machinery is turned off when not in use; operation of plant and machinery takes place during permitted hours only; waste reception building doors are kept closed other than when access/egress for deliveries required; routine inspection and maintenance of pumps, flare and CHP engines.		
Not clear if implemented. As BAT 18 requires ‘one or a combination of’ techniques a – e, BAT is still considered met through other techniques employed.		
Currently compliant The operator has stated that all machinery on site is enclosed or fitted with effective silencers and that the CHP engines are enclosed within containers.		
This technique is not used. As BAT 18 requires ‘one or a combination of’ techniques a – e, BAT is still considered met through other techniques employed.		
EMISSIONS TO WATER		
19	Optimise water consumption, reduce waste water generation and prevent or where not practicable reduce emissions to soil and water. Use one or a combination of the following:	

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	a.	Water management – see examples	Compliant in future The operator has committed to adopt water saving plans and establish water efficiency objectives.
	b.	Water recirculation	Currently compliant Water streams are recirculated within the AD plant. Consideration is given to the characteristics of the water stream and the effect on the biology of the anaerobic digesters and the water balance of the plant.
	c.	Impermeable surface	Compliant in future The surface of the waste treatment areas (waste reception, handling, storage, treatment and dispatch areas) are impermeable. Further information is required on the engineering standard to which the surface complies and the engineering sign off. An improvement condition has been set – IC5.
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	Currently compliant The operator has stated that the following are in place: Overflow detectors; overflow pipes that are directed to a contained drainage system that is the relevant secondary containment or another vessel; tanks for liquids are located in a bund with a volume suitable to accommodate the loss of containment.
	e.	Roofing of waste storage and treatment areas	Currently compliant

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			The operator has stated that waste is stored and treated in covered areas to prevent contact with rainwater and thus minimise the volume of contaminated run off water.
	f.	Segregation of water streams (being mindful of existing plant constraints)	Currently compliant The operator has stated that each water stream is collected and treated separately. Uncontaminated water streams i.e. rain water is collected in a bunded area and discharged only after visual checks and routine checks have confirmed the suitability of release. Waste water streams require treatment (recirculated into the AD plant) hence are separated from uncontaminated waste water.
	g.	Adequate drainage infrastructure	Currently compliant The operator has stated that the waste treatment area is connected to drainage infrastructure. Rainwater falling on the treatment and storage areas is collected in the drainage infrastructure along with washing water, occasional spillages etc and depending on the pollutant content, recirculated or sent for further treatment off-site.
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	Currently compliant ABP blood and fluid storage tanks, pasteurisation tanks, digestate storage tanks and lubrication oil tanks situated above ground in bunds. Digesters installed on impermeable surface with leak detection system. The operator has stated that regular monitoring

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			for potential leakages is risk based and when necessary equipment is repaired.
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	Currently compliant The operator has stated that rain water collected in bunding is subject to visual checks, pH testing and NH ₃ monitoring carried out prior to discharge and that storage capacity is provided for waste water generated during other than normal operating conditions.
20	Treat waste water using a combination of:		
	Preliminary, primary and general treatment		
	a.	Equalisation	Not applicable Waste water is not discharged.
	b.	Neutralisation	As above
	c.	Physical separation	As above
	Physico-chemical treatment		
	d.	Adsorption	As above
	e.	Distillation/rectification	As above
	f.	Precipitation	As above
	g.	Chemical oxidation	As above
	h.	Chemical reduction	As above
	i.	Evaporation	As above
	j.	Ion exchange	As above
	k.	Stripping	As above

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	Biological treatment		
	l.	Activated sludge process	As above
	m.	Membrane bioreactor	As above
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	As above
	Solids removal		
	o.	Coagulation and flocculation	As above
	p.	Sedimentation	As above
	q.	Filtration (sand, micro, ultra)	As above
	r.	Flotation	As above
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l) <i>Table 6.1 and its supporting notes. Monitoring requirements are outlined in BAT 7</i>		
	TOC	10 -60 mg/l	Not applicable
		10-100 mg/l for water-based liquid waste	Waste water is not discharged.
	COD (TOC is preferred)	30-180 mg/l	As above
		30-300 mg/l for water-based liquid waste	
	Suspended solids	5.0-60 mg/l	As above

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	HOI	0.5-10 mg/l applying to specific waste treatments	As above
	Total N	1-25 mg/l for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	As above
	Total P	0.3-2 mg/l for biological treatment 1-3 mg/l for water-based liquid waste	As above
	Phenol	0.05-0.2 mg/l for waste oil re-refining and physio-chemical treatment of waste with CV 0.05-0.3 mg/l for water-based liquid waste	As above
	Free CN-	0.02-0.1 mg/l for water-based liquid waste	As above
	AOX	0.2-1 mg/l for water-based liquid waste	As above
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05 mg/l	As above
	Cd	0.01-0.05 mg/l	As above
	Cr	0.01-0.15 mg/l	As above
	Cu	0.05-0.5 mg/l	As above
	Pb	0.05-0.1 mg/l	As above
	Ni	0.05-0.5 mg/l	As above
	Hg	0.5-5 µg/l	As above
	Zn	0.1-1 mg/l	As above

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	Metals & Metalloids – treatment of water-based liquid waste	
	As 0.01-0.1 mg/l	As above
	Cd 0.01-0.1 mg/l	As above
	Cr 0.01-0.3 mg/l	As above
	Hexavalent Cr [Cr(VI)] 0.01-0.1 mg/l	As above
	Cu 0.05-0.5 mg/l	As above
	Pb 0.05-0.3 mg/l	As above
	Ni 0.05-1 mg/l	As above
	Hg 1.0-10 µg/l	As above
	Zn 0.1-2 mg/l	As above
	BAT-AELs for INDIRECT discharges to a receiving waterbody (mg/l)	
	<i>Table 6.2 and its supporting notes. Monitoring requirements are outlined in BAT 7</i>	
	HOI 0.5-10 mg/l applying to specific waste treatments	Not applicable Waste water is not discharged.
	Free CN- 0.02-0.1 mg/l for water-based liquid waste	As above
	AOX 0.2-1 mg/l for water-based liquid waste	As above
	Metals & Metalloids – specific waste treatments as listed in Table 6.2	

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	As	0.01-0.05 mg/l	As above
	Cd	0.01-0.05 mg/l	As above
	Cr	0.01-0.15 mg/l	As above
	Cu	0.05-0.5 mg/l	As above
	Pb	0.05-0.1 mg/l	As above
	Ni	0.05-0.5 mg/l	As above
	Hg	0.5-5 µg/l	As above
	Zn	0.1-1 mg/l	As above
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1 mg/l	As above
	Cd	0.01-0.1 mg/l	As above
	Cr	0.01-0.3 mg/l	As above
	Hexavalent Cr [Cr(VI)]	0.01-0.1 mg/l	As above
	Cu	0.05-0.5 mg/l	As above
	Pb	0.05-0.3 mg/l	As above
	Ni	0.05-1 mg/l	As above
	Hg	1.0-10 µg/l	As above

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Zn	0.1-2 mg/l	As above
EMISSIONS FROM ACCIDENTS AND INCIDENTS		
21	Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use ALL of the following:	
	a. Protection measures – see examples	Currently compliant The AMP outlines measures to protect the plant against fire, explosion, vandalism and extreme weather. The Process Control and Monitoring procedure notes the SCADA system used to control the plant is accessible 24 hours a day.
	b. Management of incidental or accidental emissions	Currently compliant AMP plan outlines procedures and technical provisions are in place to manage emissions from accidents and incidents such as emissions from spillages.
	c. Incident/accident registration and assessment system – see examples	Currently compliant The AMP contains the Incident Response Procedure which includes keeping a log of all accidents and incidents; changes to procedures and the findings of inspections; procedures to identify, respond to and learn from such incidents and accidents.
MATERIAL EFFICIENCY		

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22	Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders	Currently compliant There is limited applicability of this technique as limited raw materials are used; the majority of input to the treatment process being waste. The balance of the pH is achieved by consideration of pH in the waste feed, without the need for addition of external pH balancers. The permit contains an existing condition to review suitable alternative materials to improve the efficiency of raw materials every 4 years.
ENERGY EFFICIENCY		
23	Use energy efficiently by using <u>both</u> of the following techniques:	
	a.	Energy efficiency plan Compliant in future The operator has committed to adopt an energy efficiency plan for monitoring and analysing performance against indicators and an IC has been set – IC6.
	b.	Energy balance record Compliant in future The operator has indicated that energy balance records kept as part of permit requirements with information taken from SCADA system. This needs to be supplemented with energy flow

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REUSE OF PACKAGING		
24	Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)	Currently compliant The operator has stated that items such as pallets are reused on site. An IC has been set regarding provision of a Residues Management Plan.
MECHANICAL TREATMENT OF WASTE (GENERAL BAT)		
25	Reduce emissions to air of dust, particulate-bound metals, PCDD/F and dioxin-like PCBs by applying BAT 14d AND using one or a combination of the following techniques:	
	a.	Cyclone – see S6.1
	b.	Fabric filter – see S6.1
	c.	Wet scrubbing – see S6.1
	d.	Water injection into the shredder
	BAT-AEL for channelled dust emissions to air from the mechanical treatment of waste (mg/Nm³) Table 6.3 and its supporting note. Monitoring requirements are outlined in BAT 8	

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	Dust	2.0-5.0 mg/Nm ³	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
MECHANICAL TREATMENT OF METAL WASTE BY SHREDDING			
26	Improve overall environmental performance and prevent emissions due to accidents and incidents. Use BAT 14g <u>AND ALL</u> of the following techniques:		
	(a)	Detailed inspection procedure for baled waste before shredding	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	(b)	Remove dangerous items from waste inputs and dispose of them in a safe manner	As above
	(c)	Treatment of containers accompanied by a declaration of cleanliness	As above
27	Prevent deflagrations and reduce emissions from deflagrations. Use technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.		
	a.	Deflagration management plan with reduction programme, incident review and response protocol	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	b.	Pressure relief dampers	As above
	c.	Pre-shredding (device)	As above
28	Use energy efficiently by keeping the shredder feed stable		Not applicable

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			Only applies to mechanical treatment of waste when it is not combined with biological treatment.
MECHANICAL TREATMENT OF WEEE CONTAINING VFCS AND/OR VHCS			
29	Techniques to prevent, or where not practicable reduce emissions of organic compounds to air. Apply BAT 14d <u>AND</u> BAT14h <u>AND</u> technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.		
	a.	Optimised removal and capture of refrigerants and oils	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	b.	Cryogenic condensation	As above
	c.	Adsorption	As above
	BAT-AELs for channelled TVOC and CFC emissions to air from treatment of WEEE containing VFCS and/or VHCS (mg/Nm3) Table 6.4. Monitoring requirements are outlined in BAT 8		
	TVOC	3.0-15 mg/Nm ³	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	CFCs	0.5-10 mg/Nm ³	As above
30	Prevent emissions due to explosions when treating WEEE containing VFCS and/or VHCS. Use <u>EITHER</u> of the following techniques:		
	a.	Inert atmosphere e.g. N2	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
b.	Forced ventilation	As above
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE		
31	Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:	
	a. Adsorption – see S6.1	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	b. Biofilter – see S6.1	As above
	c. Thermal oxidation – see S6.1	As above
	d. Wet scrubbing – see S6.1	As above
	BAT-AEL for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value (mg/Nm³) Table 6.5 and its supporting note. Monitoring requirements are outlined in BAT 8	
	TVOC 10.0-30.0 mg/Nm ³	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
MECHANICAL TREATMENT OF WEEE CONTAINING MERCURY		
32	Reduce mercury emissions to air by collecting them at source, sending them to abatement and carrying out adequate monitoring. This includes <u>ALL</u> of the following:	

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	Equipment is enclosed, under negative pressure and connected to a LEV system	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon	As above
	Monitoring of waste gas treatment efficiency	As above
	Mercury levels measured at least weekly within treatment and storage areas	As above
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm³) <i>Table 6.6. Monitoring requirements are outlined in BAT 8</i>	
	Hg 2.0-7.0 µg/Nm ³	Not applicable Only applies to mechanical treatment of waste when it is not combined with biological treatment.
BIOLOGICAL TREATMENT OF WASTE (GENERAL BAT)		
33	Reduce odour emissions and improve overall environmental performance by selecting the waste input (to ensure its suitability for biological treatment). See also BAT 2	Compliant in future The operator has not provided a response to this BAT. An improvement condition has been set – IC7.
34	Reduce emissions to air of dust, organic compounds and odorous compounds (including H₂S & NH₃) by using one or a combination of the following techniques:	
	a. Adsorption – see S6.1	Currently compliant

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
		Activated carbon filter in use to remove odorous gases.
	b.	Biofilter – see S6.1
	c.	Fabric filter – see S6.1.
	d.	Thermal oxidation – see S6.1
	e.	Wet scrubbing – see S6.1
	<i>BAT-AEL for channelled NH₃, odour, dust and TVOC emissions to air from the biological treatment of waste (mg/Nm³) (ou_E/m³)</i> <i>Table 6.7 and its supporting notes. Monitoring requirements are outlined in BAT 8</i>	
	NH ₃	0.3-20 mg/Nm ³
	Odour	200-1000 OU _E /Nm ³
Compliant in future The operator has indicated that they will install systems and procedures for ammonia measurement and monitoring for ammonia has been added to the permit.		Not applicable Daily 'odour intensity' sniff test monitoring is undertaken. The operator has indicated a preference for ammonia monitoring. In

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			line with BAT 10 comments, should odour become a problem in the future then it will need to be monitored in addition to ammonia.
	Dust	2.0-5.0 mg/Nm ³	Not applicable BAT-AEL relates to mechanical biological treatment of waste.
	TVOC	5.0-40 mg/Nm ³	Not applicable BAT-AEL relates to mechanical biological treatment of waste.
35	Reduce the generation of waste water and reduce water usage by using ALL of the following:		
	a.	Segregation of water streams (see also BAT 19f)	Currently compliant The operator has stated against BAT 19 that each water stream is collected and treated separately: Uncontaminated rain water is collected in a bunded area discharged; and waste water requiring treatment is recirculated into the AD plant. There is no leachate seepage.
	b.	Water recirculation	Currently compliant Water streams collected from the ABP reception areas are recirculated within the AD plant. Consideration is given to the characteristics of the water stream and the effect on the biology of the anaerobic digesters and the water balance of the plant. Liquor from digestate is separated and certified under the Biofertiliser Certification Scheme for use as a fertiliser.
	c.	Minimisation of the generation of leachate	Not applicable The nature of the treatment is wet anaerobic treatment. The waste storage and treatment is enclosed and therefore rainwater does

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
			not further saturate the waste. Separated digestate liquor from the process, having been pasteurised, is used as a biofertiliser and therefore has a beneficial use.
BIOLOGICAL TREATMENT OF WASTE: AEROBIC METHODS			
36	Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:		
	Waste input characteristics e.g. C to N ratio, particle size		Not applicable The installation does not undertake aerobic treatment of waste.
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		As above
	Aeration of the windrow		As above
	Windrow porosity, height and width		As above
37	Reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps. Use <u>ONE OR BOTH</u> of the following techniques:		
	a.	Use of semi-permeable membrane covers	Not applicable The installation does not undertake aerobic treatment of waste. No bioaerosols.
	b.	Adaptation of operations to the meteorological conditions	As above

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
BIOLOGICAL TREATMENT OF WASTE: ANAEROBIC METHODS		
38	Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:	
	<i>Implement a manual and/or automatic monitoring system to:</i>	
	Ensure a stable digester operation	Currently compliant The digesters are equipped with high-level temperature and gas pressure monitors, which are automatic and continuous and linked to the control system, together with an alarm system. The Process Control and Monitoring procedure states the SCADA system collects and monitors data such as temperature, levels, loads pasteurised etc and lists other manual monitoring undertaken to ensure stable digester operation.
	Minimise operational difficulties, such as foaming, which may lead to odour emissions	Currently compliant The Process Control and Monitoring procedure states daily visual checks are undertaken to check for foaming and instructs operators to reduce feeding and identify any feedstock issues should foaming occur. An OMP is in place to prevent / reduce odour emissions and the Odour Policy sets out clear objectives to minimise operational difficulties which may lead to odour emissions.

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	Provide sufficient early warning of system failures which may lead to a loss of containment and explosions	Currently compliant The Infrastructure Management Monitoring procedure contains details of the site check lists to detect signs of obvious damage/wear and tear. An integrated maintenance record is kept and tracked to ensure all machinery and systems are serviced routinely. The Process Control and Monitoring procedure notes the use of gas pressure monitors on the digesters which are linked to the control room display and that SCADA collects and monitors data such as temperatures, levels and loads pasteurised with alarms set to alert the site managers with any issues with running the plant. The AMP notes the use of pressure alarms and high-level alarms.
	<i>Monitoring and/or control of key waste and process parameters – examples below:</i>	
	pH and alkalinity of the digester feed	Currently compliant The operator has stated that total Alkalinity, pH and other determinants test analysis is carried out on all new feedstocks which forms part of the Waste Pre-Acceptance Procedure SOP- GP-E01. An improvement condition has been set for the operator to submit a methodology to 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.

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	Digester operating temperature	Currently compliant The operator has stated that the digester tanks are fitted with temperature transmitters and alarms which are monitored by the Supervisory Control and Data Acquisition unit (SCADA). The digester temperature is constantly recorded by the computer control system. Process Control and Monitoring (SOP- GP-E07). As above an improvement condition has been set.
	Hydraulic and organic loading rates of the digester feed	Currently compliant The operator has stated that monitoring of hydraulic and organic loading rate is determined by type of feedstocks and is tracked by the Anaerobic Digestion Process Data spreadsheet. The Process Control and Monitoring (SOP- GP-E07) procedure notes hydraulic loading and organic loading rate in the monitoring table (NB hydraulic loading does not have any detail such as method or frequency of monitoring). As above an improvement condition has been set.
	Volatile fatty acids and NH ₃ concentrations within digester & digestate	Currently compliant Operator has stated that monitoring of volatile fatty acids and NH ₃ concentrations within digester and digestate are carried out in line with PAS110 and APHA requirements and that other stability tests such as residual biogas potential are also done. Test are carried out on every 6000m ³ digestate produced or every 3 months – whichever is soonest. Process Control and Monitoring (SOP-GP- E07). As above an improvement condition has been set.
	Biogas quantity, composition (e.g. H ₂ S) and pressure	Currently compliant

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
		The operator has stated that biogas quantity, composition and pressure are constantly monitored and recorded by the computer control system (SCADA) and the site Manager is alerted if there are any variations in the concentrations of these parameters. As above an improvement condition has been set.
	Liquid and foam levels in the digester	Currently compliant The operator has indicated that site monitoring checks are carried out at least twice daily and includes checks on liquid levels and foam levels. As above an improvement condition has been set.
MECHANICAL BIOLOGICAL TREATMENT (MBT) OF WASTE		
39	Reduce emissions to air. Generally applicable to new plants, existing plants may have layout constraints. Use BOTH of the following techniques:	
	a. Segregation of the waste gas streams (refer to inventory described in BAT 3)	Not applicable Mechanical biological treatment of waste is not undertaken.
	b. Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	As above
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE		
40	Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.	

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
41	Monitoring the waste input	
	Content of organics, oxidising agents, metals, salts, odorous compounds	Not applicable Physico-chemical treatment of solid or pasty waste is not undertaken.
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water	As above
	Reduce emissions to air of dust, organic compounds and NH3 by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:	
	a. Adsorption – see S6.1	Not applicable Physico-chemical treatment of solid or pasty waste is not undertaken.
	b. Biofilter – see S6.1	As above
	c. Fabric filter – see S6.1.	As above
	d. Wet scrubbing – see S6.1	As above
BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the physico-chemical treatment of solid and/or pasty waste (mg/Nm3) <i>Table 6.8. Monitoring requirements are outlined in BAT 8</i>		
	Dust 2.0-5.0 mg/Nm ³	Not applicable Physico-chemical treatment of solid or pasty waste is not undertaken.
RE-REFINING OF WASTE OIL		

BATc number		Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
42	Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.			
	Monitoring the waste input			
	Chlorinated compounds e.g. solvents or PCBs		Not applicable Re-refining of waste oil is not undertaken.	
43	Reduce quantity of waste sent for disposal by using ONE OR BOTH of the following techniques:			
	a.	Material recovery e.g. organic residues in asphalt products	Not applicable Re-refining of waste oil is not undertaken.	
	b.	Energy recovery	As above	
44	Reduce emissions to air of organic compounds by applying BAT 14d AND using one or a combination of the following techniques:			
	a.	Adsorption – see S6.1	Not applicable Re-refining of waste oil is not undertaken.	
	b.	Thermal oxidation – see S6.1	As above	
	c.	Wet scrubbing – see S6.1	As above	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. Monitoring requirements are outlined in BAT 8			
PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CALORIFIC VALUE				
45	Reduce emissions to air of organic compounds by applying BAT 14d AND using one or a combination of the following techniques:			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	a.	Adsorption – see S6.1	Not applicable Physico-chemical treatment of waste with calorific value is not undertaken.
	b.	Cryogenic condensation – see S6.1	As above
	c.	Thermal oxidation – see S6.1	As above
	d.	Wet scrubbing – see S6.1	As above
	<i>The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies.</i> <i>Monitoring requirements are outlined in BAT 8</i>		
REGENERATION OF SPENT SOLVENTS			
46	Improve overall environmental performance by using ONE OR BOTH of the following techniques:		
	a.	Material recovery (by evaporation from distillation residues)	Not applicable Regeneration of spent solvents is not undertaken.
	b.	Energy recovery e.g. using distillation residues	As above
47	Reduce emissions to air of organic compounds by applying BAT 14d AND using a combination of the following techniques:		
	a.	Recirculation of process off-gases in a steam boiler. Avoid generating PCBs and/or PCDD/Fs	Not applicable Regeneration of spent solvents is not undertaken.
	b.	Adsorption – see S6.1	As above
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	d.	Condensation or cryogenic condensation	As above
	e.	Wet scrubbing – see S6.1	As above
<i>The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies.</i> <i>Monitoring requirements are outlined in BAT 8</i>			
BAT-AEL FOR EMISSIONS OF ORGANIC COMPOUNDS TO AIR – SECTION 4.5 (RE-REFINING OF WASTE OIL) (PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CV) (REGENERATION OF SPENT SOLVENTS)			
	<i>BAT-AEL for channelled TVOC emissions to air from the re-refining of waste oil, physico-chemical treatment of waste with calorific value and regeneration of spent solvents (mg/Nm3)</i> <i>Table 6.9 and its supporting note. Monitoring requirements are outlined in BAT 8</i>		
	TVOC	5.0-30	Not applicable Re-refining of waste oil, physico-chemical treatment of waste with calorific value or regeneration of spent solvents are not undertaken.
THERMAL TREATMENT OF SPENT ACTIVATED CARBON, WASTE CATALYSTS AND EXCAVATED CONTAMINATED SOIL			
48	Improve overall environmental performance by using ALL of the following techniques:		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	a.	Heat recovery from the furnace off-gas e.g. for preheating combustion air or steam generation	Not applicable Thermal treatment of spent activated carbon, waste catalysts or excavated contaminated soil are not undertaken.
	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	As above
	c.	Process-integrated techniques to reduce emissions to air – see examples	As above
49	Reduce emissions to air of HCl, HF, dust and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:		
	a.	Cyclone – see S6.1	Not applicable Thermal treatment of spent activated carbon, waste catalysts or excavated contaminated soil are not undertaken.
	b.	Electrostatic precipitator (ESP) – see S6.1	As above
	c.	Fabric filter – see S6.1	As above
	d.	Wet scrubbing – see S6.1	As above
	e.	Adsorption – see S6.1	As above
	f.	Condensation – see S6.1	As above
	g.	Thermal oxidation – see S6.1	As above
Note supporting text for BAT 49g (thermal oxidation) Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.			

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
WATER WASHING OF EXCAVATED CONTAMINATED SOIL			
50	Reduce emissions to air of dust and organic compounds from the storage, handling and washing steps by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:		
	a.	Adsorption – see S6.1	Not applicable Water washing of excavated contaminated soil is not undertaken.
	b.	Fabric filter – see S6.1	As above
	c.	Wet scrubbing – see S6.1	As above
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
DECONTAMINATION OF EQUIPMENT CONTAINING PCBS			
51	Reduce emissions to air of PCBs and organic compounds and improve overall environmental performance by using <u>ALL</u> of the following techniques:		
	a.	Coating of the storage and treatment areas – see examples	Not applicable Decontamination of equipment containing PCBs is not undertaken.
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	As above
	c.	Optimised equipment cleaning and drainage – see examples	As above
	d.	Control and monitoring of emission to air – see examples	As above
	e.	Disposal of waste treatment residues – see examples	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	f.	Recovery of solvent when solvent washing is used	As above
Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.			
TREATMENT OF WATER-BASED LIQUID WASTE			
52	Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.		
	Monitoring the waste input		
	Bioeliminability e.g. BOD, BOD-COD ratio, Zahn-Wellens test, biological inhibition potential		Not applicable Treatment of water-based liquid waste is not undertaken.
	Feasibility of emulsion breaking e.g. lab testing		As above
53	Reduce emissions to air of HCl, NH3 and organic compounds by applying BAT 14d AND using one or a combination of the following techniques:		
	a.	Adsorption – see S6.1	Not applicable Treatment of water-based liquid waste is not undertaken.
	b.	Biofilter – see S6.1	As above
	c.	Thermal oxidation – see S6.1.	As above
	d.	Wet scrubbing – see S6.1	As above
	BAT-AELs for channelled HCl and TVOC emissions to air from the treatment of water-based liquid waste (mg/Nm3) Table 6.10 and its supporting notes. Monitoring requirements are outlined in BAT 8		
	HCl	1.0-5.0 mg/Nm ³	Not applicable Treatment of water-based liquid waste is not undertaken.

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant <i>{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}</i>
	TVOC 3.0-20 mg/Nm ³	As above

Annex 2: Consultation on the draft decision where an Article 15(4) derogation has been applied

No derogation applied for.