Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – Enviroparks (Wales) Limited

We have decided to issue a Natural Resources Wales initiated variation for Hirwaun Materials Recovery Facility on Ninth Avenue, Hirwaun Industrial Estate, Hirwaun operated by Enviroparks (Wales) Limited.

The permit number is EPR/WB3490HQ.

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, prior to operations commencing.

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 Hirwaun Materials Recovery Facility against the published BAT conclusions for Waste Treatment.
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions.

Assessment of Hirwaun Materials Recovery Facility against the published BAT conclusions for Waste Treatment

1. Our decision

We have issued a variation, which will allow Enviroparks (Wales) 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 17 October 2014, 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, additional pre-operational measures have been included to bring the site up to standard prior to operations commencing.

2. The legal framework

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

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

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

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

3. How we reached our decision

Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 on 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 operations commence or before 17 August 2022, which will 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, Enviroparks (Wales) 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.

- Where their permitted activity involves the use, production, storage or release of a priority hazardous substances and any other relevant substances, as defined by the Water Framework Directive, Enviroparks (Wales) 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 an operator proposed that they were not intending to meet a BAT standard, that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61(1) Notice requested that the operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

A BAT assessment to support a comprehensive response to each item within the Schedule 61(1) Notice was not provided.

As the site is not yet Operational, discussions took place in November 2019 between Natural Resources Wales and the Operator. An extension to the Regulation 61(1) Notice deadline was agreed to 30 October 2020, to allow more time for the Operator to provide a comprehensive response. Subsequent correspondence received on 13 August 2020 from the Operators Consultant (Environmental Visage Ltd) advised that the site was not yet operational, and that completion of a BAT assessment was still considered to be premature.

At the time of this review, the site contained a single empty building with site infrastructure only partly developed. Whilst the Operator confirmed that they did not wish to surrender their Permit, they expressed their intention for the site to progress to full development and operation in the future. The development and operational phase of the site however is still some way off, with no date set for the recommencement of the development works.

As a result of the current situation, the Operator was still unable to provide Natural Resources Wales with any accurate or detailed information as to how they will comply with the terms of the revised Waste Treatment BREF once they do begin to operate, other than to confirm that they will be entirely compliant with relevant requirements in

future. Natural Resources Wales agree that a full BAT assessment at this time would be deemed premature.

Natural Resources Wales have thus updated the permit to include a series of additional pre-operational measures to ensure that the requirements specified within the Regulations 61(1) Notice issued in April 2019 are fully complied with prior to Operations commencing on site.

Enviroparks (Wales) Limited has made no request for any derogation. The operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 61(1) Notice correspondence 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 a Commission Implementing Decision ((EU 2018/1447) in the Official Journal of the EU on 17 August 2018. There are 53 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.

4. Changes we have made

Pre-operational measures

As the site is not yet operational and a comprehensive response to the Regulation 61(1) Notice was not provided, we consider that we need to set a number of additional pre-operational measures to ensure each item listed within the Notice is complied with prior to site operations commencing. These conditions are set out below and are to be referenced within the permit as pre-operational measures. We are using these conditions to require the operator to provide Natural Resources Wales with details that need to be established prior to operations commencing. As the permit already contained several pre-operational measures, the additional measures start at pre-operational measure (POM) 4 to 6.

Reference	Pre-operational measures
POM 4	At least six calendar months before the commencement of operation the operator shall submit for approval a BAT Assessment of the permitted activities against the revised Best Available Techniques (BAT) Reference Document (BRef) for Waste Treatment published on the 17 August 2018 in the Official Journal of the European Union. The Operator shall describe how operations meet each of the relevant the standards.
POM 5	At least six calendar months before the commencement of operation the operator shall submit for approval a baseline report containing information necessary to determine the current state of soil and groundwater contamination; or Provide a summary report referring to information previously submitted where you are satisfied that such information represents the current state of soil and groundwater contamination; so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation of activity.
POM 6	At least six calendar months before the commencement of operation the operator shall submit for approval information 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 the Operator is to carry out the following assessments: – Screening tests for priority hazardous pollutants and any other relevant priority hazardous substances. – For any substance which is not screened out by the screening tests you will need to carry out modelling, as described in the risk assessment guidance "Surface water pollution risk assessment for your environmental permit". You must provide us with the results from the emissions monitoring, the results from the screening tests and the results from any modelling.

The pre-operational measures mirror the actions described within the Regulation 61(1) Notice issued to the Operator on 5 April 2019. As the site is not yet Operational, the Operator will need to comply with the Best Available Techniques (BAT) Reference Document (BRef) for Waste Treatment prior to operations commencing.

Improvement Conditions

We have not set improvement conditions as the site is pre-operational therefore pre-operational measures have been set instead to ensure the site meets BAT prior to operations commencing.

Operational Changes

As part of this review, the permit has been consolidated to reflect changes made through earlier variations. In addition to bringing the permit in line with our modern regulatory template, there have been a number of other operational changes made to the permit. These are summarised below:

- The Site Name has been amended to “Hirwaun Materials Recycling Facility”. This is to ensure there is a clear distinction between the Operator’s company name and the name of the facility itself;
- The Registered Company Address as listed on Companies House was changed from 1st Floor Tiverton Chambers Lion Street Abergavenny NP7 5PN to First Floor Offices Park Chambers 10 Hereford Road Abergavenny Monmouthshire NP7 5PR on 9 October 2020. The permit has been updated to reflect the new address;
- The Introductory Note has been updated to remove reference to the previous Operator;
- All prior references to a point source emission to air has been removed from the permit following confirmation received from the Operator that there as none;
- The Site Installation Boundary Plan within Schedule 7 of the Permit has been updated to remove reference to the previous Operators Name, the permit boundary line has been changed to blue to make it more easily identifiable on the plan, as well as include reference to existing point source emissions; and
- Reporting Requirements referenced within Schedule 4 have been updated to bring the permit in line with our modern permit template.

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 will need to carry out the following assessments:

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

As this assessment has yet to be completed, a pre-operational measure has been added to the permit (POM 6) to ensure this work is undertaken and submitted to Natural Resources Wales for approval prior to operations commencing.

Relevant parameters, limits, reference periods, monitoring frequencies and monitoring standard methodologies for Table S3.3 are to be agreed with NRW upon completion of pre-operational measure (POM4). POM4 requires the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall describe how operations meet each of the *relevant* standards within BAT conclusion 7.

Release point	Parameter	Limit/ BAT AEL
F1 on site plan in Schedule 7 – release of wastewater to sewer in accordance with Dŵr Cymru Welsh Water Trade Effluent consent	To be agreed upon completion of pre-operational measure 4[Note 1]	To be agreed upon completion of pre-operational measure 4[Note 1]

Note 1: Note 1: The monitoring of parameters and limits to be set are to be agreed if substances are identified as relevant following completion of the waste water inventory required by BAT 3 of the Waste Treatment BREF Document (EU 2018), to be provided as part response to pre-operational measure 4 by the operator.

Emissions to Water – Article 15(4) Derogations

No derogations.

Emissions to Air

As detailed above, all previous references to point source emissions to air from ventilation vent(s) / dust extraction vent(s) associated with the building used to store waste have been removed from the permit, as the Operator has advised that the facility does not have any point source emissions to air.

Emissions to Air – Article 15(4) Derogations

No derogations.

Other IED BREFs relevant to the permit review

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

5. Conclusion

We consider that the revised BREF and its BAT-AELs provide the opportunity to consider further environmental improvements to the pre-operational site.

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 will be achieving all relevant BAT prior to commencing Operations.

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
OVERALL ENVIRONMENTAL PERFORMANCE			
1	**Environment Management System (EMS) – <u>ALL</u> of the following:**		
	I.	Management commitment	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 1 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 1.
	II.	Environmental policy development including CI of performance	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	As above
	IV.	***Implementation of procedures***	
		(a) Structure & responsibility	As above
		(b) Recruitment, training, awareness & competence	As above
		(c) Communication	As above
		(d) Employee involvement	As above
		(e) Documentation	As above
		(f) Effective process control	As above
		(g) Maintenance programmes	As above
		(h) Emergency preparedness & response	As above
		(i) Safeguarding compliance with environmental legislation	As above
	V.	***Checking performance and taking corrective action***	
		(a) Monitoring & measurement	As above
		(b) Corrective and preventive action	As above
		(c) Maintenance of records	As above
		(d) Independent (where practicable) internal or external EMS auditing	As above
	VI.	Senior management review of EMS	As above
	VII.	Following development of cleaner technologies	As above

BATc number			Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	VIII.		Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	As above
	IX.		Regular sectoral bench marking	As above
	X.		Waste stream management (BAT 2)	As above
	XI.		Inventory of wastewater & waste gas streams (BAT 3)	As above
	XII.		Residues Management Plan – S6.5	As above
	XIII.		Accident Management Plan – S6.5	As above
	XIV.		Odour Management Plan (BAT 12)	As above
	XV.		Noise & Vibration Management Plan (BAT 17)	As above
2	**Improving overall environmental performance – <u>ALL</u> of the following:**			
	a.		Set up and implement waste characterisation & pre-acceptance procedures	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 2 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 2.
	b.		Set up and implement waste acceptance procedures	As above
	c.		Set up and implement a waste tracking system & inventory	As above
	d.		Set up and implement an output quality management system	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	e.	Ensure waste segregation	As above
	f.	Ensure waste compatibility prior to mixing or blending	As above
	g.	Sort solid incoming waste – S6.4	As above
3	**Establish and maintain a wastewater and waste gas inventory as part of the EMS - <u>ALL</u> of the following:**		
	Information on characteristics of waste and waste treatment processes		
	(i)(a)	simplified process flow sheets showing emission sources	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 3 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 3. Relevant parameters, limits, reference periods, monitoring frequencies and monitoring standard methodologies are to be agreed upon completion of POM4.
	(i)(b)	Process-integrated and wastewater/waste gas treatment descriptions including performance	As above
	Information on characteristics of wastewater streams		
	(ii)(a)	*Mean and variability of:*	
		Flow	As above
		pH	As above
		Temperature	As above
		Conductivity	As above
	(ii)(b)	*Mean concentration, load and variability of:*	

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
		Total suspended solids	As above
		COD/TOC	As above
		Nitrogen species	As above
		Phosphorous	As above
		Metals	As above
		Priority substances/micropollutants	As above
		Any other relevant compounds	As above
	(ii)(c)	*Bioeliminability data (see BAT 52):*	
		BOD	As above
		BOD to COD ratio	As above
		Zahn-Wellens test	As above
		Biological inhibition potential	As above
	Information on characteristics of waste gas streams		
	(iii)(a)	*Mean and variability of:*	
		Flow	As above
		temperature	As above
	(iii)(b)	*Mean concentration, load and variability of relevant substances:*	
		Organic compounds	As above
		POPs e.g. PCBs	As above
		Any other relevant compounds	As above
	(iii)(c)	Flammability	As above
		Lower and Higher Explosive Limits	As above

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
		Reactivity	As above
	(iii)(d)	*Presence of other substances that may affect the gas treatment system or plant safety:*	
		O2	As above
		N2	As above
		Water vapour	As above
		Dust	As above
4	**Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:**		
	a.	Optimised storage location	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 4 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 4.
	b.	Adequate storage capacity	As above
	c.	Safe storage operation	As above
	d.	Separate area for storage & handling of packaged hazardous waste	As above
5	**Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:**		
	Carried out by competent staff		**Compliant in the future**

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
		A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 5 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 5.
	Duly documented, validated and verified	As above
	Spill prevention, detection and mitigation measures	As above
	Take precautions when mixing or blending wastes	As above
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	As above
MONITORING		
	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
6	Wastewater flow	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 6 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 6.

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
	pH	As above
	Temperature	As above
	Conductivity	As above
	BOD	As above
	Other process parameters	As above
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	As above
	Final treatment inlet	As above
	Discharge point (to the environment)	As above
	Other location	As above
7	Monitoring emissions to water (refer to table) Monitoring parameters depend on waste treatment process(es) involved	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 7 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 7. Relevant parameters, limits, reference periods, monitoring frequencies and monitoring standard methodologies are to be agreed upon completion of POM4.
8	Monitoring emissions to air (refer to table) Monitoring parameters depend on waste treatment process(es) involved	**Compliant in the future** The Operator has advised that the site does not have any channelled emissions to air from the facility. All previous references to point source emissions to air have been removed from the permit.

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
			A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 8 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 8.
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 9 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 9.
	b	Emissions factor calculation	As above
	c	Mass balance calculation	As above
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		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 10 is relevant and if so, describe how

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
		operations meet each of the relevant standards within BAT conclusion 10.
	Use equivalent methods e.g. ISO / national / international monitoring standards	As above
11	**Annual monitoring for:**	
	- **Water, energy and raw materials**	**Compliant in the future** Performance parameters are included within Table S4.4 of the permit and will be included within the updated reporting forms issued as part of permit variation to ensure compliance with BAT conclusion 11.
	- **Generation of residues and wastewater**	**Compliant in Future** Additional performance parameters have been included within Table S4.4 of the permit and will be included within the updated reporting forms issued as part of permit variation to ensure compliance with BAT conclusion 11.
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall

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
				confirm if BAT conclusion 12 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 12.
	Protocol for conducting odour monitoring (BAT 10)			As above
	Protocol for response to odour incidents/complaints			As above
	Odour prevention and reduction programme			As above
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)	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 13 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 13.
	b.		Use chemical treatment (N/A if desired output is hampered)	As above
	c.		Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.	As above
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall

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
			confirm if BAT conclusion 14 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 14.
	b.	Select and use high-integrity equipment – see examples	As above
	c.	Corrosion prevention – see examples	As above
	d.	Containment, collection and treatment of diffuse emissions – see examples	As above
	e.	Dampening (with water or fog)	As above
	f.	Maintenance – see examples	As above
	g.	Cleaning of waste treatment and storage areas – see examples	As above
	h.	Leak Detection and Repair (LDAR) programme for organics – S6.2	As above
15	**Use flaring only for safety reasons or non-routine operating conditions (OTNOC). Use <u>both</u> of the following:**		
	a.	Correct plant design – see examples	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 15 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 15.
	b.	Plant management including gas system balancing and advanced process control	As above
16	**Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:**		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	a.	Correct design of flaring devices – see examples	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 16 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 16.
	b.	Monitoring and recording as part of flare management – see examples	As above
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 17 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 17.
	II.	Noise and vibration monitoring plan/protocol	As above
	III.	Noise & vibration complaint response plan/protocol	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	IV.	Noise and vibration reduction programme	As above
18	**Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:**		
	a.	Appropriate location of equipment and buildings	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 18 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 18.
	b.	Operational measures – see examples	As above
	c.	Low-noise equipment – see examples	As above
	d.	Noise & vibration control equipment – see examples	As above
	e.	Noise attenuation – see examples	As above
EMISSIONS TO WATER			
19	**Optimise water consumption, reduce wastewater 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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall

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
			confirm if BAT conclusion 19 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 19.
	b.	Water recirculation	As above
	c.	Impermeable surface	As above
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	As above
	e.	Roofing of waste storage and treatment areas	As above
	f.	Segregation of water streams (being mindful of existing plant constraints)	As above
	g.	Adequate drainage infrastructure	As above
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	As above
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	As above
20	**Treat wastewater using a combination of:**		
	Preliminary, primary and general treatment		
	a.	Equalisation	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 20 is relevant and if so, describe how

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
			operations meet each of the relevant standards within BAT conclusion 20.
	b.	Neutralisation	As above
	c.	Physical separation	As above
	Physico-chemical treatment		
	d.	Adsorption	As above
	e.	Distillation/rectification	As above
	f.	Precipitation	As above
	g.	Chemical oxidation	As above
	h.	Chemical reduction	As above
	i.	Evaporation	As above
	j.	Ion exchange	As above
	k.	Stripping	As above
	Biological treatment		
	l.	Activated sludge process	As above
	m.	Membrane bioreactor	As above
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	As above
	Solids removal		
	o.	Coagulation and flocculation	As above
	p.	Sedimentation	As above
	q.	Filtration (sand, micro, ultra)	As above

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
	r.	Flotation	As above
	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	As above
	COD (TOC is preferred)	30-180 30-300 for water-based liquid waste	As above
	Suspended solids	5.0-60	As above
	HOI	0.5-10 applying to specific waste treatments	As above
	Total N	1-25 for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	As above
	Total P	0.3-2 for biological treatment 1-3 for water-based liquid waste	As above
	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	As above
	AOX	0.2-1 for water-based liquid waste	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05	As above
	Cd	0.01-0.05	As above
	Cr	0.01-0.15	As above
	Cu	0.05-0.5	As above
	Pb	0.05-0.1	As above
	Ni	0.05-0.5	As above
	Hg	0.5-5	As above
	Zn	0.1-1	As above
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	As above
	Cd	0.01-0.1	As above
	Cr	0.01-0.3	As above
	Hexavalent Cr [Cr(VI]	0.01-0.1	As above
	Cu	0.05-0.5	As above
	Pb	0.05-0.3	As above
	Ni	0.05-1	As above
	Hg	1.0-10	As above
	Zn	0.1-2	As above

BATc number	Summary of BAT Conclusion requirement		Status/comment **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	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	As above
	Free CN-	0.02-0.1 for water-based liquid waste	As above
	AOX	0.2-1 for water-based liquid waste	As above
	Metals & Metalloids – specific waste treatments as listed in Table 6.2		
	As	0.01-0.05	As above
	Cd	0.01-0.05	As above
	Cr	0.01-0.15	As above
	Cu	0.05-0.5	As above
	Pb	0.05-0.1	As above
	Ni	0.05-0.5	As above
	Hg	0.5-5	As above
	Zn	0.1-1	As above
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	As above
	Cd	0.01-0.1	As above
	Cr	0.01-0.3	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Hexavalent Cr [Cr(VI]	0.01-0.1	As above
	Cu	0.05-0.5	As above
	Pb	0.05-0.3	As above
	Ni	0.05-1	As above
	Hg	1.0-10	As above
	Zn	0.1-2	As above
EMISSIONS FROM ACCIDENTS AND INCIDENTS			
21	**Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use <u>ALL</u> of the following:**		
	a.	Protection measures – see examples	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 21 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 21.
	b.	Management of incidental or accidental emissions	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Incident/accident registration and assessment system – see examples	As above
MATERIAL EFFICIENCY			
22	**Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders**		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 22 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 22.
ENERGY EFFICIENCY			
23	**Use energy efficiently by using <u>both</u> of the following techniques:**		
	a.	Energy efficiency plan	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 23 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 23.

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.	Energy balance record	As above
REUSE OF PACKAGING			
24	**Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)**		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 24 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 24.
MECHANICAL TREATMENT OF WASTE (GENERAL BAT)			
25	**Reduce emissions to air of dust, particulate-bound metals, PCDD/F and dioxin-like PCBs by applying BAT 14d AND using one or a combination of the following techniques:**		
	a.	Cyclone – see S6.1	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 25 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 25.

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.	Fabric filter – see S6.1	As above
	c.	Wet scrubbing – see S6.1	As above
	d.	Water injection into the shredder	As above
	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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 25 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 25.
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 26 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 26.

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)	Remove dangerous items from waste inputs and dispose of them in a safe manner	As above
	(c)	Treatment of containers accompanied by a declaration of cleanliness	As above
27	**Prevent deflagrations and reduce emissions from deflagrations. Use technique a. AND ONE OR BOTH of techniques b. and c.**		
	a.	Deflagration management plan with reduction programme, incident review and response protocol	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 27 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 27.
	b.	Pressure relief dampers	As above
	c.	Pre-shredding (device)	As above
28	**Use energy efficiently by keeping the shredder feed stable**		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 28 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 28.
MECHANICAL TREATMENT OF WEEE CONTAINING VFCS AND/OR VHCS			

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
29	**Techniques to prevent, or where not practicable reduce emissions of organic compounds to air. Apply BAT 14d <u>AND</u> BAT14h <u>AND</u> technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.**		
	a.	Optimised removal and capture of refrigerants and oils	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 29 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 29.
	b.	Cryogenic condensation	As above
	c.	Adsorption	As above
	BAT-AELs for channelled TVOC and CFC emissions to air from treatment of WEEE containing VFCs and/or VHCs (mg/Nm3) *Table 6.4. Monitoring requirements are outlined in BAT 8*		
	TVOC	3.0-15	As above
	CFCs	0.5-10	As above
30	**Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use <u>EITHER</u> of the following techniques:**		
	a.	Inert atmosphere e.g. N2	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 30 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 30.
	b.	Forced ventilation	As above

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
31	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 31 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 31.
	b.	Biofilter – see S6.1	As above
	c.	Thermal oxidation – see S6.1	As above
	d.	Wet scrubbing – see S6.1	As above
	BAT-AEL for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value (mg/Nm3) *Table 6.5 and its supporting note. Monitoring requirements are outlined in BAT 8*		
	TVOC	10.0-30.0	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 31 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 31.

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
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		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 32 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 32.
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		As above
	Monitoring of waste gas treatment efficiency		As above
	Mercury levels measured at least weekly within treatment and storage areas		As above
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm3) *Table 6.6. Monitoring requirements are outlined in BAT 8*		
	Hg	2.0-7.0	As above
BIOLOGICAL TREATMENT OF WASTE (GENERAL BAT)			

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
33	**Reduce odour emissions and improve overall environmental performance by selecting the waste input (to ensure its suitability for biological treatment). See also BAT 2**		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 33 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 33.
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 34 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 34.
	b.	Biofilter – see S6.1	As above
	c.	Fabric filter – see S6.1.	As above
	d.	Thermal oxidation – see S6.1	As above
	e.	Wet scrubbing – see S6.1	As above
	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	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Odour	200-1000	As above
	Dust	2.0-5.0	As above
	TVOC	5.0-40	As above
35	**Reduce the generation of wastewater and reduce water usage by using <u>ALL</u> of the following:**		
	a.	Segregation of water streams (see also BAT 19f)	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 35 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 35.
	b.	Water recirculation	As above
	c.	Minimisation of the generation of leachate	As above
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		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall

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
				confirm if BAT conclusion 36 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 36.
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)			As above
	Aeration of the windrow			As above
	Windrow porosity, height and width			As above
37	**Reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps. Use <u>ONE OR BOTH</u> of the following techniques:**			
	a.		Use of semi-permeable membrane covers	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 37 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 37.
	b.		Adaptation of operations to the meteorological conditions	As above
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:			

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
	Ensure a stable digester operation	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 38 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 38.
	Minimise operational difficulties and associated odour emissions	As above
	Provide sufficient early warning of system failures	As above
	Windrow porosity, height and width	As above
	Monitoring and/or control of key waste and process parameters – examples below:	
	pH and alkalinity of the digester feed	As above
	Digester operating temperature	As above
	Hydraulic and organic loading rates of the digester feed	As above
	Volatile fatty acids and NH3 concentrations within digester & digestate	As above
	Biogas quantity, composition (e.g. H2S) and pressure	As above
	Liquid and foam levels in the digester	As above
	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
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 39 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 39.
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	As above
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE			
40	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Content of organics, oxidising agents, metals, salts, odorous compounds		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 40 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 40.
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water		As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 41 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 41.
	b.	Biofilter – see S6.1	As above
	c.	Fabric filter – see S6.1.	As above
	d.	Wet scrubbing – see S6.1	As above
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the physico-chemical treatment of solid and/or pasty waste (mg/Nm3) *Table 6.8. Monitoring requirements are outlined in BAT 8*		
	Dust	2.0-5.0	As above
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		**Compliant in the future**

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
				A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 42 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 42.
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 43 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 43.
	b.		Energy recovery	As above
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 44 is relevant and if so, describe how operations meet each of the *relevant* standards within BAT conclusion 44.
	b.		Thermal oxidation – see S6.1	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Wet scrubbing – see S6.1	As above
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
45	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 45 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 45.
	b.	Cryogenic condensation – see S6.1	As above
	c.	Thermal oxidation – see S6.1	As above
	d.	Wet scrubbing – see S6.1	As above
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		
REGENERATION OF SPENT SOLVENTS			
46	**Improve overall environmental performance by using <u>ONE OR 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
	a.	Material recovery (by evaporation from distillation residues)	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 46 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 46.
	b.	Energy recovery e.g. using distillation residues	As above
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 47 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 47.
	b.	Adsorption – see S6.1	As above
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	As above
	d.	Condensation or cryogenic condensation	As above
	e.	Wet scrubbing – see S6.1	As above
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. *Monitoring requirements are outlined in BAT 8*		

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
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	As above
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	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 48 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 48.
	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Process-integrated techniques to reduce emissions to air – see examples	As above
49	**Reduce emissions to air of HCl, HF, dust and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Cyclone – see S6.1	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 49 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 49.
	b.	Electrostatic precipitator (ESP) – see S6.1	As above
	c.	Fabric filter – see S6.1	As above
	d.	Wet scrubbing – see S6.1	As above
	e.	Adsorption – see S6.1	As above
	f.	Condensation – see S6.1	As above
	g.	Thermal oxidation – see S6.1	As above
	Note supporting text for BAT 49g (thermal oxidation) *Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.*		
WATER WASHING OF EXCAVATED CONTAMINATED SOIL			

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
50	**Reduce emissions to air of dust and organic compounds from the storage, handling and washing steps by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 50 is relevant and if so, describe how operations meet each of the *relevant* standards within BAT conclusion 50.
	b.	Fabric filter – see S6.1	As above
	c.	Wet scrubbing – see S6.1	As above
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
Decontamination of equipment containing PCBs			
51	**Reduce emissions to air of PCBs and organic compounds and improve overall environmental performance by using <u>ALL</u> of the following techniques:**		
	a.	Coating of the storage and treatment areas – see examples	**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 51 is relevant and if so, describe how operations meet each of the *relevant* standards within BAT conclusion 51.

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.	Implementation of staff access rules to prevent dispersion of contamination – see examples	As above
	c.	Optimised equipment cleaning and drainage – see examples	As above
	d.	Control and monitoring of emission to air – see examples	As above
	e.	Disposal of waste treatment residues – see examples	As above
	f.	Recovery of solvent when solvent washing is used	As above
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
TREATMENT OF WATER-BASED LIQUID WASTE			
52	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Bioeliminability e.g. BOD, BOD-COD ratio, Zahn-Wellens test, biological inhibition potential		**Compliant in the future** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 52 is relevant and if so, describe how operations meet each of *the relevant standards* within BAT conclusion 52.
	Feasibility of emulsion breaking e.g. lab testing		As above

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
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** A Pre-operational Measure (POM4) has been added to the permit to require the Operator to submit a BAT assessment to NRW for approval prior to operations commencing. The assessment shall confirm if BAT conclusion 53 is relevant and if so, describe how operations meet each of the relevant standards within BAT conclusion 53.
	b.	Biofilter – see S6.1	As above
	c.	Thermal oxidation – see S6.1.	As above
	d.	Wet scrubbing – see S6.1	As above
	BAT-AELs for channelled HCl and TVOC emissions to air from the treatment of water-based liquid waste (mg/Nm3) *Table 6.10 and its supporting notes. Monitoring requirements are outlined in BAT 8*		
	HCl	1.0-5.0	As above
	TVOC	3.0-20	As above