Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – Tradebe Gwent Limited

We have decided to issue a Natural Resources Wales initiated variation and consolidated permit for the Gwent Waste Management Centre in Newport operated by Tradebe Gwent Limited.

The permit number is EPR/SP3531SK.

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 Gwent Waste Management Centre against the published BAT conclusions for Waste Treatment.
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions

Assessment of Gwent Waste Management Centre against the published BAT conclusions for Waste Treatment

1. Our decision

We have issued a variation, which will allow Tradebe Gwent Limited 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 26 June 2006 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 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); and
- 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 5 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:

- Describe 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, Tradebe Gwent Limited 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. Tradebe Gwent Limited have a copy of a consequent baseline report.

- Where their permitted activity involves the use, production, storage or release of priority hazardous substances and any other relevant substances., as defined by the Water Framework Directive, Tradebe Gwent Limited 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.

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 Waste Treatment 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 30 September 2019 and additional information received on the 29 July 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 response

BAT Conclusions for the Waste Treatment were published as 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 response was received from Tradebe Gwent Limited. Following assessment of the Regulation 61(1) response, further information was requested from Tradebe Gwent Limited. 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.

Reference	Requirement	Date
IC14	The Operator shall submit to Natural Resources Wales for written approval information to evidence compliance with the following BAT requirements in accordance with the requirements specified within the BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: • BAT 3 - in order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the Environmental Management System, that incorporates all of the following features:	17th February 2022 or otherwise agreed in writing by Natural Resources Wales

	○ Information about the characteristics of the waste to be treated and the waste treatment processes; ○ information about the characteristics of the waste water streams; and ○ information about the characteristics of the waste gas streams. • BAT 8 - upon completion and review of the inventory of waste gas streams, BAT 8 is to monitor channelled emissions to air with at least the frequency outlined within the table of BAT 8. • BAT 53 - in order to reduce emissions to air, BAT is to reduce air emisisons by using an appropriate combination of the techniques described within the table of BAT 53 with the associated BAT-AELs. • The Operator shall submit for written approval a methodology for monitoring the relevant process parameters listed in Schedule 3b Table S3.1 following completion of BAT 3. The methodology shall identify each of the relevant process parameters and detail the frequency and techniques in place to record the data (outlined in BAT8 and BAT 53). 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 relevant parameters identified with associated procedures in place if trigger levels are exceeded.	
IC15	The Operator shall submit to Natural Resources Wales for written approval information to evidence compliance with the following BAT requirements in accordance with the requirements specified within the BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: • BAT 20 - in order to reduce emissions to water, BAT is to treat waste water by using an appropriate combination of the techniques described within the table of BAT 20 with the associated BAT-AELs.	17th February 2022 or otherwise agreed in writing by Natural Resources Wales

	• The Operator shall submit for written approval a methodology for monitoring the relevant process parameters listed in Schedule 3b S3.3. The methodology shall identify each of the relevant process parameters and detail the frequency and techniques in place to record the data (outlined in BAT 7 and BAT 20). 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 relevant parameters identified with associated procedures in place if trigger levels are exceeded.	
IC16	The Operator shall complete and submit for approval a Phase 1 screening test report for priority hazardous pollutants and any other relevant priority hazardous substances discharged to sewer. 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") should be undertaken, and the results of the modelling submitted to Natural Resources Wales for approval.	17th February 2022 or otherwise agreed in writing by Natural Resources Wales

IC14 – The Operator stated that the site currently has no data for emissions to air. The IC is therefore to establish and maintain an inventory of waste gas streams from the installation to form part of the Environmental Management System (EMS) as per the requirements of BAT Conclusion 3.

Upon completion of BAT Conclusion 3 and the inventory of waste gas streams, BAT Conclusion 8 is to monitor the relevant channelled emission to air with at least the frequency outlined within the table of BAT Conclusion 8. In order to reduce emissions to air, BAT Conclusion 53 is to reduce these emissions through using an appropriate combination of techniques described within the associated table. BAT-associated emission levels (BAT-AELs) for channelled emissions to air are then provided within BAT Conclusion 53.

The Operator shall then submit for written approval a methodology for monitoring the relevant process parameters listed in Schedule 3b Table S3.1, following completion of BAT 3. The methodology shall identify each of the relevant process parameters and detail the frequency and techniques in place to record the data (outlined in BAT 8 and BAT 53). 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 relevant parameters identified with associated procedures in place if trigger levels are exceeded.

IC15 – The installation is currently undertaking an effluent improvement project. In order to reduce emissions to water, BAT Conclusion 20 is to treat waste water using an appropriate combination of techniques described within the table of BAT Conclusion 20. This also includes the associated BAT-AELs for which the site will need to comply with. The BAT-AELs were taken from Table 6.2 of BAT 20 for which the 'treatment of water-based liquid waste' was considered the most appropriate activity.

The Operator shall therefore submit for written approval a methodology for monitoring the relevant process parameters listed in Schedule 3b S3.3. The methodology shall identify each of the relevant process parameters and detail the frequency and techniques in place to record the data (outlined in BAT 7, and BAT 20). 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 relevant parameters identified with associated procedures in place if trigger levels are exceeded.

IC16 – The Operator shall complete and submit for approval a Phase 1 screening test report for priority hazardous pollutants and any other relevant priority hazardous substances discharged to sewer. 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") should be undertaken, and the results of the modelling submitted to Natural Resources Wales for approval.

Operational Changes

There are no operational changes.

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 company carried out the following assessment:

- Screening tests for priority hazardous pollutants and any other relevant priority hazardous substances.

The company now needs to undertake the following and is subject to IC16:

- 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".

Emissions to Water – Article 15(4) Derogations

No derogations were requested.

Emissions to Air

There were changes to the Emission Limit Values (ELV's) for emissions to air taking into account BAT conclusions from the Waste Treatment BREF. The tables below outline the parameters and limits set to implement the BAT-AELs:

Effective until 16 August 2022

Release point	Parameter	Limit/ BAT AEL	Effective until
A1	No paramaters set	No limit set	16 August 2022
A2	No parameters set	No limit set	16 August 2022

A3	No parameters set	No limit set	16 August 2022

Effective from 17 August 2022

Release point	Parameter	Limit/ BAT AEL	Effective from
A1	Hydrogen Chloride (HCI)1	5 mg/Nm^3	17 August 2022
	Total Volatile Organic Compounds (TVOC)1	20 mg/Nm^3	17 August 2022

The parameters identified and effective from 17 August 2022 only apply when the parameters concerned are identified as relevant in the waste gas inventory and subject to IC14.

Emissions to Air – Article 15(4) Derogations

No derogations were requested.

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, and that the operator has achieved significant improvements in performance since the permit was originally granted. 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 Commission Implementing Decision EU 2018/1147 in the Official Journal of the EU on 17 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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
OVERALL ENVIRONMENTAL PERFORMANCE			
1	**Environment Management System (EMS) – <u>ALL</u> of the following:**		
	I.	Management commitment	Currently Compliant – Commitment of management and senior management and environmental policy development is included within the sites SHEQ Policy Statement which forms part of the EMS.
	II.	Environmental policy development including CI of performance	
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	Currently Compliant – The item is covered within the sites EMS, as shown in the sites IMS Framework Statement.

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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
	IV.	***Implementation of procedures***	
		(a) Structure & responsibility	Currently Compliant – All of the items are covered within the sites EMS, as shown in the sites IMS Framework Statement.
		(b) Recruitment, training, awareness & competence	
		(c) Communication	
		(d) Employee involvement	
		(e) Documentation	
		(f) Effective process control	
		(g) Maintenance programmes	
		(h) Emergency preparedness & response	
		(i) Safeguarding compliance with environmental legislation	
	V.	***Checking performance and taking corrective action***	
		(a) Monitoring & measurement	Currently Compliant - All treated waste water (effluent) is stored in a tank. The lab analysis the contents of the tank, the analysis is discussed at the daily site management meeting and if the contents are within permitted scope, the contents are released into the sewer system through a MCERTs calibrated metre which measures the volume. This is then recorded by volume and date.
		(b) Corrective and preventive action	Curently Compliant - All incidents and events are captured and managed on a management program called Q pulse. This system logs and sets time dependant actions for close out.

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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
			Regular audits of site are undertaken to identity any potential issues, all audits are captured on the Q pulse system. All waste water undergoes a full suite of analysis before discharge, following the Monitoring of Final Effluent Discharge procedure PGTR 102. When waste water (effluent) is analysed and falls outside the permitted scope, the results are discussed at the daily management meeting where it is decided on how best the waste water is treated to bring it within permitted scope.
		(c) Maintenance of records	Currently Compliant - All treated waste records are kept for 5 years.
		(d) Independent (where practicable) internal or external EMS auditing	Currently Compliant - Internal Audits are carried out by SHEQ team and are known as Proud audits these are carried out on annual basis where the results are compiled to measure compliance and help identify any short comings along with an action plan to correct. Monthly Inspections are carried out by SHEQ which incorporate any EMS findings. Any findings are then electronically recorded on a system called Q-Pulse which assigns personnel with actions within a time frame. All personal on site have access to Q-Pulse where they can rise SHEQ concerns. External Audits are carried out by SIRA for compliance with MCERTs along with IS014001

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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
	VI.	Senior management review of EMS	Currently Compliant – This is reviewed annually as per the IMS Framework Statement.
	VII.	Following development of cleaner technologies	Currently Compliant - Tradebe hold a bi annual global knowledge sharing platform at which new technologies are proposed and discussed. This is to be supplemented in the future by a new UK innovation committee expected in 2021.
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	Curently Compliant - A closure plan was attached. Any future developments on sites that include new design for plant and equipment will have incorporated a HAZID and HAZOP study which considers their environmental aspects and impacts.
	IX.	Regular sectoral bench marking	Currently Compliant - Tradebe are active members of the Environmental Services Association, together with Environment Agency Hazardous Waste Institute holder forum which allows them to stay engaged with regulators.
	X.	Waste stream management (BAT 2)	Currently Compliant – Please see more detail in BAT 2.
	XI.	Inventory of waste water & waste gas streams (BAT 3)	Currently Compliant - All data and information on input waste streams are stored on SAP, this includes all pre-acceptance and acceptance analysis. Please see more detail in BAT 3.
	XII.	Residues Management Plan – S6.5	Compliant in the Future – Currently in draft format and to be completed in 2021.
	XIII.	Accident Management Plan – S6.5	Compliant in the Future - All accidents are recorded on the Q-Pulse system and if required reported to the necessary government body

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
			e.g Environmental Agency, Health, Safety Executive. Currently a new incident occurrence management plan is under final development.
	XIV.	Odour Management Plan (BAT 12)	Currently Compliant – The site has an Odour Management Plan however has not experienced any odour issues at the site.
	XV.	Noise & Vibration Management Plan (BAT 17)	Currently Compliant – The site has a Noise & Vibration Management Plan however has not experienced any issue at the site.
2	**Improving overall environmental performance – <u>ALL</u> of the following:**		
	a.	Set up and implement waste characterisation & pre-acceptance procedures	Currently Compliant - Waste characterisation and pre-acceptance is completed following pre-acceptance procedures and material assessment questionnaires along with analysis of pre-acceptance samples.
	b.	Set up and implement waste acceptance procedures	Currently Compliant - Waste acceptance is completed following acceptance procedures and acceptance testing of samples.
	c.	Set up and implement a waste tracking system & inventory	Currently Compliant – A SAP system tracks and maintains an inventory of wastes on site via manual checks and barcoding.
	d.	Set up and implement an output quality management system	Currently Compliant – There are procedures and testing for analysing outputs from site and this is used to manage quality, the site is externally accredited to ISO 9001 standard.
	e.	Ensure waste segregation	Currently Compliant – Wastes are segregated on site through a number of procedures to manage this.

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	f.	Ensure waste compatibility prior to mixing or blending	Currently Compliant – Testing is carried out on compatibility before any mixing of wastes on site.
	g.	Sort solid incoming waste – S6.4	Not Applicable – Sorting of incoming solid waste is not undertaken at the site.
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	Currently Compliant – The site has a process flow diagram showing the emission sources.
	(i)(b)	Process-integrated and waste water/waste gas treatment descriptions including performance	Currently Compliant – The site has a procedure for the operation of the site and the monitoring of effluent, scrubbers and filtercake which includes a description and their performance.
	Information on characteristics of waste water streams		
	(ii)(a)	*Mean and variability of:*	Currently Compliant – The site analyse the waste streams on a regular basis which include pH, temperature, conductivity and effluent flow.
		Flow	
		pH	
		Temperature	
		Conductivity	
	(ii)(b)	*Mean concentration, load and variability of:*	Currently Compliant – Information was provided on the characteristics of the waste water stream including average and maximum measurement values.
		Total suspended solids	
		COD/TOC	
		Nitrogen species	
		Phosphorous	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
		Metals	As above.
		Priority substances/micropollutants	
		Any other relevant compounds	
	(ii)(c)	*Bioeliminability data (see BAT 52):*	Currently Compliant – Spot samples of BOD are undertaken however as the site is an inorganic process, the levels are stated as being consistently low. COD levels are part of the pre-acceptance tests to mimic the reduction of COD expected during treatment in the plant. BOD analysis of the trade effluent is carried out.
		BOD	
		BOD to COD ratio	
		Zahn-Wellens test	
		Biological inhibition potential	
	Information on characteristics of waste gas streams		
	(iii)(a)	*Mean and variability of:*	Compliant in the Future – Please see BAT 8.
		Flow	
		temperature	
	(iii)(b)	*Mean concentration, load and variability of relevant substances:*	
		Organic compounds	
		POPs e.g. PCBs	
		Any other relevant compounds	
	(iii)(c)	Flammability	
		Lower and Higher Explosive Limits	
		Reactivity	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	(iii)(d)	*Presence of other substances that may affect the gas treatment system or plant safety:*	As above.
		O2	
		N2	
		Water vapour	
		Dust	
4	**Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:**		
	a.	Optimised storage location	Currently Compliant – The storage of waste on site is optimised as far as possible, all wastes are stored within appropriate bunded areas and on impermeable concrete with sufficient buffer capacity.
	b.	Adequate storage capacity	Currently Compliant – The maximum storage of areas at the site is displayed and adhered to by using daily site checks and the SAP system. The storage time on site is monitored through the SAP system and COMAH checks are carried out to ensure the site is below the lower limit.
	c.	Safe storage operation	Currently Compliant – The site uses containers which are checked to ensure they are fit for purpose and sensitive wastes are stored away from potential ignition sources (heat, light, air, water etc.).
	d.	Separate area for storage & handling of packaged hazardous waste	Currently Compliant – There is a separate roofed, bunded storage area for packaged wastes.
5	**Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:**		

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	Carried out by competent staff	Currently Compliant – The handling and transfer of wastes are completed by competent staff which is demonstrated by a training matrix which includes both internal and external training (e.g. WAMITAB etc.)
	Duly documented, validated and verified	Currently Compliant – Procedures, paperwork and testing are carried out prior to execution and after execution on handling and transfer of wastes – ensure full documentation that is validated and verified.
	Spill prevention, detection and mitigation measures	Currently Compliant – The site has a spill procedure in place to manage spills, daily checks are made of the site and the condition of containers, the entire site is bunded and so any spills are contained.
	Take precautions when mixing or blending wastes	Currently Compliant – Compatibility testing, local extraction and the scrubber system are used to ensure safe mixing and blending of wastes.
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	Currently Compliant – The site has a number of processes in place that are risk-based and consider accidents and environmental impact. All incidents and accidents are captured on a database, Q Pulse, for which resulting actions are recorded. Other examples were provided such as making sure staff are technically trained (WAMITAB etc.) and undertake roles such as supervision.

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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
	MONITORING	
6	**Relevant emissions to water: monitor key process parameters at key locations**	
	Key process parameters	
	Waste water flow	Currently Compliant – Key process parameters such as flow rate, pH, temperature and conductivity are monitored. The site also has a Trade Effluent Consent (TEC) in place with the sewage undertaker.
	pH	
	Temperature	
	Conductivity	
	BOD	
	Other process parameters	
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	Currently Compliant – Monitoring is undertaken after the treatment process near to the process control building anr market on Drawing Figure5AX_REV1.
	Final treatment inlet	
	Discharge point (to the environment)	
	Other location	
7	Monitoring emissions to water (refer to table) Monitoring parameters depend on waste treatment process(es) involved	Currently Compliant – A spreadsheet was provided with the relevant emissions and the associated monitoring requirements.
8	Monitoring emissions to air (refer to table) Monitoring parameters depend on waste treatment process(es) involved	Compliant in the Future – The response stated that the site currently has no data for emisisons to air and that quotes have been obtained to review the relevant substances in combination with BAT 3.

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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
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	Not Applicable – The site does not process solvents.
	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		Currently Compliant – There have been no odour issues with the site and the waste processed are almost exclusively non-odourous in their nature.
	Use equivalent methods e.g. ISO / national / international monitoring standards		
11	**Annual monitoring for:**		
	- **Water, energy and raw materials**		Currently Compliant – The site already monitor and report the annual consumption of water, energy and raw materials in addition to the generation of residues and waste water.
	- **Generation of residues and waste water**		
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		

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	Protocol for conducting odour monitoring (BAT 10)		Not Applicable – There have been no odour issues with the site and the wastes processed are considered not odorous.
	Protocol for response to odour incidents/complaints		
	Odour prevention and reduction programme		
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)	Not Applicable – There have been no odour issues with the site and the wastes processed are considered not odorous.
	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.	
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	Currently Compliant – Pipe run length is reduced where possible in addition to gravity transfer use. On site traffic speed is also limited as examples.
	b.	Select and use high-integrity equipment – see examples	Currently Compliant – As an example magnetic driven pumps are used on site where possible.
	c.	Corrosion prevention – see examples	Currently Compliant – Pipes and tanks are constructed of suitable corrosion reistant material.
	d.	Containment, collection and treatment of diffuse emissions – see examples	Currently Compliant – The site has an LEV system where air is directed through a scrubber system.
	e.	Dampening (with water or fog)	Currently Compliant – Dampening is not required as there is no dust generation due to regular road sweeping.

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	f.	Maintenance – see examples	Currently Compliant – The site has a PPMS system for managing and repairing equipment and a WRN system supported by a H&S system. Lamellar curtains are used where possible.
	g.	Cleaning of waste treatment and storage areas – see examples	Currently Compliant – The site is cleaned regularly and undergoes daily checks/inspections. Road sweepers are stated to attend site regularly to ensure areas are clean.
	h.	Leak Detection And Repair (LDAR) programme for organics – S6.2	Not Applicable – The site does not process organic material.
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	Not Applicanle – The site does not flare.
	b.	Plant management including gas system balancing and advanced process control	
16	**Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:**		
	a.	Correct design of flaring devices – see examples	Not Applicable – The site does not flare.
	b.	Monitoring and recording as part of flare management – see examples	
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	

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	II.	Noise and vibration monitoring plan/protocol	Not Applicable – The site has stated that it has been established for 24 years with no complaints of noise or vibration.
	III.	Noise & vibration complaint response plan/protocol	
	IV.	Noise and vibration reduction programme	
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	Currently Compliant – The site is surrounded by well-established trees and bushes that dampen sound generated on site. All bulk processing is located inside the treatment plant. Noise generating equipment, fans, are located in a segregated housing enclosed behind sound prove doors. All pumps, fans and other operational equipment are maintained under the site PPMS system to ensure that they run efficiently and quietly.
	b.	Operational measures – see examples	
	c.	Low-noise equipment – see examples	
	d.	Noise & vibration control equipment – see examples	
	e.	Noise attenuation – see examples	
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:**		
	a.	Water management – see examples	Currently Compliant – The site has had a water saving audit undertaken and as a result replaced taps with water efficient taps as one example.

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	b.	Water recirculation	Currently Compliant - Water recirculation is carried out where possible including making lime slurry with recirculated water.
	c.	Impermeable surface	Currently Compliant - The site is on an impermeable surface and sufficiently bunded to prevent emissions to the environment.
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	Currently Compliant - The waste tanks have high level alarms and overflow pipes. The tanks are situated in bunds which are greater than their volume, tanks may be isolated by valves.
	e.	Roofing of waste storage and treatment areas	Currently Compliant - The treatment building and transfer station are under a roof and so the vast majority of waste on site in stored within buildings.
	f.	Segregation of water streams (being mindful of existing plant constraints)	Currently Compliant - Wastes are kept segregated and there are individual bunds to prevent incompatible wastes mixing. Rainwater from the roof is sent straight offsite to prevent contamination of clean water.
	g.	Adequate drainage infrastructure	Currently Compliant - The site is bunded and impermeable, all rainwater on site will be directed to bunds and then pumped to the treatment process to prevent emissions off site.
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	Currently Complaint - The site is regularly checked for leaks and this is documented. All wastes received are stored above ground. Underground components are minimised and restricted to sumps.
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	Currently Complaint - The site has a large buffer capacity to allow for waste during other than normal operations.

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20	**Treat waste water using a combination of:**		
	Preliminary, primary and general treatment		
	a.	Equalisation	Complaint in the Future - The site is currently undertaking an effluent improvement project to investigate the best method for improving effluent quality. As such it is not possible currently for the site to comment on the emissions levels of the plant. The site proposes to carry out a full review and gap analysis once the new system is installed and the impact on the AELs is known.
	b.	Neutralisation	
	c.	Physical separation	
	Physico-chemical treatment		
	d.	Adsorption	As above.
	e.	Distillation/rectification	
	f.	Precipitation	
	g.	Chemical oxidation	
	h.	Chemical reduction	
	i.	Evaporation	
	j.	Ion exchange	
	k.	Stripping	
	Biological treatment		
	l.	Activated sludge process	As above.
	m.	Membrane bioreactor	
	Nitrogen removal		

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	n.	Nitrification/denitrification (where biological treatment used)	As above.
	Solids removal		
	o.	Coagulation and flocculation	As above.
	p.	Sedimentation	
	q.	Filtration (sand, micro, ultra)	
	r.	Flotation	
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l) *Table 6.1 and its supporting notes. Monitoring requirements are outlined in BAT 7*		
	TOC	10.0-60 10-100 for water-based liquid waste	Not Applicable – The site does not discharge direct to a receiving waterbody.
	COD (TOC is preferred)	30-180 30-300 for water-based liquid waste	
	Suspended solids	5.0-60	
	HOI	0.5-10 applying to specific waste treatments	
	Total N	1-25 for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	
	Total P	0.3-2 for biological treatment	

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		1-3 for water-based liquid waste	
	Phenol	0.05-0.2 for waste oil re-refining and physio-chemical treatment of waste with CV 0.05-0.3 for water-based liquid waste	As above.
	Free CN-	0.02-0.1 for water-based liquid waste	
	AOX	0.2-1 for water-based liquid waste	
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05	
	Cd	0.01-0.05	
	Cr	0.01-0.15	
	Cu	0.05-0.5	
	Pb	0.05-0.1	
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	
	Cd	0.01-0.1	
	Cr	0.01-0.3	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	Hexavalent Cr [Cr(VI]	0.01-0.1	As above.
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
	BAT-AELs for INDIRECT discharges to a receiving waterbody (mg/l) *Table 6.2 and its supporting notes. Monitoring requirements are outlined in BAT 7*		
	HOI	0.5-10 applying to specific waste treatments	Complaint in the Future - The site is currently undertaking an effluent improvement project to investigate the best method for improving effluent quality. As such it is not possible currently for the site to comment on the emissions levels of the plant. The site proposes to carry out a full review and gap analysis once the new system is installed and the impact on the AELs is known.
	Free CN-	0.02-0.1 for water-based liquid waste	
	AOX	0.2-1 for water-based liquid waste	
	Metals & Metalloids – specific waste treatments as listed in Table 6.2		
	As	0.01-0.05	
	Cd	0.01-0.05	
	Cr	0.01-0.15	
	Cu	0.05-0.5	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	Pb	0.05-0.1	As above.
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	
	Cd	0.01-0.1	
	Cr	0.01-0.3	
	Hexavalent Cr [Cr(VI]	0.01-0.1	
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
EMISSIONS FROM ACCIDENTS AND INCIDENTS			

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
21	**Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use <u>ALL</u> of the following:**		
	a.	Protection measures – see examples	Currently Compliant – The site has a CCTV system, fences, 24 hour monitoring to prevent malevolent acts, fire detection system and sulphide monitors for explosion protection, DSEAR assessment and control equipment in positive pressure atmosphere for emergency purposes.
	b.	Management of incidental or accidental emissions	Currently Compliant - Spill procedure and accident management plans are in place to manage emissions from accidents and incidents, there are bunds to protect the environment from spills and contain firewater.
	c.	Incident/accident registration and assessment system – see examples	Currently Compliant – The site has a computer system (Q Pulse) which records all accidents, incidents and near misses and also manages the outcomes and tasks as a result.
MATERIAL EFFICIENCY			
22	**Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders**		Currently Compliant – As an example the site uses waste acidic and alkali material to adjust the pH of the tanks and treat the waste to minimise raw material consumption. The site also uses iron rich galvanising acid to precipitate metals out of solution which is brought in as a waste to minimise raw material consumption.

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ENERGY EFFICIENCY			
23	**Use energy efficiently by using <u>both</u> of the following techniques:**		
	a.	Energy efficiency plan	Currently Compliant – Energy consumption is measured on a monthly basis and review this as kWh/tonne of waste processed. Periodic reviews are carried out on what improvements could be made to increase energy efficiency.
	b.	Energy balance record	Not Applicable – The site does not generate energy.
REUSE OF PACKAGING			
24	**Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)**		Currently Compliant – Re-use of packaging is undertaken where possible and where re-use is not possible packaging is washed and recycled (metal and plastic recycling). The site office also maintains a number of recycling streams such as paper, plastic and metal.
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 <u>AND</u> using one or a combination of the following techniques:**		

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	a.	Cyclone – see S6.1	Not Applicable.
	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*		
	Dust	2.0-5.0	Not Applicable.
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.
	(b)	Remove dangerous items from waste inputs and dispose of them in a safe manner	
	(c)	Treatment of containers accompanied by a declaration of cleanliness	
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.

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	b.	Pressure relief dampers	Not Applicable.
	c.	Pre-shredding (device)	
28	**Use energy efficiently by keeping the shredder feed stable**		
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 AND BAT14h AND technique a. AND ONE OR BOTH of techniques b. and c.**		
	a.	Optimised removal and capture of refrigerants and oils	Not Applicable.
	b.	Cryogenic condensation	
	c.	Adsorption	
	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	Not Applicable.
	CFCs	0.5-10	
30	**Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use EITHER of the following techniques:**		
	a.	Inert atmosphere e.g. N2	Not Applicable.
	b.	Forced ventilation	
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
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.
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	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	Not Applicable.
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:**		
	Equipment is enclosed, under negative pressure and connected to a LEV system		Not Applicable.
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		
	Monitoring of waste gas treatment efficiency		
	Mercury levels measured at least weekly within treatment and storage areas		
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm3)		

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	Table 6.6. Monitoring requirements are outlined in BAT 8		
	Hg	2.0-7.0	Not Applicable.
	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**		Not Applicable.
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	Not Applicable.
	b.	Biofilter – see S6.1	
	c.	Fabric filter – see S6.1.	
	d.	Thermal oxidation – see S6.1	
	e.	Wet scrubbing – see S6.1	
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the biological treatment of waste (mg/Nm3) (ou_E/m3) *Table 6.7 and its supporting notes. Monitoring requirements are outlined in BAT 8*		
	NH3	0.3-20	Not Applicable.
	Odour	200-1000	
	Dust	2.0-5.0	

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	TVOC	5.0-40	Not Applicable.
35	**Reduce the generation of waste water and reduce water usage by using <u>ALL</u> of the following:**		
	a.	Segregation of water streams (see also BAT 19f)	Not Applicable.
	b.	Water recirculation	
	c.	Minimisation of the generation of leachate	
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.
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		
	Aeration of the windrow		
	Windrow porosity, height and width		
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.
	b.	Adaptation of operations to the meteorological conditions	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
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:**	
	Implement a manual and/or automatic monitoring system to:	
	Ensure a stable digester operation	Not Applicable.
	Minimise operational difficulties and associated odour emissions	
	Provide sufficient early warning of system failures	
	Windrow porosity, height and width	
	Monitoring and/or control of key waste and process parameters – examples below:	
	pH and alkalinity of the digester feed	Not Applicable.
	Digester operating temperature	
	Hydraulic and organic loading rates of the digester feed	
	Volatile fatty acids and NH3 concentrations within digester & digestate	
	Biogas quantity, composition (e.g. H2S) and pressure	
	Liquid and foam levels in the digester	
MECHANICAL BIOLOGICAL TREATMENT (MBT) OF WASTE		
39	**Reduce emissions to air. Generally applicable to new plants, existing plants may have layout constraints. Use <u>BOTH</u> 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 *{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}*
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)	Not Applicable.
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	
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.**		
	Monitoring the waste input		
	Content of organics, oxidising agents, metals, salts, odorous compounds		Not Applicable.
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water		
41	**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.
	b.	Biofilter – see S6.1	
	c.	Fabric filter – see S6.1.	
	d.	Wet scrubbing – see S6.1	
	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) *Table 6.8. Monitoring requirements are outlined in BAT 8*		

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	Dust	2.0-5.0	Not Applicable.
RE-REFINING OF WASTE OIL			
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.
43	**Reduce quantity of waste sent for disposal by using <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Material recovery e.g. organic residues in asphalt products	Not Applicable.
	b.	Energy recovery	
44	**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.
	b.	Thermal oxidation – see S6.1	
	c.	Wet scrubbing – see S6.1	
	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			

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45	**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.
	b.	Cryogenic condensation – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
REGENERATION OF SPENT SOLVENTS			
46	**Improve overall environmental performance by using <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Material recovery (by evaporation from distillation residues)	Not Applicable.
	b.	Energy recovery e.g. using distillation residues	
47	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using <u>a combination of</u> the following techniques:**		
	a.	Recirculation of process off-gases in a steam boiler. Avoid generating PCBs and/or PCDD/Fs	Not Applicable.
	b.	Adsorption – see S6.1	
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	
	d.	Condensation or cryogenic condensation	

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	e.	Wet scrubbing – see S6.1	Not Applicable.
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
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)			
	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) *Table 6.9 and its supporting note. Monitoring requirements are outlined in BAT 8*		
	TVOC	5.0-30	Not Applicable.
THERMAL TREATMENT OF SPENT ACTIVATED CARBON, WASTE CATALYSTS AND EXCAVATED CONTAMINATED SOIL			
48	**Improve overall environmental performance by using <u>ALL</u> of the following techniques:**		
	a.	Heat recovery from the furnace off-gas e.g. for preheating combustion air or steam generation	Not Applicable.

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	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	Not Applicable.
	c.	Process-integrated techniques to reduce emissions to air – see examples	
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.
	b.	Electrostatic precipitator (ESP) – see S6.1	
	c.	Fabric filter – see S6.1	
	d.	Wet scrubbing – see S6.1	
	e.	Adsorption – see S6.1	
	f.	Condensation – see S6.1	
	g.	Thermal oxidation – see S6.1	
	Note supporting text for BAT 49g (thermal oxidation) *Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.*		
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:**		

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	a.	Adsorption – see S6.1	Not Applicable.
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
	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.
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	
	c.	Optimised equipment cleaning and drainage – see examples	
	d.	Control and monitoring of emission to air – see examples	
	e.	Disposal of waste treatment residues – see examples	
	f.	Recovery of solvent when solvent washing is used	
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
TREATMENT OF WATER-BASED LIQUID WASTE			

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
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	Currently Compliant – Monitoring is undertaken on the COD levels of the waste streams accepted to site and as part of the pre-acceptance, the site tests to mimic the reduction of COD expected during treatment in the plant. BOD of the trade effluent has been carried out.
	Feasibility of emulsion breaking e.g. lab testing	Currently Compliant – Feasibility of emulsion breaking is assessed by acidifying samples with HCl and centrifuging. FOG (fats/ oil/ greases) will separate as a top layer. Samples with organic layers/ FOGs are not accepted for treatment.
53	**Reduce emissions to air of HCl, NH3 and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**	
	a. Adsorption – see S6.1	Compliant in the Future – The sites uses a wet scrubbing system to abate gases from tanks and the general plant. Please see BAT 8 where monitoring compliance and so applicability and compliance with limits will be assessed and reported on.
	b. Biofilter – see S6.1	
	c. Thermal oxidation – see S6.1.	
	d. Wet scrubbing – see S6.1	
	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*	

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 ***{include brief summary where compliant, and more details where currently not but will be or where installation will not be compliant}***
	HCl	1.0-5.0	As above.
	TVOC	3.0-20	

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

Not applicable.