Natural Resources Wales permitting decisions

Variation and consolidation of a bespoke permit – Margam Green Energy Limited

We have decided to issue a Natural Resources Wales initiated variation and consolidated permit for Margam Green Energy Plant in Margam operated by Margam Green Energy Limited.

The permit number is EPR/DP3137EG. The variation number is EPR/DP3137EG/V004.

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 Document (BREF) for Waste Incineration. The associated BAT conclusions to this document were published on 3 December 2019 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 Incineration sector. These include the amendment of the wording of several permit conditions including 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 3 December 2023.

The opportunity has been taken to consolidate the original permit and subsequent variations. The rest of the installation is unchanged and continues to be operated as stated in the permit.

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 the installation against the published BAT conclusions for Waste Incineration
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions for Waste Incineration.
- Annex 2 – Decision Checklist regarding additional information requested in Regulation 61(1) Notice

Assessment of the installation against the published BAT conclusions for Waste Incineration

1. Our decision

We have issued a variation, which will allow the Operator 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 this and any 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 BAT and BAT-Associated Emission Levels (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 20/11/2014 and any subsequent variations, ensured that the installation, employed 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 has not yet demonstrated compliance with BAT, Improvement Conditions have been included to ensure compliance with the latest BAT standards by 3 December 2023.

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);
- an operation covered by the Waste Framework Directive;
- Includes a medium combustion plant and excluded specified generator covered by EPR Schedule 25A and 25B

- subject to aspects of other legislation including the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 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 EPR on 15 June2021 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will meet by the compliance date of 3 December 2023, the revised standards described in the relevant BAT Conclusions document.

The Regulation 61(1) Notice required the operator to undertake the following actions, where relevant:

1. Confirm whether or not they currently comply with the requirements of the BAT Conclusion, including any associated emission levels, providing a description of the techniques in place and how they meet the standard
2. If they do not comply with the BAT conclusion, describe how and by when they intend to meet the standard, before the compliance date
3. Confirm if they intend to continue operating in a manner which would not comply with the relevant new BAT Conclusion after the compliance date, if so, provide a justification for being allowed to do so and by what date they intend to come into full compliance, or a description of alternative measures to be adopted that will provide equivalent environmental protection
4. Where the BAT conclusion has a BAT-AEL specified, with which they will not comply with by the compliance date, requirement that the operator should consider requesting a derogation. The notice also explained the strict criteria under which a derogation application may be considered and made clear that any application is the responsibility of the operator.

The following additional information was also required:

A. Where compliance with the BAT conclusions leads to the substantial refurbishment or installation of a new industrial installation with an aggregate thermal input of greater that 20 MWth, which generated more than 100 KWth of waste heat, the Operator must provide sufficient technical and commercial evidence to demonstrate compliance with Article 14, paragraph 5 of directive 2012/27/EU on Energy Efficiency.
B. For all discharges to surface water and/or sewers from the site, the Operator must provide information for priority hazardous substances and any other relevant substances.

C. Where their permitted activity involves the use, production or release of a relevant hazardous substances (as defined in Article 3(18) of the IED) the Operator was required to carry out a risk assessment considering the possibility of soil and groundwater contamination at the permitted installation with such substances.
D. Provide us with details of fixed combustion plant from 1 MWth up to but not including 50 MWth.
E. Provide an updated completed OPRA spreadsheet for the facility.

The Regulation 61(1) Notice response from the operator was received on 13/12/2021 and additional information received on 31/03/2021 and 09/09/2022. A detailed response was received from the Operator. Following assessment of the Regulation 61(1) response, further information was requested from the Operator. Where the operator has concluded that they have achieved BAT, and we are in agreement, no further information or justification has been sought by Natural Resources Wales.

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 response

BAT Conclusions for Waste Incineration were published as Commission Implementing Decision EU 2019/2010/EU in the Official Journal of the EU on 3 December 2019. There are 37 BAT Conclusions. Annex 1 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. Annex 2 provides a record of decisions made in relation to each of the five additional requested items (A – E as above).

The main changes introduced by the latest BAT conclusions include:

- Introduction of new, more stringent BAT-Associated Emission Limits (AELS) for certain substances, as detailed below
- Enhanced monitoring requirements for certain emissions
- Further enhancements to required management systems and processes, for example the requirement for every site for an OTNOC (other than normal operating conditions) management plan.

Other IED BREFs relevant to the permit review

There are no other specific listed activities within Table S1.1 of the permit. The main listed activity combusts IED Article 3(31(b) biomass waste within a co-incinerator and has a net thermal input of 50 MW or more, which may make it within the scope of the BAT Conclusions for Large Combustion Plant (LCP). NRW has considered the scope of the LCP BAT Conclusions and the corresponding interpretation document and are satisfied that the plant is not in scope of the LCP BAT Conclusions.

5. Changes we have made

Improvement Conditions

Based on the information provided in the Regulation 61(1) response, we consider that we do not 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 2023.

IC9	The operator shall perform a study to determine the extent to which the operation of the current systems in place at the plant to minimise NOx emissions can be further optimised such that emissions are reduced as far as possible below 270 mg/Nm^3 as a daily average, without significantly increasing emissions of other pollutants or having a significant negative effect on plant operation, reliability or bottom ash quality. The study shall be based on the results of trials carried out at the installation. A written report of the study shall be submitted to Natural Resources Wales which shall include but not necessarily be limited to the following: • A brief description of the currently installed measures at the installation to minimise NOx emissions, including details of how the reagent dosing system responds to emissions monitoring data and historic data which illustrates the current achievable level of daily NOx emissions. • The results of trials conducted to further reduce daily average NOx emissions using currently installed measures, including: ○ a description of the parameters that were varied during the trial e.g. ammonia or urea feed rates, physical form of urea injected, air flows, and the range over which they were varied ○ the levels of NOx achieved and associated levels of ammonia and nitrous oxide emissions and reagent consumption ○ observed effects and predicted long-term impacts on plant operation, reliability and maintenance regime ○ any changes to the composition of the bottom ash and boiler ash and the implications of those changes for the ability to process and use the ash, as well as for the pollution potential of the ash both during processing and its subsequent use as a secondary aggregate ○ any other relevant cross-media effects The report shall also include a description of the extent to which current systems in place at the plant to minimise NOx emissions can be optimised on a permanent basis, including justification and an implementation plan where relevant.	30/09/2023 or as agreed in writing with Natural Resources Wales
IC10	The operator shall carry out a programme of dioxin monitoring over a period and frequency agreed with Natural Resources Wales. The operator shall submit a report to Natural Resources Wales with an analysis of whether dioxin emissions can be considered to be stable.	30/09/2023 or as agreed in writing with Natural Resources Wales
IC11	The operator shall carry out a programme of mercury monitoring over a period and frequency agreed with Natural Resources Wales. The operator shall submit a report to Natural Resources Wales with an analysis of whether the waste feed to the plant can be proven to have a low and stable mercury content.	30/09/23 or as agreed in writing with Natural

		Resources Wales
IC12	The operator shall submit an Other than normal operating conditions (OTNOC) management plan to Natural Resources Wales for approval. The OTNOC management plan shall be produced in line with all relevant current guidance provided by Natural Resources Wales to the operator and shall consider the requirements of the following BAT conclusions of the Waste Incineration BREF Document (EU 2019): • BAT 1 (xxiv) – BAT is also to incorporate the following features in the EMS: o (xxiv) for incineration plants, an OTNOC management plan (see BAT 18) • BAT 5 – BAT is to appropriately monitor channelled emissions to air from the incineration plant during OTNOC • BAT 18 – In order to reduce the frequency of the occurrence of OTNOC and to reduce emissions to air and, where relevant, to water from the incineration plant during OTNOC, BAT is to set up and implement a risk based OTNOC management plan as part of the environmental management system (BAT 1) that includes all of the following elements: o Identification of potential OTNOC (e.g. failure of equipment critical to the protection of the environment ('critical equipment')), of their root causes and of their potential consequences, and regular review and update of the list of identified OTNOC following the periodic assessment below; o Appropriate design of critical equipment (e.g. compartmentalisation of the bag filter, techniques to heat up the flue-gas and obviate the need to bypass the bag filter during start-up and shutdown, etc.); o Set-up and implementation of preventative maintenance plan for critical equipment (see BAT 1(xii)) o Monitoring and recording of emissions during OTNOC and associated circumstances (see BAT 5) o Periodic assessment of the emissions during OTNOC (e.g. frequency of events, duration, amount of pollutants emitted) and implementation of corrective actions if necessary. The OTNOC management plan shall be submitted to Natural Resources Wales for approval by the date specified.	03/06/23 or as agreed in writing with Natural Resources Wales

IC9 has been included as per the UK WI BATC interpretation document, which states an IC is to be included in permits requiring Operators to optimise their de-NOx systems.

IC10 and IC11 have been included as currently the Operator is unable to satisfy the data requirements of the WI BREF dioxin and mercury monitoring protocols.

IC12 has been included as the Operator currently does not have an NRW approved OTNOC management plan in place. We will assess compliance with the relevant BATc requirements via an Improvement Condition.

Other changes

Changes to permit conditions

The permit has been consolidated which means it has taken account of all previous variations and been issued in line with our modern permit template. Therefore, there will have been changes to the permit conditions due to the consolidation. Where we

have added specific conditions these are discussed below. We have not detailed any existing conditions that have been amended due to the review of our permit template.

Medium Combustion Plant (MCP)

The Operator confirmed they have an existing MCP at the site, therefore we have added and post-dated all relevant conditions to the permit as required by Schedule 25A of EPR. We have conducted early permitting of the existing MCP, this means we have post-dated any MCP conditions in the permit to prevent the need for a future variation to the permit when the relevant MCP compliance date is reached. We have amended the site plan in the permit to include the emission point from the MCP, we consider the omission of the emission point an administrative error when the initial permit was issued as the generator was included in the permit as a directly associated activity (DAA).

Circular economy conditions

We have added the following conditions to the permit. These conditions have been added to ensure compliance with the Waste (England and Wales) Regulations 2011:

2.3.4 Waste paper, metal, plastic or glass that has been separately collected for the purpose of preparing for re-use or recycling shall not be accepted. Waste from the treatment of these separately collected wastes shall only be accepted if incineration delivers the best environmental outcome in accordance with regulation 12 of the Waste (England and Wales) Regulations 2011.

2.3.5 Separately collected fractions other than those listed in condition 2.3.4 shall not be accepted unless they are unsuitable for recovery by recycling.

Monitoring of N_2O, flow and CO_2

We have added the monitoring of N_2O, volumetric flow and CO_2 into Table S3.1 from the BREF compliance date (3 December 2023). We have implemented this to improve the quality of the data supply for UK Pollutant Release and Transfer Register (PRTR) reporting. This monitoring is already being completed on a voluntary basis at sites and now becomes part of the permit requirements.

Emissions to Air

There were changes to the ELVs for emissions to air taking into account BAT Conclusions 25 to 31.

The tables below outline the changes to the ELVs. As the plant is a co-incinerator the ELVs are stated at 6 % oxygen content. BAT-AELs in the BREF are stated in 11 % oxygen content therefore they have been converted into 6 % oxygen. Where there are no changes to ELVs for certain parameters they are not included in the table below.

Release point	Parameter	Reference period	Limit (effective until 2 December 2023)	Limit / BAT-AEL (effective from 3 December 2023)
A1	Particulate matter	daily average	15 mg/m^3	7.5 mg/m^3
	Hydrogen chloride	daily average	15 mg/m^3	12 mg/m^3
	Sulphur dioxide	daily average	75 mg/m^3	60 mg/m^3
	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	daily average	300 mg/m^3	270 mg/m^3

	Cadmium and thallium (and their compounds)	periodic	0.05 mg/m^3	0.03 mg/m^3
	Mercury and its compounds	periodic	0.05 mg/m^3	0.03 mg/m^3
		daily average	No limit currently set	0.03 mg/m^3
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and their compounds	periodic	0.5 mg/m^3	0.45 mg/m^3
	Ammonia	Daily average	No limit currently set	22.5 mg/m^3
	Dioxins / furans (I-TEQ)	periodic	0.1 ng/m^3	0.09 ng/m^3
		Long-term sampling	No limit currently set	0.12 ng/m^3

Where BAT-AELs are identified, 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, in which case these are retained to ensure no backsliding of emission limits.

Emissions to Air – Article 15(4) Derogations
No derogations.

Emissions to water
The installation has the following discharges to surface water:

- Direct emission of uncontaminated surface water via balancing pond
- Indirect emission of boiler blow down to foul sewer in accordance with Trade Effluent Consent issued by the sewerage undertaker

A direct emission is an emission to a receiving water body without further downstream waste water treatment. An indirect emission is one that is not a direct emission.

As detailed above, there are no direct or indirect emissions to a receiving water body from the following processes:

- Flue-gas cleaning (FGC)
- Bottom ash treatment

As per BATc 33, BAT-AELs apply to direct and indirect emissions from FGC and/or bottom ash treatment. Therefore BATc 33 and the BAT-AELs do not apply, therefore there are no changes to any current ELVs.

6. Conclusion

We consider that the installation already employed what used to be BAT, and that the operator will achieve significant improvements in performance by the compliance date since the permit was originally granted. The revised BREF and its BAT-AELs provide the opportunity to implement 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 3 December 2023.

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 for Waste Incineration

BAT Conclusions for Waste Incineration were published as Commission Implementing Decision EU 2019/2010/EU in the Official Journal of the EU on 3 December 2019. There are 37 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 permit. For definitions and acronyms see the BAT Conclusions Document: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN

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
1	**Environmental management systems (EMS) –** In order to improve the overall environmental performance, BAT is to elaborate and implement an environmental management system (EMS) that incorporates all of the following features:		
	(i)	Commitment, leadership and accountability of the management, including senior management, for the implementation of an effective EMS;	Compliant in the future The Operator has indicated they are planning to gain external accreditation of their EMS to ISO14001:2015 standard in December 2022. The Operator has completed a gap analysis of the BREF to ensure the EMS contains all the BATc requirements. We consider gaining accreditation is sufficient of demonstrating compliance with the BATc.
	(ii)	An analysis that includes the determination of the organisation's context, the identification of the needs and expectations of interested parties, the identification of characteristics of the installation that are associated with possible risks for the environment (or human health) as well as of the applicable legal requirements relating to the environment;	
	(iii)	Development of an environmental policy that includes the continuous improvement of the environmental performance of the installation;	
	(iv)	establishing objectives and performance indicators in relation to significant environmental aspects, including safeguarding compliance with applicable legal requirements;	
	(v)	Planning and implementing the necessary procedures and actions (including corrective and preventive actions where needed), to achieve the environmental objectives and avoid environmental risks;	
	(vi)	Determination of structures, roles and responsibilities in relation to environmental aspects and objectives and provision of the financial and human resources needed;	
	(vii)	Ensuring the necessary competence and awareness of staff whose work may affect the environmental performance of the installation (e.g. by providing information and training);	
	(viii)	Internal and external communication;	
	(ix)	Fostering employee involvement in good environmental management practices;	

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
	(x)	Establishing and maintaining a management manual and written procedures to control activities with significant environmental impact as well as relevant records;	
	(xi)	Effective operational planning and process control;	
	(xii)	Implementation of appropriate maintenance programmes;	
	(xiii)	Emergency preparedness and response protocols, including the prevention and/or mitigation of the adverse (environmental) impacts of emergency situations;	
	(xiv)	When (re)designing a (new) installation or a part thereof, consideration of its environmental impacts throughout its life, which includes construction, maintenance, operation and decommissioning;	
	(xv)	Implementation of a monitoring and measurement programme, if necessary, information can be found in the Reference Report on Monitoring of Emissions to Air and Water from IED Installations;	
	(xvi)	Application of sectoral benchmarking on a regular basis;	
	(xvii)	Periodic independent (as far as practicable) internal auditing and periodic independent external auditing in order to assess the environmental performance and to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;	
	(xviii)	Evaluation of causes of nonconformities, implementation of corrective actions in response to nonconformities, review of the effectiveness of corrective actions, and determination of whether similar nonconformities exist or could potentially occur;	
	(xix)	Periodic review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;	
	(xx)	Following and taking into account the development of cleaner techniques.	
	Specifically for incineration plants and where relevant, bottom ash treatment plants, BAT is to also incorporate the following features in the EMS:		
	(xxi)	For incineration plants, waste stream management (see BAT 9);	See BAT 9
	(xxii)	For bottom ash treatment plants, output quality management (see BAT 10);	Not Applicable
	(xxiii)	A residues management plan including measures aimed to: (a) Minimise the generation of residues	Compliant in the future The Operator has confirmed a residues management plan incorporating the 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
		(b) Optimise the reuse, regeneration, recycling of and/or energy recovery from the residues (c) Ensure the proper disposal of residues		requirements will be in place by the compliance date.
	(xxiv)	For incineration plants, an OTNOC management plan (see BAT 18);		See BAT 18
	(xxv)	For incineration plants, an accident management plant;		Compliant in the future The Operator has confirmed an accident management plan is in place at the facility, however this plan is to be updated to ensure it incorporates the BATc requirements by the compliance date.
	(xxvi)	For bottom ash treatment plants, diffuse dust emissions management (see BAT 23);		Not Applicable
	(xxvii)	An odour management plan where an odour nuisance at sensitive receptors is expected and/or has been substantiated;		Not Applicable Odour nuisance not expected nor been substantiated.
	(xviii)	A noise management plan (see BAT 37) where a noise nuisance at sensitive receptors is expected and/or has been substantiated;		Not Applicable Noise nuisance not expected nor been substantiated.
MONITORING				
2	**BAT is to determine either the gross electrical efficiency, the gross energy efficiency, or the boiler efficiency of the incineration plant as a whole or of all the relevant parts of the incineration plant.**			Currently compliant The Operator has determined the gross electrical efficiency in 2020 as 34.3 %.
3	**BAT is to monitor key process parameters relevant for emissions to air and water including those given below:**			Currently Compliant The Operator currently monitors all the flue-gas and combustion chamber requirements, these will be implemented in the permit from the compliance date. There is no wet FGC in place nor bottom ash treatment plant on site therefore the
	Stream/location	**Parameter(s)**	**Monitoring**	
	Flue-gas from the incineration of waste	Flow, oxygen content, temperature, pressure, water vapour content	Continuous	
	Combustion chamber	Temperature		

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
	Waste water from wet FGC	Flow, pH, temperature		monitoring requirements are not applicable.
	Waste water from bottom ash treatment plants	Flow, pH, conductivity		
4	**BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quantity.**			
	Refer to monitoring emissions to air table in BAT Conclusion 4: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN			Compliant in the future Monitoring requirements of the BATc to be implemented in the permit from the compliance date, and in many cases is already implemented in the existing permit. **HF** The Operator has not made an argument for periodic monitoring, therefore continuous monitoring will continue to be set in the permit from the compliance date. **Dioxins/furans** Th operator is currently unable to satisfy the UK dioxin sampling protocol to demonstrate the dioxin content is sufficiently stable, therefore an Improvement Condition will be set in the permit. They have indicated they wish to retain periodic monitoring as opposed to long-term sampling although this is subject to satisfaction of the protocol. (IC10) **Mercury**

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
		The operator is currently unable to satisfy the data requirements of the UK mercury sampling protocol to demonstrate the mercury content is low and stable, the Operator has confirmed further monitoring is required and will be completed by 30 September 2023, therefore an Improvement Condition will be set in the permit. They have indicated they wish to retain periodic monitoring as opposed to continuous although this is subject to satisfaction of the protocol. (IC11) **Brominated dioxins/furans** The UK WI BREF Interpretation Document states PBDD/F monitoring will be required if a plant is taking waste streams that are known to contain materials treated with brominated flame retardants. The Operator has confirmed the plant does not take any waste streams that are known to contain materials treated with brominated flame retardants, therefore monitoring is not required.
5	**BAT is to appropriately monitor channelled emissions to air from the incineration plant during OTNOC.**	Compliant in the future See BAT 18
6	**BAT is to monitor emissions to water from FGC and/or bottom ash treatment with at least the frequency given and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quantity.**	
	Refer to monitoring emissions to water table in BAT Conclusion 6: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN	Not Applicable There are no emissions to water from FGC or bottom ash treatment from the site.

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
7	**BAT is to monitor the content of unburnt substance in slags and bottom ashes at the incineration plant with at least the frequency given and in accordance with EN standards.**		
	Refer to monitoring table in BAT Conclusion 7: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN		Currently Compliant As per the existing permit the TOC content is measured quarterly. The monitoring requirement will continue to be set in the permit from the compliance date.
8	**For the incineration of hazardous wastes containing POPs, BAT is to determine the POP content in the output streams (e.g. slags and bottom ashes, flue-gas, waste water) after the commissioning of the incineration plant and after each change that may significantly affect the POP content in the output stream.**		Not Applicable The Operator has confirmed no hazardous waste is incinerated. Nor is hazardous waste permitted to be incinerated.
GENERAL ENVIRONMENTAL AND COMBUSTION PERFORMANCE			
9	**In order to improve the overall environmental performance of the incineration plant by waste stream management (see BAT 1), BAT is to use all of the techniques (a), (b) and (c) given below, and, where relevant, also techniques (d), (e) and (f).**		
	(a)	Determination of the types of waste that can be incinerated	Currently Compliant The Operator has confirmed techniques (a)(b) and (c) are employed at the site. Hazardous wastes are not accepted so (f) is not applicable. The Operator has confirmed techniques (d) and (e) are not deemed required due to waste codes permitted which ensures a homogenous composition (regardless of EWC) and non hazardous. The Operator considers the risk of waste is low and formal tracking system is not deemed required. However, parts of the BATc are in place at the site such as: waste pre-acceptance checks are in place and are records are maintained, these records include quantity and nature of waste held on site, previous waste holder and delivery logs.
	(b)	Set-up and implementation of waste characterisation and pre-acceptance procedures	
	(c)	Set-up and implementation of waste acceptance procedures	
	(d)	Set-up and implementation of a waste tracking system and inventory	
	(e)	Waste segregation	
	(f)	Verification of waste compatibility prior to the mixing or blending of hazardous wastes	

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
10	**In order to improve the overall environmental performance of the bottom ash treatment plant, BAT is to include output quality management features in the EMS (see BAT 1)**		Not Applicable No bottom ash treatment plant on site.
11	**In order to improve the overall environmental performance of the incineration plant, BAT is to monitor the waste deliveries as part of the waste acceptance procedures (see BAT 9(c)) including, depending on the risk posed by the incoming waste, the element given.**		
	Refer to monitoring table in BAT Conclusion 11: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN		Currently Compliant The Operator has confirmed the following monitoring is completed on the waste deliveries in their waste acceptance procedures: • Weighing • Visual inspection • Sampling and chemical analysis As per the UK WI BREF Interpretation Document the UK Radioactive Substances Regulation is sufficiently robust to minimise the risk of radioactive material inadvertently being sent to incinerators, therefore the current UK regulators position is that radioactivity detection is not required at any incineration plant.
12	**In order to reduce the environmental risks associated with the reception, handling and storage of waste, BAT is to use both of the techniques given below:**		
	(a)	Impermeable surfaces with an adequate drainage infrastructure	Currently Compliant All process areas, loading / unloading, materials handling areas and roadways will be covered in concrete and/or tarmac hardstanding. External areas are provided with kerb containment. The waste bunker is impermeable concrete and fitted with a sump for drainage. Drainage from external

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
			areas with vehicles passes via an interceptor prior to discharge, there is also a shut off alarm in order to contain any firefighting water. Periodic integrity inspections will be carried out, visual inspections once a year and full civil engineer inspections carried out every 5 years.
	(b)	Adequate waste storage capacity	Currently Compliant The Operator has confirmed stock levels are tracked twice daily and fuel deliveries are based on stock levels in the bunker. Prior to planned shut downs fuel storage in the bunker is run down. The design of waste acceptance process ensure the capacity cannot be exceeded as sufficient headroom is required to operate the waste crane transfer from the unloading bay to the main bunker.
13	**In order to reduce the environmental risk associated with the storage and handling of clinical waste, BAT is to use a combination of the techniques given below:**		
	(a)	Automated or semi-automated waste handling	Not Applicable No clinical waste stored or handled.
	(b)	Incineration of non-reusable sealed containers, if used	
	(c)	Cleaning and disinfection of reusable containers, if used	
14	**In order to improve the overall environmental performance of the incineration of waste, to reduce the content of unburnt substances in slags and bottom ashes, and to reduce emissions to air from the incineration of waste, BAT is to use an appropriate combination of the techniques given below:**		
	(a)	Waste blending and mixing	Compliant in the future The Operator has confirmed (b) and (c) are in place at the site. The Operator has indicated there are further improvements
	(b)	Advanced control system	
	(c)	Optimisation of the incineration process	

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
			required to the optimisation of the incineration process to ensure the TOC content is below 3% which is a current permit requirement, this has been agreed with NRW and is being implemented.
	Table 1 including footnotes: BAT-associated environmental performance levels for unburnt substances in slags and bottom ashes from the incineration of waste **Associated monitoring given in BAT 7** *Footnote 1: Either the BAT-AEPL for TOC content or the BAT-AEPL for the loss on ignition applies* *Footnote 2: The lower end of the BAT-AEPL range can be achieved when using fluidised bed furnaces or rotary kilns operating in slagging mode*		
	TOC content in slags and bottom ashes (1)	1 – 3 Dry wt-% (2)	Compliant in the future The Operator has indicated there are further improvements required to the optimisation of the incineration process to ensure the TOC content is below 3% as per current permit requirements, due to previous exceedances, this has been agreed with NRW as part of ongoing permit compliance activity. The TOC BAT-AEPL will be implemented in the permit from the compliance date with the permitted performance requirement being unaltered. As per Footnote 1 either the BAT-AEPL for TOC or LOI applies, the Operator has chosen to continue with TOC.
	Loss on ignition of slags and bottom ashes (1)	1 – 5 Dry wt% (2)	
15	**In order to improve the overall environmental performance of the incineration plant and to reduce emissions to air, BAT is to set up and implement procedures for the adjustment of the plant's settings, e.g. through the advanced control system, as and when needed and practicable, based on the characterisation and control of the waste (see BAT 11)**		Currently Compliant A computer based system is employed at the site to control the incineration process. The system is supported by high-performance monitoring of emissions and operating parameters. It ensures the settings for the incineration process 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
		adjusted based on the control of the fuel feed.
16	**In order to improve the overall environmental performance of the incineration plant and to reduce emissions to air, BAT is to set up and implement operational procedures (e.g. organisation of the supply chain, continuous rather than batch operation) to limit as far as practicable shutdown and start-up operations.**	Currently Compliant The operation is continuous and not batch process. A preventative maintenance plan is in place to ensure critical equipment has a high level of availability and limits requirement for shut down and start up. The deliveries of fuel are based on fuel stock at the site. Critical spares are held on site. See BAT18 for further control measures which will be implemented through the OTNOC management plan.
17	**In order to reduce emissions to air and, where relevant, to water from the incineration plant, BAT is to ensure that the FGC system and the waste water treatment plant are appropriately designed (e.g. considering the maximum flow rate and pollutant concentrations), operated within their design range, and maintained so as to ensure optimal availability.**	Currently Compliant The Operator states continuous monitoring records demonstrate the FGC system is appropriately designed, with any improvements required to meet the relevant BAT-AELs as detailed below. FGC system is maintained to the manufacturer's recommendations with critical spares kept on site. There is no waste water treatment plant on site therefore those specific requirements are not applicable.
18	**In order to reduce the frequency of the occurrence of OTNOC and to reduce emissions to air and, where relevant, to water from the incineration plant during OTNOC, BAT is to set up and implement a risk-based OTNOC management plan as part of the environmental management system (see BAT 1) that includes all of the following elements:**	Compliant in the future The Operator has confirmed there is no NRW approved OTNOC management plan in place. Nevertheless answers to BAT16 and other BATc give a high level of confidence that required measures are or will be in place. We will review compliance
	Identification of potential OTNOC (e.g. failure of equipment critical to the protection of the environment ('critical equipment')), of their root causes and of their potential consequences, and regular review and update of the list of identified OTNOC following the periodic assessment 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
	Appropriate design of critical equipment (e.g. compartmentalisation of the bag filter, techniques to heat up the flue-gas and obviate the need to bypass the bag filter during start-up and shutdown etc.)		with this BATc via an improvement condition in the permit. (IC12)
	Set-up and implementation of a preventative maintenance plan for critical equipment (see BAT 1 (xii))		
	Monitoring and recording of emissions during OTNOC and associated circumstances (see BAT 5)		
	Periodic assessment of the emissions occurring during OTNOC (e.g. frequency of events, duration, amount of pollutants emitted) and implementation of corrective actions if necessary.		
ENERGY EFFICIENCY			
19	**In order to increase the resource efficiency of the incineration plant, BAT is to use a heat recovery boiler.**		Currently Compliant Heat recovery boiler in place at the site.
20	**In order to increase the energy efficiency of the incineration plant, BAT is to use an appropriate combination of the techniques given below:**		
	(a)	Drying of sewage sludge	Currently Compliant The Operator employs techniques (b)(c)(d) and (f). Technique (g) currently is not employed although the facility is deemed 'CHP ready' if a viable opportunity arises subject to commercial and economic feasibility.
	(b)	Reduction of the flue-gas flow	
	(c)	Minimisation of heat losses	
	(d)	Optimisation of the boiler design	
	(e)	Low-temperature flue-gas heat exchangers	
	(f)	High steam conditions	
	(g)	Cogeneration	
	(h)	Flue-gas condenser	
	(i)	Dry bottom ash handling	
	Table 2 including footnotes: BAT-associated energy efficiency levels for incineration of waste **Associated monitoring given in BAT 2** *Footnote 1: The BAT-AEEL only applies where a heat recovery boiler is applicable* *Footnote 2: The BAT-AEELs for gross electrical efficiency only apply to plants or parts of plants producing electricity using a condensing turbine* *Footnote 3: The higher end of the BAT-AEEL range can be achieved when using BAT 20 (f)* *Footnote 4: The BAT-AEELs for gross energy efficiency only apply to plants or parts of plants producing only heat or producing electricity using a back-pressure turbine and heat with the steam leaving the turbine* *Footnote 5: A gross energy efficiency exceeding the higher end of the BAT-AEEL range (even above 100 %) can be achieved where a flue-gas condenser is used*		

<table>
<tr><th>BATc number</th><th>Summary of BAT Conclusion requirement</th><th>Status/comment
One of the following:
Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant</th></tr>
<tr><td></td><td colspan="4">Footnote 6: For the incineration of sewage sludge, the boiler efficiency is highly dependent on the water content of the sewage sludge as fed into the furnace</td><td>Currently Compliant
This plant incinerates non-hazardous wood waste. The Operator has assessed the gross electrical efficiency as 34.3 % therefore towards the upper end of the BAT-AEEL range. Considering the UK WI BREF Interpretation document and given the plant is ‘CHP ready’ as per above we consider this adequate. Notwithstanding this the existing permit conditions relating to energy efficiency will ensure any further energy efficiency measures such as opportunities for the further use of heat are capitalised upon should they become practicable.</td></tr>
<tr><td></td><td>Plant</td><td colspan="2">Municipal solid waste, other non-hazardous waste and hazardous wood waste</td><td>Hazardous waste other than hazardous wood waste (1)</td><td>Sewage sludge</td></tr>
<tr><td></td><td></td><td>Gross electrical efficiency (2)(3)</td><td>Gross energy efficiency (4)</td><td colspan="2">Boiler efficiency</td></tr>
<tr><td></td><td>New plant</td><td>25 – 35 %</td><td rowspan="2">72 – 91 %</td><td rowspan="2">60 – 80 %</td><td rowspan="2">60 – 70 % (6)</td></tr>
<tr><td></td><td>Existing plant</td><td>20 – 35 %</td></tr>
<tr><td colspan="6">EMISSIONS TO AIR</td></tr>
<tr><td colspan="6">DIFFUSE EMISSIONS</td></tr>
<tr><td rowspan="3">21</td><td colspan="4">In order to prevent or reduce diffuse emissions from the incineration plant, including odour emissions, BAT is to:</td><td rowspan="3">Currently Compliant
The fuel is stored in a sealed bunker, only opened to allow deliveries of fuel, a misting system reduces fugitive dust emissions during fuel unloading. Ahead of planned shutdown periods the fuel in the bunkers is run down (see BAT9). No liquid wastes stored therefore not applicable.</td></tr>
<tr><td colspan="4">store solid and bulk pasty wastes that are odorous and/or prone to releasing volatile substances in enclosed building under controlled sub-atmospheric pressure and use the extracted air as combustion air for incineration or sent it to another suitable abatement system in the case of a risk of explosion
Store liquid wastes in tanks under appropriate controlled pressure and duct the tank vents to the combustion air feed or to another suitable abatement system</td></tr>
<tr><td colspan="4">Control the risk of odour during complete shutdown periods when no incineration capacity is available, examples given.</td></tr>
<tr><td>22</td><td colspan="4">In order to prevent diffuse emissions of volatile compounds from the handling of gaseous and liquid wastes that are odour and/or prone to releasing volatile substances at incineration plants, BAT is to introduce them into the furnace by direct feeding.</td><td>Not Applicable
No gaseous or liquid wastes handled.</td></tr>
</table>

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
23	**In order to prevent or reduce diffuse dust emissions to air from the treatment of slags and bottom ashes, BAT is to include in the environmental management system (see BAT 1) the following diffuse dust emissions management features:**			
	Identification of the most relevant diffuse dust emission sources (e.g. using EN 15445)			Not Applicable No treatment of slags and bottom ashes on site.
	Definition and implementation of appropriate actions and techniques to prevent or reduce dust emissions over a given time frame			
24	**In order to prevent or reduce diffuse dust emissions to air from the treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below:**			
	(a)	Enclose and cover equipment		Not Applicable No treatment of slags and bottom ashes on site.
	(b)	Limit height of discharge		
	(c)	Protect stockpiles against prevailing winds		
	(d)	Use water sprays		
	(e)	Optimise moisture content		
	(f)	Operate under sub-atmospheric pressure		
CHANNELLED EMISSIONS				
EMISSIONS OF DUST, METALS AND METALLOIDS				
25	**In order to reduce channelled emissions to air of dust, metals and metalloids from the incineration of waste, BAT is to use one or a combination of the techniques given below**			
	(a)	Bag filter		Currently Compliant Techniques (a) and (c) are implemented. The Operator has confirmed all previous monitoring records demonstrate complete compliance with BAT-AELs below.
	(b)	Electrostatic precipitator		
	(c)	Dry sorbent injection		
	(d)	Wet scrubber		
	(e)	Fixed- or moving-bed adsorption		
	Table 3 including footnote: BAT-AELs for channelled emissions to air of dust, metals and metalloids from the incineration of waste Associated monitoring given in BAT 4 *Footnote 1: For existing plants dedicated to the incineration of hazardous waste and for which a bag filter is not applicable, the higher end of the BAT-AEL range is 7 mg/Nm³*			
	Parameter	**BAT-AEL (mg/Nm³)**	**Averaging period**	Currently Compliant The Operator has confirmed all previous monitoring records demonstrate complete compliance with all three BAT-AELs. All relevant BAT-AELs will be implemented in
	Dust	<2 – 5 (1)	Daily average	
	Cd+Tl	0.005 – 0.02	Average over sampling period	
	Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V	0.01 – 0.3	Average over sampling period	

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
				the permit from the compliance date and no derogation has been requested.
26	**In order to reduce channelled dust emissions to air from the enclosed treatment of slags and bottom ashes with extraction of air (see BAT 24(f)), BAT is to treat the extracted air with a bag filter.**			Not Applicable No treatment of slags and bottom ashes.
	Table 4: BAT-AELs for channelled emissions to air of dust from the enclosed treatment of slags and bottom ashes with extraction of air Associated monitoring given in BAT 4			
	Parameter	**BAT-AEL (mg/Nm^3)**	**Averaging period**	Not Applicable No treatment of slags and bottom ashes.
	Dust	2 – 5	Average over the sampling period	
EMISSIONS OF HCl, HF AND SO_2				
27	**In order to reduce channelled emissions of HCl, HF and SO_2 to air from the incineration of waste, BAT is to use one or a combination of the techniques given below:**			
	(a)	Wet scrubber		Currently Compliant Technique (c) is implemented at the site.
	(b)	Semi-wet absorber		
	(c)	Dry sorbent injection		
	(d)	Direct desulphurisation		
	(e)	Boiler sorbent injection		
28	**In order to reduce channelled peak emissions of HCl, HF and SO_2 to air from the incineration of waste while limiting the consumption of reagents and the amount of residues generated from dry sorbent injection and semi-wet absorbers, BAT is to use technique (a) or both of the techniques given below:**			
	(a)	Optimised and automated reagent dosage		Currently compliant Technique (a) is carried out at the site. The dosing system is automated to ensure the consumption of reagents is optimised.
	(b)	Recirculation of reagents		
	Table 5 including footnote: BAT-AELs for channelled emissions to air HCl, HF and SO_2 from the incineration of waste Associated monitoring given in BAT 4 *Footnote 1: The lower end of the BAT-AEL range can be achieved when using a wet scrubber, the higher end of the range may be associated with the use of dry sorbent injection*			
	Parameter	**BAT-AEL (mg/Nm^3)**	**Averaging period**	Compliant in the future
		New plant / **Existing plant**		

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
	HCl	<2 – 6 (1)	<2 – 8 (1)	Daily average	The Operator has confirmed previous monitoring records demonstrate high level of compliance with the BAT-AELs, they will be implemented in the permit from the compliance date and no derogation has been requested.
	HF	<1	<1	Daily average of average over the sampling period	
	SO_2	5 - 30	5 - 40	Daily average	
	EMISSIONS OF NO_X, N_2O, CO AND NH_3				
29	**In order to reduce channelled NO_x emissions to air while limiting the emissions of CO and N_2O from the incineration of waste and the emissions of NH_3 from the use of SNCR and/or SCR, BAT is to use an appropriate combination of the techniques given below:**				
	(a)	Optimisation of the incineration process			Compliant in the future Techniques (a)(b)(c) and (f) are in place. As per the UK WI BATC Interpretation document an IC is to be included in all permits requiring Operators to optimise their de-NOx systems (IC9).
	(b)	Flue-gas recirculation			
	(c)	Selective non-catalytic reduction (SNCR)			
	(d)	Selective catalytic reduction (SCR)			
	(e)	Catalytic filter bags			
	(f)	Optimisation of the SNCR/SCR design and operation			
	(g)	Wet scrubber			
	Table 6 including footnotes: BAT-AELs for channelled NO_x and CO emissions to air from the incineration of waste and for channelled NH_3 emissions to air from the use of SNCR and/or SCR **Associated monitoring given in BAT 4** *Footnote 1: The lower end of the BAT-AEL range can be achieved when using SCR. The lower end of the BAT-AEL range may not be achievable when incinerating waste with a high nitrogen content (e.g. residues from the production of organic nitrogen compounds)* *Footnote 2: The higher end of the BAT-AEL range is 180 mg/Nm³ where SCR is not applicable* *Footnote 3: For existing plants fitted with SNCR without wet abatement techniques, the higher end of the BAT-AEL range is 15 mg/Nm³*				
	Parameter	**BAT-AEL (mg/Nm³)**		**Averaging period**	
		New Plant	**Existing plant**		
	NO_x	50 – 120 (1)	50 – 150 (1) (2)	Daily average	Currently compliant Operator confirmed previous monitoring records demonstrate complete compliance with the NOx BAT-AEL (having regard for footnote 2, which is applicable) and no derogation has been requested. As the

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
					plant is a co-incineration plant the BAT-AEL will be set in the permit at 6% oxygen content from the compliance date. Footnote 2 will be applied.
	CO	10 – 50	10 – 50		Compliant in the future Operator confirmed previous monitoring records demonstrate one record over the CO BAT-AEL. No derogation has been requested. As the plant is a co-incineration plant the BAT-AEL will be set in the permit at 6% oxygen content from the compliance date.
	NH_3	2 – 10 (1)	2 – 10 (1) (3)		Currently compliant Operator confirmed previous monitoring records demonstrate complete compliance with the NH_3 BAT-AEL and no derogation has been requested. As the plant is a co-incineration plant the BAT-AEL will be set in the permit at 6% oxygen content from the compliance date. Footnote 3 will be applied.
EMISSIONS OF ORGANIC COMPOUNDS					
30	**In order to reduce channelled emissions to air of organic compounds including PCDD/F and PCBs from the incineration of waste, BAT is to use techniques (a), (b), (c), (d) and one or a combination of techniques (e) to (i) given below:**				
	(a)	Optimisation of the incineration process			Compliant in the future Techniques (a)(b)(c)(d) and (e) are in place, with any improvements required to meet the relevant BAT-AELs as detailed below
	(b)	Control of the waste feed			
	(c)	On-line and off-line boiler cleaning			
	(d)	Rapid flue-gas cooling			
	(e)	Dry sorbent injection			
	(f)	Fixed- or moving- bed adsorption			

<table>
<tr><th>BATc number</th><th colspan="5">Summary of BAT Conclusion requirement</th><th>Status/comment
One of the following:
Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant</th></tr>
<tr><td rowspan="6"></td><td colspan="2">(g)</td><td colspan="3">SCR</td><td rowspan="3"></td></tr>
<tr><td colspan="2">(h)</td><td colspan="3">Catalytic filter bags</td></tr>
<tr><td colspan="2">(i)</td><td colspan="3">Carbon sorbent in a wet scrubber</td></tr>
<tr><td colspan="6">Table 7 including footnotes: BAT-AELs for channelled emissions to air of TVOC, PCDD/F and dioxin-like PCBs from the incineration of waste
Associated monitoring given in BAT 4
Footnote 1: Either the BAT-AEL for PCDD/F or the BAT-AEL for PCDD/F + dioxin-like PCBs applies
Footnote 2: The BAT-AEL does not apply if the emission levels are proven to be sufficiently stable</td></tr>
<tr><td>Parameter</td><td>Unit</td><td colspan="2">BAT-AEL</td><td>Averaging period</td><td rowspan="2">Compliant in the future
Operator confirmed previous monitoring records demonstrate a high level of compliance with the TVOC BAT-AEL and no derogation has been requested. As the plant is a co-incineration plant the BAT-AEL will be set in the permit at 6% oxygen content from the compliance date.</td></tr>
<tr><td></td><td></td><td>New plant</td><td>Existing plant</td><td></td></tr>
<tr><td>TVOC</td><td>mg/Nm^3</td><td><3 – 10</td><td><3 – 10</td><td>Daily average</td></tr>
<tr><td rowspan="2">PCDD/F (1)</td><td rowspan="2">ng I-TEQ/Nm^3</td><td><0.01 – 0.04</td><td><0.01 – 0.06</td><td>Average over the sampling period</td><td rowspan="2">Currently Compliant
Operator confirmed previous monitoring records demonstrate complete compliance with the PCDD/F BAT-AELs and no derogation has been requested. Both BAT-AELs will be set in the permit from the compliance date, caveats will apply to reflect the footnotes in the BATc and ongoing requirement to demonstrate the emissions levels are sufficiently stable.</td></tr>
<tr><td><0.01 – 0.06</td><td><0.01 – 0.08</td><td>Long-term sampling period (2)</td></tr>
<tr><td rowspan="2">PCDD/F + dioxin-like PCBs (1)</td><td rowspan="2">ng WHO-TEQ/Nm^3</td><td><0.01 – 0.06</td><td><0.01 – 0.08</td><td>Average over the sampling period</td><td rowspan="2">Not applicable
As per footnote 1 either the BAT-AEL for PCDD/F or PCDD/F + dioxin like PCBs applies. The Operator has chosen to continue with monitoring of PCDD/F.</td></tr>
<tr><td><0.01 – 0.08</td><td><0.01 – 0.1</td><td>Long-term sampling period (2)</td></tr>
</table>

<table>
<tr><th>BATc number</th><th>Summary of BAT Conclusion requirement</th><th>Status/comment
One of the following:
Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant</th></tr>
<tr><td colspan="3">EMISSIONS OF MERCURY</td></tr>
<tr><td rowspan="2">31</td><td colspan="2">In order to reduce channelled mercury emissions to air (including mercury emission peaks) from the incineration of waste, BAT is to use one of a combination of the techniques given below:</td><td rowspan="2">Currently compliant
Techniques (b) is in place. Given the waste feedstock we expect the mercury emissions to be low.</td></tr>
<tr><td colspan="2">(a) Wet scrubber (low pH)
(b) Dry sorbent injection
(c) Injection of special, highly reactive activated carbon
(d) Boiler bromine addition
(e) Fixed- or moving-bed adsorption</td></tr>
<tr><td></td><td colspan="3">Table 8 including footnotes: BAT-AELs for channelled mercury emissions to air from the incineration of waste
Associated monitoring given in BAT 4
Footnote 1: Either the BAT-AEL for daily average or average over the sampling period or the BAT-AEL for long-term sampling period applies. The BAT-AEL for long-term sampling may apply in the case of plants incinerating waste with a proven low and stable mercury content (e.g. mono-streams of waste of a controlled composition)
Footnote 2: The lower end of the BAT-AEL ranges may be achieved when:
- incinerating wastes with a proven low and stable mercury content (e.g. mono-streams of waste of a controlled composition); or
- using specific techniques to prevent or reduce the occurrence of mercury peak emissions while incinerating non-hazardous waste. The higher end of the BAT-AEL ranges may be associated with the use of dry sorbent injection.

As an indication the half-hourly average mercury emissions level will generally be:
- <15 – 40 µg/Nm³for existing plants;
- <15 – 35 µg/Nm³for new plants</td></tr>
<tr><td></td><td colspan="3"><table>
<tr><th rowspan="2">Parameter</th><th colspan="2">BAT-AEL (µg/Nm³) (1)</th><th rowspan="2">Averaging period</th></tr>
<tr><th>New plant</th><th>Existing plant</th></tr>
<tr><td rowspan="2">Hg</td><td><5 – 20 (2)</td><td><5 – 20 (2)</td><td>Daily average or average over the sampling period</td></tr>
<tr><td>1 - 10</td><td>1 - 10</td><td>Long-term sampling period</td></tr>
</table></td><td>Compliant in the future
Operator confirmed previous monitoring records demonstrate complete compliance with the Hg BAT-AELs and no derogation has been requested.

As per the BATc either the BAT-AEL for periodic or continuous or long-term sampling applies. The Operator has indicated they wish to satisfy the UK Mercury Monitoring Protocol and remain</td></tr>
</table>

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
					on periodic as opposed to long-term sampling. They are currently gathering data to satisfy the protocol. The protocol will determine if they can remain on periodic monitoring or are required to carry out continuous monitoring. Both BAT-AELs will be set in the permit from the compliance date, caveats will apply to reflect the footnotes in the BATc and ongoing requirement to demonstrate long-term sampling is not required. As the Operator has not yet satisfied the protocol, assessment of this will be achieved through an Improvement Condition included in the permit.
EMISSIONS TO WATER					
32	**In order to prevent the contamination of uncontaminated water, to reduce emissions to water, and to increase resource efficiency, BAT is to segregate waste water streams and to treat them separately, depending on their characteristics.**				Currently Compliant There is only one process related wastewater stream from the installation which is boiler blow down. This is segregated and discharged to foul sewer. Uncontaminated surface water run-off is segregated and discharged separately to minimise quantities of wastewater requiring treatment.
33	**In order to reduce water usage and to prevent or reduce the generation of waste water from the incineration plant, BAT is to use one or a combination of the techniques given below:**				
	(a)	Waste water free FGC techniques			Currently Compliant Techniques (a) and (c) are in place. In addition, air cooled condensers are installed so water is not used in the cooling
	(b)	Injection of waste water from FGC			
	(c)	Water reuse/recycling			
	(d)	Dry bottom ash handling			

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
			process. Wastewater is reused as far as possible within the ash quench.
34	**In order to reduce emissions to water from FGC and/or from the storage and treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below, and to use secondary techniques as close as possible to the source in order to avoid dilution:**		
	Primary techniques		Currently Complaint Technique (a) is in place due to the use of waste water free FGC techniques by dry flue gas cleaning, including use of SNCR. The operator is currently compliant with both BAT14 and BAT29(f). The rest of the BATc is not applicable as there are no emissions to water from FGC and/or storage and treatment of slags and bottom ashes. The only emissions to water from the site are of uncontaminated surface water or boiler blow down (to foul sewer). BAT-AELs are not applicable.
	(a)	Optimisation of the incineration process (see BAT 14) and/or of the FGC system (e.g. SNCR/SCR, see BAT 29(f))	
	Secondary techniques – preliminary and primary treatment		
	(b)	Equalisation	
	(c)	Neutralisation	
	(d)	Physical separation, e.g. screens, sieves, grit separators, primary settlement tanks	
	Secondary techniques – physico-chemical treatment		
	(e)	Adsorption on activated carbon	
	(f)	Precipitation	
	(g)	Oxidation	
	(h)	Ion exchange	
	(i)	Stripping	
	(j)	Reverse osmosis	
	Secondary techniques – final solids removal		
	(k)	Coagulation and flocculation	
	(l)	Sedimentation	
	(m)	Filtration	
	(n)	Flotation	
MATERIAL EFFICIENCY			
35	**In order to increase resource efficiency, BAT is to handle and treat bottom ashes separately from FGC residues.**		Currently Compliant The Operator has confirmed that bottom ash and FGC residues are handled and treated separately.

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
36	**In order to increase resource efficiency for the treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below based on a risk assessment depending on the hazardous properties of the slags and bottom ashes:**		
	(a)	Screening and sieving	Not Applicable There is no treatment of slags and bottoms ashes on site.
	(b)	Crushing	
	(c)	Aeraulic separation	
	(d)	Recovery of ferrous and non-ferrous metals	
	(e)	Ageing	
	(f)	Washing	
NOISE			
37	In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below:		
	(a)	Appropriate location of equipment and buildings	Currently Compliant We consider an appropriate combination of these techniques are in place, including (a)(b) and (d). A noise survey has been completed which demonstrated nuisance is not expected at sensitive receptors.
	(b)	Operational measures	
	(c)	Low-noise equipment	
	(d)	Noise attenuation	
	(e)	Noise-control equipment/infrastructure	

Annex 2: Decision Checklist regarding additional requested items

Item as listed in Regulation 61(1) Notice and Section 3 above	Comment on Operator's response to request
A – Energy Efficiency Directive	As per the notice, this request is not applicable as there is no requirement for substantial refurbishment or installation of a new industrial installation with an aggregate thermal input of greater than 20 MWth, which generates more than 100 kWth of waste heat.
B – Discharges to surface waters and/or sewers	There is an emission to foul sewer from the regulated facility of boiler blow down. The Operator has provided the screening tests which we have reviewed in line with current guidance: Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk). The substances were screened out by the Phase 1 screening tests and therefore there was no need to carry out Phase 2 modelling, as described in the above guidance.

C – Soil and groundwater contamination – baseline report	The Operator has provided a baseline report which contains the information necessary to determine the current state of soil and groundwater contamination. The baseline report has been produced and reviewed in line with 'H5 Site Condition Report' guidance and concludes that there is little risk to the environment due to suitable mitigation measures in place. The installation will employ periodic soil and groundwater sampling in line with the permit conditions.
D – Medium Combustion Plant	The Operator has provided detail of any Medium Combustion Plant on site. The Operator confirmed there is 1No. 3.4 MWth input diesel (gas oil) fuelled emergency generator on site. The MCP is considered a limited operating hours existing MCP as first put into operation before 20 December 2018 and operates for less than 500 hours per year. The MCP is permitted as a DAA in the permit, however we have updated the site plan in the permit to include the emission point (A2) from the MCP. We have conducted early permitting of the existing MCP, this means we have post-dated any MCP conditions in the permit to prevent the need for a future variation to the permit when the relevant MCP compliance date is reached.
E – OPRA profile	The Operator has provided an updated OPRA profile which we have reviewed. The OPRA score has increased from 197 to 212 and this will form the basis for ongoing subsistence fees.