Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – EnviroWales Limited

We have decided to issue a Natural Resources Wales initiated variation for Tafarnaubach Waste Facility in Unit 5 Tafarnaubach Waste Facility operated by EnviroWales Limited.

The permit number is EPR/GP3337KD.

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

Assessment of Tafarnaubach Waste Facility against the published BAT conclusions for Waste Treatment

1. Our decision

We have issued a variation, which will allow EnviroWales 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 24/05/2010, 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);
- 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 04/04/2019 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

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

- Describes the techniques that will be implemented before 17 August 2022, which will then ensure that operations meet the revised standard, or

- Justifies 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

- Justifies 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, EnviroWales 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. EnviroWales Limited have provided a copy of the original Site Condition Report which is still applicable.

- 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, the EnviroWales 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 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 10/10/2019 and additional information received on the 03/06/2020, 04/06/3020, 02/07/2020.

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

A detailed response was received from EnviroWales Limited. Following assessment of the Regulation 61(1) response, further information was requested from EnviroWales 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
IC4	The operator shall submit a written Fire prevention and mitigation plan to Natural Resources Wales. The Fire prevention and mitigation plan must be produced in line with the standards set out in Fire prevention and mitigation plan guidance – Waste.	08/01/2021 or otherwise agreed in writing with Natural Resources Wales
IC5	BAT 19 – Optimise water consumption, reduce waste water generation and prevent/reduce emissions to soil and water	17th February 2022 or otherwise agreed in writing with

	The operator shall submit to Natural Resources Wales information in order to evidence compliance with BAT 19 requiring the use of one or a combination of techniques: c) impermeable surface (information on how the site complies with CIRIA 736 or an equivalent engineering standard to which the surface complies together with sign off from construction by a Certified Quality Auditor) in accordance with requirements specified within BAT Conclusion 19 of the Waste Treatment BAT Conclusions (EU 2018).	Natural Resources Wales

IC4 - As per NRW's the Fire Prevention and Mitigation Guidance, if you have an environmental permit that authorises you to store combustible waste, or you have an existing permit with a permit condition requiring you to have a Fire Prevention Mitigation Plan (FPMP), you must adhere to this guidance.

Our guidance does not apply to hazardous waste storage therefore this bit of guidance cannot be used. A hazardous waste sites EMS should have a section for waste storage and fire prevention techniques and reference the relevant guidance for this. This could be the Health and Safety Executive guidance. The operator should be stating how it will store waste and prevent fires.

Administrative changes made were to the tables S2.3 and S2.4. These were in the wrong order and did not match Table S1.1 so were swapped by each other. Table S2.3 became S2.4 and S2.4 became S2.3. Schedule 4 has also been amended to include reporting an annual production/treatment of waste and performance parameters in Table S4.3 updated to reflect BAT requirements.

Opra score has changed due compliance rating change. The Opra score has changed from 60 to 45.

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 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”.

There are no discharges to water from the site other than from hygiene facilities to domestic sewer. All external surface drains in the delivery areas are blocked. There are no drains within the buildings. All access/egress points are bunded.

There are no emissions to water associated with the permitted activity.

Emissions to Water – Article 15(4) Derogations
No derogations – no emissions to water

Emissions to Air

There are no emissions to air associated with the permitted activity.

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

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 a Commission Implementing Decision ((EU 2018/1147) in the Official Journal of the EU on 10 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** EMS 567178 (ISO14001:2015); EWS-6E.01 2014. Progress at facility will be a weekly item for discussion with senior management and report prepared for discussion on a monthly basis. Conditions on site audited by senior management on a weekly basis. Senior management (Carl Green Managing Director) sets, reviews and endorses the environmental policy which complies with the requirements of the ISO14001 standard clause 5. Senior management have key responsibilities under the EMS.

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
	II.	Environmental policy development including CI of performance	**Compliant** The policy includes commitment to continuous improvement stating we will "Continuously strive to control the release of harmful substances to the environment, avoid the wasteful use of natural resources, energy and materials and be pro-active in minimising waste"
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	**Compliant** Environmental objectives and performance targets are set annually by senior management and are included in the EMS under procedure E-EP-025.
	IV.	***Implementation of procedures***	The following are procedures within the EMS
		(a) Structure & responsibility	**Compliant** (a) structure and responsibility, (Section 5.3)
		(b) Recruitment, training, awareness & competence	**Compliant** Safe working methods which staff will be trained on and signed off when completed. (b) recruitment, training, awareness and competence, (Section 7.2)
		(c) Communication	**Compliant** (c) communication, (Section 7.4)
		(d) Employee involvement	**Compliant** (d) employee involvement, (Section 5.4)
		(e) Documentation	**Compliant** Log book of site activities kept up to date. Documentation kept of activities. (e) documentation, (Section 7.5.1)
		(f) Effective process control	**Compliant** (f) effective process control, (Section 8.1)
		(g) Maintenance programmes	**Compliant**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			(g) maintenance programmes, (Section 7.1.3)
		(h) Emergency preparedness & response	**Compliant** (h) emergency preparedness and response, (Section 8.2)
		(i) Safeguarding compliance with environmental legislation	**Compliant** (i) safeguarding compliance with environmental legislation; (Section 9.1.2)
	V.	***Checking performance and taking corrective action***	Also included within the EMS are processes for:
		(a) Monitoring & measurement	**Compliant** (a) monitoring and measurement (Section 9.1)
		(b) Corrective and preventive action	**Compliant** (b) corrective and preventive action, (Section 10.2)
		(c) Maintenance of records	**Compliant** (c) maintenance of records, (Section 7.5.1)
		(d) Independent (where practicable) internal or external EMS auditing	**Compliant** (d) independent auditing (Section 9.2)
	VI.	Senior management review of EMS	**Compliant** Progress at facility will be a weekly item for discussion with senior management and report prepared for discussion on a monthly basis. Conditions on site audited by senior management on a weekly basis. The EMS is reviewed through the Management Review procedure annually for its continued effectiveness (Section 9.3)
	VII.	Following development of cleaner technologies	**Compliant** Through the continual improvement culture of the organisation, where cleaner or more effective recycling technologies are identified, these are evaluated accordingly. Sufficient for this type of site.

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	**Compliant** Where new plant is being designed, the environmental impact during operation and at end of life is considered within the design stage. This has been assessed within the EPR permit for EnviroWales EP3230BW for the slag processing building at the Rassau site, which will be built towards the end of 2020 and which will eventually replace the Tafarnaubach site for processing of furnace slag.
	IX.	Regular sectoral bench marking	**Compliant** Review of performance is carried out as part of the Management Review – however, the slag crushing and bagging process is a simple system which is not easily benchmarked. Sufficient for this type of site.
	X.	Waste stream management (BAT 2)	**Compliant** Waste stream management is controlled by procedures within the management system (see BAT 2 response for details)
	XI.	Inventory of waste water & waste gas streams (BAT 3)	**N/A** See BAT 3 response – there are no industrial waste water or gas streams from this site.
	XII.	Residues Management Plan – S6.5	**Compliant** Any residues are returned to the EnviroWales site for reprocessing – these mainly consist of lead pieces entrained in the slag which are separated during crushing. See also BAT 11.
	XIII.	Accident Management Plan – S6.5	**Compliant** The Tafarnaubach site follows the EnviroWales accident plan and accident, incident & near miss investigation procedure E-EP-055.
	XIV.	Odour Management Plan (BAT 12)	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			There is no odour from this process – there is no organic matter present to decompose nor does the slag have a strong odour. The process is only carried out within the buildings and door are not permitted to be opened, only immediately when receiving skips of materials, and must be closed immediately after the skip lorry has entered the building. There is the odour condition in the permit so that if there was ever an odour issue a management plan would need to be implemented.
	XV.	Noise & Vibration Management Plan (BAT 17)	**Compliant** See response to BAT 17.
2	**Improving overall environmental performance – <u>ALL</u> of the following:**		
	a.	Set up and implement waste characterisation & pre-acceptance procedures	**Compliant** EWS-APP6.01 2014; EWS-9F.01.. The pre-acceptance procedures for the materials proposed to recycle/treat on the site is simplified to the extent that they originate from a known process and that either compositional/leachate analysis data is already available dependent upon the material. Each load from the Rassau site is accompanied by hazardous waste consignment Note and EnviroWales Waste acceptance Note. Also have details of weight, date and time and ID number. Time line included to enable accurate tracking of a load over a known distance. e.g. if transfer takes longer than 20 minutes explanation required. Analytical data relevant to slag transported to site will conform to the EnviroWales sampling protocol. Drosses are aggregated by chemical type with further analysis at site to even more finely segregate them for specific batch production runs. a. The waste has been characterised as hazardous with H code H6.1 and is not suitable for landfill in the UK under the Waste Acceptance Criteria protocols. The material is sampled at source and analysed to identify consistency of quality before being shipped into The

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			Tafarnaubach site. Each batch is accompanied by a hazardous waste consignment note that details its source and suitability, this note is presented upon arrival at the site to ensure its conformity to the system procedures and quality standards before unloading. The site only accepts this waste from one source providing a high level of traceability.
	b.	Set up and implement waste acceptance procedures	**Compliant** As above. Each and every load arriving to site must be accompanied by a haz waste consignment note and EnviroWales Waste acceptance note. Once documents checked then load its self can be physically checked to team leader's satisfaction. Any discrepancies must be verified. Clear training documented procedures will be available to staff for these activities. Each load has a unique ID number and will be visually inspected. b. A waste acceptance note is completed once the load has been verified by the pre-acceptance procedure. The load is inspected for evidence of leaks or spills during transport, any evidence of such will be recorded in the site daily log and the waste generator would be notified. The load is tipped indoors in a negative pressure environment to control any dust emissions and local extraction is used to assist clearing any dust generated. Staff operating the site are included in the company's occupational health monitoring regime and are trained in the use of appropriate PPE use. Staff are trained in safe operating procedures on the site and any machine operating licences required are held by the staff and any refresher training for the renewal of those licences is provided as required.
	c.	Set up and implement a waste tracking system & inventory	**Compliant** As above. The waste generator maintains an electronic waste tracking spreadsheet that details every load and weight of material shipped to the

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			Tafarnaubach site. The spreadsheet includes data on weight of each load and dispatch dates along with a batch number that can be traced to an on-site analysis. Each load of hazardous waste received at the site is accompanied by a hazardous waste consignment note. Records of all furnace slag waste treated and shipped from the site to its end destination is maintained both on site and at the EnviroWales site where the Trans frontier shipment documents are prepared and stored electronically and in hard copy. The staff are fully trained and where necessary licensed to carry out the activities on site and are fully aware of the hazardous nature and properties of the material. They are included on the company's occupational health surveillance regime. A fully compliant financial guarantee is in place with NRW to cover TFS shipments. A daily site survey is conducted to establish any leaks, spills or fugitive releases of the material that could cause adverse environmental impact. The findings of the audit are included on the site daily report that is issued to managers electronically and recorded in the site daily log. Any loads to be rejected for any reason are held in a quarantine area under cover on the site until decisions are made to decide what further actions are to be taken.
	d.	Set up and implement an output quality management system	**Compliant** The treatment process for the furnace slag waste is a simple two-stage operation Step1. The slag is passed through a crusher and stored in the bagging area. Step 2. The slag is fed into specialised double skin builders type bags that are weighed and sealed in preparation for shipping from site. These operations are carried out under recycled LEV systems designed for these activities, preventing emissions to atmosphere from site. A detailed

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
			inventory of material on site is maintained using the data provided by a, b and c above. Comparisons between the delivered data, processed data and final shipping data provides a firm basis for a material flow analysis of the wastes on site.
	e.	Ensure waste segregation	**Compliant** As above. Segregation of different wastes on site is achieved by clearly defined, waste-specific storage areas on site. The structure and layout of the site facilitates clear demarcation of the different waste types.
	f.	Ensure waste compatibility prior to mixing or blending	**N/A** No blending of wastes takes place on site, though the characteristics and properties of the different waste types that could potentially be held on site are well known and documented and all staff are fully aware of this information.
	g.	Sort solid incoming waste – S6.4	**Compliant** The sorting of incoming solid wastes is a very limited activity due to the consistency of waste arriving on site. Solid Lead metal is removed manually if identified following visual inspection and before crushing in the case of furnace slag. Tramp metals such as iron, steel, copper and aluminium are also removed in a similar manner. Any other solid wastes arriving on site are clearly identified by waste characterisation and pre-acceptance information so little if any separation is required. Various staff have received detailed training in separating different battery types, though that activity does not currently take place on site. Any unknown or unidentifiable materials would be sampled and analysed before being held in the quarantine area awaiting further action.
3	**Establish and maintain a waste water and waste gas inventory as part of the EMS - <u>ALL</u> of the following:**		

BATc number		Summary of BAT Conclusion requirement	Status/comment **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Information on characteristics of waste and waste treatment processes		
	(i)(a)	simplified process flow sheets showing emission sources	**N/A** No emissions. No waste water and no waste gas. Though there are no channelled emission points from the facility, monitoring against the undetected incidence of potential fugitive release is undertaken. This monitoring is in the form of daily site audits to be undertaken at the end of each day, particularly at ingress /egress points to the buildings which are by design, the most vulnerable points of the facility. These points are also included in the random auditing schedule of senior management. Any evidence of release results in stopping processing until any issues identified are effectively rectified. Any evidence of contamination at these points, (and any others), is immediately cleaned up. All loose material inside the buildings is kept away from the absolute perimeter of the buildings and doorways are protected by berms that create a bund-like structure to the buildings. The integrity of these measures is audited and maintained on a daily basis and written records kept. This includes inclusion of detail on daily report that is circulated to the management team on a daily basis. Analysis can be taken of any migrant material and, if necessary, estimates as to fugitive quantities may be made.
	(i)(b)	Process-integrated and waste water/waste gas treatment descriptions including performance	**N/A** - No emissions. No waste water and no waste gas
	Information on characteristics of waste water streams		
	(ii)(a)	*Mean and variability of:*	**N/A**
		Flow	**N/A**
		pH	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		Temperature	**N/A**
		Conductivity	**N/A**
	(ii)(b)	*Mean concentration, load and variability of:*	**N/A**
		Total suspended solids	**N/A**
		COD/TOC	**N/A**
		Nitrogen species	**N/A**
		Phosphorous	**N/A**
		Metals	**N/A**
		Priority substances/micropollutants	**N/A**
		Any other relevant compounds	**N/A**
	(ii)(c)	*Bioeliminability data (see BAT 52):*	**N/A**
		BOD	**N/A**
		BOD to COD ratio	**N/A**
		Zahn-Wellens test	**N/A**
		Biological inhibition potential	**N/A**
	Information on characteristics of waste gas streams		
	(iii)(a)	*Mean and variability of:*	**N/A**
		Flow	**N/A**
		temperature	**N/A**
	(iii)(b)	*Mean concentration, load and variability of relevant substances:*	**N/A**
		Organic compounds	**N/A**
		POPs e.g. PCBs	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		Any other relevant compounds	**N/A**
	(iii)(c)	Flammability	**N/A**
		Lower and Higher Explosive Limits	**N/A**
		Reactivity	**N/A**
	(iii)(d)	*Presence of other substances that may affect the gas treatment system or plant safety:*	**N/A**
		O2	**N/A**
		N2	**N/A**
		Water vapour	**N/A**
		Dust	**N/A**
4	**Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:**		
	a.	Optimised storage location	**Compliant** All wastes are stored in specific areas within the site in order to ensure safe segregation of the different types and prevent any cross contamination. The furnace slag waste is tipped immediately adjacent to the crushing process near the rear of the building, close to recycled extraction. Waste batteries and drosses are stored in other clearly defined areas of the site when necessary, though these waste types are rarely present on site. Drosses are further contained in steel drums and batteries either in steel drums or purpose made industry standard battery bins. The slag is tipped at the rear of the building, adjacent to the first process step for that material. The batteries are sorted in situ at the storage area. Drosses are stored and not sorted or processed any further on site. Not clear if located far as technically possible from sensitive

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
			receptors but this is generally applicable to new sites. Since no emissions points either will not impose an improvement condition.
	b.	Adequate storage capacity	**Compliant** Separate storage areas, area 1- materials reception area where inspections take place. Also, dross storage area etc. Area 2 for bulk slag awaiting treatment. Separated from Area 1 by a steel section wall. Area 3 is where bulk slag will be crushed and bagged. The maximum capacities listed below; 1. Furnace slag – 7500 tonnes 2. Mixed drosses, flue dust and other solids – 5000 tonnes 3. Mixed batteries – 250 tonnes 4. Mixed plastics – 250 tonnes Will not be exceeded at any time, as per permit conditions. The site has been considered capable of dealing with these amounts of waste safely and the characteristics of the waste types, including fire are well documented and provided for. A running inventory of wastes stored on site is always available as part of the pre-acceptance, acceptance and shipping records held at both the EnviroWales and Tafarnaubach sites. Wastes will be stored for a maximum residence time of 12 months, though the processing turnover times are much shorter than this.
	c.	Safe storage operation	**Compliant** Activities on site are all done within a building. All waste storage containers and packaging are industry standard as a minimum and only good condition containers etc are used. All wastes are stored undercover indoors on stable concrete flooring.

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
	d.	Separate area for storage & handling of packaged hazardous waste	**Compliant** There is a limited number of material types stored on the site at the installation reducing the potential for cross contamination of wastes to a negligible level. The materials being stored on site have no known propensity for reactivity with each other. Different storage areas, area 1, 2 and 3. These areas are designated for the segregation of each waste type will be clearly identified on the floor plans available at all times and by signs. All staff will be trained. As mentioned above, the waste coming in to the site is well known and from a nearby site. Contaminated wastes will be marked and logged in a book. All wastes are stored, unpacked and treated in their own specific handling areas
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** Handling and transfer procedures are well developed and understood by all staff on site. They are trained in specific procedures in terms of material handling and licensed in the use of motorised materials handling equipment used. Any spills identified are reacted to immediately following the company's spill procedure. ERT, (Emergency Response Team), staff are in receipt of more detailed training in terms of spill and fire reaction. No mixing or blending of wastes takes place on the site. All wastes are transported and/or stored in suitable, good condition containers/packaging designed to minimise the risk of environmental or occupational health. Wastes not packaged correctly are rejected and placed in quarantine awaiting further action.
	Duly documented, validated and verified		**Compliant**

BATc number	Summary of BAT Conclusion requirement	Status/comment **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		As above
	Spill prevention, detection and mitigation measures	**Compliant** As above
	Take precautions when mixing or blending wastes	**Compliant** As above
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	**Compliant** Each activity/case will be risk assessed upon its own matrix.
MONITORING		
	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
	Waste water flow	**N/A - No emissions to water**
	pH	**N/A**
	Temperature	**N/A**
	Conductivity	**N/A**
6	BOD	**N/A**
	Other process parameters	**N/A**
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	**N/A**
	Final treatment inlet	**N/A**
	Discharge point (to the environment)	**N/A**
	Other location	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
7	Monitoring emissions to water (refer to table) Monitoring parameters depend on waste treatment process(es) involved		**N/A - No emissions to water**
8	Monitoring emissions to air (refer to table) Monitoring parameters depend on waste treatment process(es) involved		**N/A** - No emissions to air. Though there are no channelled emission points from the facility, monitoring against the undetected incidence of potential fugitive release is undertaken. This monitoring is in the form of daily site audits to be undertaken at the end of each day, particularly at ingress /egress points to the buildings which are by design, the most vulnerable points of the facility. These points are also included in the random auditing schedule of senior management. Any evidence of release results in stopping processing until any issues identified are effectively rectified. Any evidence of contamination at these points, (and any others), is immediately cleaned up. All loose material inside the buildings is kept away from the absolute perimeter of the buildings and doorways are protected by berms that create a bund-like structure to the buildings. The integrity of these measures is audited and maintained on a daily basis and written records kept. This includes inclusion of detail on daily report that is circulated to the management team on a daily basis Analysis can be taken of any migrant material and, if necessary, estimates as to fugitive quantities may be made.
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	**N/A** There are no solvents kept on site and no diffuse emissions of spent solvent
	b	Emissions factor calculation	**N/A**
	c	Mass balance calculation	**N/A**

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Periodically monitor odour emissions where nuisance is expected and/or has been substantiated (monitoring frequency is outlined in BAT 12)	
10	Use EN standards e.g. 13725 or 16841	**N/A** There are no expected odours from the site See BAT 12/13. Any identified will be recorded in the daily log and appropriate actions taken to identify and limit the source. Site officer confirmed no odour expected on site.
	Use equivalent methods e.g. ISO / national / international monitoring standards	**N/A** As above
	Annual monitoring for:	
11	- **Water, energy and raw materials**	**Compliant** Energy and water consumption at the site are recorded and monitored using invoices issued and wherever possible local meter readings. This data is reported annually to NRW.
	- **Generation of residues and waste water**	**N/A** There are no residues to manage. Occasionally a fine mist spray is utilised for dust control in the immediate working area. Volumes of water used are minimal and any residue is evaporated away. A monthly record of water consumption is maintained, though as already explained, water consumed on site is almost solely used for domestic purposes in terms of personal hygiene as required by the Control of Lead at Work Regulations, 2002. All waste water from these facilities is discharged via public sewer. ALL material processed is used and packaged for export from site for either further processing or permanent storage.
	EMISSIONS TO AIR	

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
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		**N/A** There is no reason to expect odours emanating from the site and to our knowledge no odour complaints have been made during the life of the plant. As stated in BAT 10 any identified odours would be recorded and appropriate actions undertaken. Odour condition in permit that states emissions should be free from odour. If odours identified NRW can request an odour management plan to be in place. Site officer happy no odour expected.
	Protocol for conducting odour monitoring (BAT 10)		**N/A** As above
	Protocol for response to odour incidents/complaints		**N/A** As above
	Odour prevention and reduction programme		**N/A** 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)	**N/A** There is no expectation of odours from the plant/site. The materials processed do not specifically generate odours that would be detectable from any nearby sensitive receptors. All activities on site are carried out indoors under a negative pressure environment with all doors closed except when transporting bagged/packaged material into the dispatch area for loading trucks/containers for transport on to their final destination. No processing of materials takes place while doors are open.

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 condition in permit that states emissions should be free from odour. If odours identified NRW can request an odour management plan to be in place.
	b.	Use chemical treatment (N/A if desired output is hampered)	**N/A**
	c.	Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.	**N/A**
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** EWS-6E.01 2014; EWS 5B.01 2014. There is a strict speed limit of 5mph on site for all vehicles. The 5 mph is a limit and not a target. All tipping activities take place indoors under controlled conditions. All operators are adequately trained.
	b.	Select and use high-integrity equipment – see examples	**Compliant** All equipment used is of industry standard and subject to a comprehensive maintenance programme.
	c.	Corrosion prevention – see examples	**Compliant** All equipment is of suitable construction and is well-maintained.
	d.	Containment, collection and treatment of diffuse emissions – see examples	**Compliant** EWS-6E.01 2014; EWS 5B.01 2014. All activities carried out indoors and under covers. Only fugitive releases would be from point of ingress and egress. Operator previously agreed to install berms along entry doors, inside buildings to contain any spill/emissions. Separate treatment area for crushing activity with plastic curtains designed to allow passage of vehicles while containing dust. HEPA filtered air recycling ventilation

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
			system. All activities take place indoors under negative pressure. Specific dust-generating activities take place under air recycling HEPA filtration LEV. All doors are closed during operation. There are no channelled emissions to air from the site. The LEV systems used is an air recycling type that returns the filtered air to within the building.
	e.	Dampening (with water or fog)	**Compliant** Nevel mist sprays are used to dampen dust where appropriate.
	f.	Maintenance – see examples	**Compliant** All equipment is subject to a rigorous maintenance programme carried out by appropriately qualified contractors.
	g.	Cleaning of waste treatment and storage areas – see examples	**Compliant** perimeter clean up time on site. Site cleanliness emphasised. A thorough cleaning programme for all equipment and processing areas is in place. Any issues are recorded in the site daily log.
	h.	Leak Detection And Repair (LDAR) programme for organics – S6.2	**Compliant** All equipment and the building structure, as the main containment, is inspected daily for any leaks. If any are found, then operations cease immediately and specialist repair contractors are contacted. The company has an established 24-hr response from these contractors. Not a site with emissions of organic compounds so measures in place appear sufficient.
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	**N/A** This is not applicable to the site as we have none of this type of equipment present

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.	Plant management including gas system balancing and advanced process control	**N/A**
16	**Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:**		
	a.	Correct design of flaring devices – see examples	**N/A**
	b.	Monitoring and recording as part of flare management – see examples	**N/A**
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** There is only one potential source of nuisance noise/vibration on site – the crushing activity. This activity is undertaken only during daytime hours. All doors are kept closed during this process. The equipment undergoes extensive planned and routine maintenance in order to ensure optimum equipment performance, including noise and vibration. Should excess noise/vibration be identified by operators, then they contact the EnviroWales maintenance engineers who have access to monitoring equipment and the skills to rectify any faults identified. Specialist contractors are also retained to react to any issues. There have been no recorded complaints concerning noise and/or vibration to our knowledge, but we would be able to identify any issues from the plant should any arise. NVMP provided. The applicability of this BAT is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected

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
			and/or has been substantiated. Noise not expected to be a nuisance, so details provided are sufficient.
	II.	Noise and vibration monitoring plan/protocol	As above
	III.	Noise & vibration complaint response plan/protocol	As above
	IV.	Noise and vibration reduction programme	As above
18	**Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:**		
	a.	Appropriate location of equipment and buildings	**Compliant** All activities that potentially could generate nuisance noise/vibrations is located at the rear of the site buildings as far as is possible away from nearby businesses and access roads.
	b.	Operational measures – see examples	**Compliant** The site activities are limited to daytime working and are carried out only with all doors closed. The equipment is subject to a thorough cleaning and maintenance programme and is only operated by fully trained and experienced staff.
	c.	Low-noise equipment – see examples	**Compliant** Only materials handling, crushing and bagging equipment is used on site and only well-maintained, modern equipment is used at any time.
	d.	Noise & vibration control equipment – see examples	**Compliant** All noise generating equipment is located to the rear of the site within insulated cladding and with drop-down screens that are intended to capture dust for the LEV system but also assist in noise reduction. The crusher has built-in anti-vibration systems that are part of the overall function of the equipment and included in maintenance programme by

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
			third party specialist contractors. No noise/vibration complaints have ever been received re: any site activities.
	e.	Noise attenuation – see examples	**Compliant** All activities are carried out indoors with all doors closed.
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	**Compliant** No emissions to water. There is very little water consumption on site due to waste management activities. By far the greatest consumption is domestic use in the showering and hygiene facilities on site. There is no waste water stream generated to any sewerage system and there is no contaminated water from site. Any water used for the nevel spray dust suppression fan evaporates naturally and does not leave the buildings. All access/egress points to the buildings are bunded to accommodate any unforeseen spills/leaks.
	b.	Water recirculation	**N/A** No waste water
	c.	Impermeable surface	**Compliant (Improvement Condition set to clarify)**

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
			Operator states compliant with this one. The surface within the building, treatment areas and outside is all impermeable surfacing. No activities other than vehicle loading takes place outside the buildings. Improvement condition 5 added for the operator to provide details on the impermeable surface (information on how the site complies with CIRIA 736 or an equivalent engineering standard to which the surface complies together with sign off from construction by a Certified Quality Auditor) in accordance with requirements specified within BAT Conclusion 19 of the Waste Treatment BAT Conclusions (EU 2018). This will confirm the site is compliant with this BAT.
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	**Complaint** As above, bunding within building
	e.	Roofing of waste storage and treatment areas	**Complaint** Activities done within a building
	f.	Segregation of water streams (being mindful of existing plant constraints)	**N/A** As above. Building bunded. No waste water
	g.	Adequate drainage infrastructure	**Complaint** As above
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	**Compliant** As above, all access/egress points to the buildings are bunded to accommodate any unforeseen spills/leaks.
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	N/A
20	**Treat waste water using a combination of:**		
	Preliminary, primary and general treatment		
	a.	Equalisation	**N/A** No waste water

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.	Neutralisation	**N/A** No waste water
	c.	Physical separation	**N/A** No waste water
	Physico-chemical treatment		
	d.	Adsorption	**N/A** No waste water
	e.	Distillation/rectification	**N/A** No waste water
	f.	Precipitation	**N/A** No waste water
	g.	Chemical oxidation	**N/A** No waste water
	h.	Chemical reduction	**N/A** No waste water
	i.	Evaporation	**N/A** No waste water
	j.	Ion exchange	**N/A** No waste water
	k.	Stripping	**N/A** No waste water
	Biological treatment		
	l.	Activated sludge process	**N/A** No waste water
	m.	Membrane bioreactor	**N/A** No waste water
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	**N/A** No waste water
	Solids removal		
	o.	Coagulation and flocculation	**N/A** No waste water
	p.	Sedimentation	**N/A** No waste water
	q.	Filtration (sand, micro, ultra)	**N/A** No waste water
	r.	Flotation	**N/A** No waste water
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l)		

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
	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	**N/A** No waste water
	COD (TOC is preferred)	30-180 30-300 for water-based liquid waste	**N/A** No waste water
	Suspended solids	5.0-60	**N/A** No waste water
	HOI	0.5-10 applying to specific waste treatments	**N/A** No waste water
	Total N	1-25 for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	**N/A** No waste water
	Total P	0.3-2 for biological treatment 1-3 for water-based liquid waste	**N/A** No waste water
	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	**N/A** No waste water
	Free CN-	0.02-0.1 for water-based liquid waste	**N/A** No waste water
	AOX	0.2-1 for water-based liquid waste	**N/A** No waste water
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05	**N/A** No waste water

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
	Cd	0.01-0.05	**N/A** No waste water
	Cr	0.01-0.15	**N/A** No waste water
	Cu	0.05-0.5	**N/A** No waste water
	Pb	0.05-0.1	**N/A** No waste water
	Ni	0.05-0.5	**N/A** No waste water
	Hg	0.5-5	**N/A** No waste water
	Zn	0.1-1	**N/A** No waste water
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	**N/A** No waste water
	Cd	0.01-0.1	**N/A** No waste water
	Cr	0.01-0.3	**N/A** No waste water
	Hexavalent Cr [Cr(VI]	0.01-0.1	**N/A** No waste water
	Cu	0.05-0.5	**N/A** No waste water
	Pb	0.05-0.3	**N/A** No waste water
	Ni	0.05-1	**N/A** No waste water
	Hg	1.0-10	**N/A** No waste water
	Zn	0.1-2	**N/A** No waste water
	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*		

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
	HOI	0.5-10 applying to specific waste treatments	**N/A** No waste water
	Free CN-	0.02-0.1 for water-based liquid waste	**N/A** No waste water
	AOX	0.2-1 for water-based liquid waste	**N/A** No waste water
	Metals & Metalloids – specific waste treatments as listed in Table 6.2		
	As	0.01-0.05	**N/A** No waste water
	Cd	0.01-0.05	**N/A** No waste water
	Cr	0.01-0.15	**N/A** No waste water
	Cu	0.05-0.5	**N/A** No waste water
	Pb	0.05-0.1	**N/A** No waste water
	Ni	0.05-0.5	**N/A** No waste water
	Hg	0.5-5	**N/A** No waste water
	Zn	0.1-1	**N/A** No waste water
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	**N/A** No waste water
	Cd	0.01-0.1	**N/A** No waste water
	Cr	0.01-0.3	**N/A** No waste water
	Hexavalent Cr [Cr(VI]	0.01-0.1	**N/A** No waste water
	Cu	0.05-0.5	**N/A** No waste water

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
	Pb	0.05-0.3	**N/A** No waste water
	Ni	0.05-1	**N/A** No waste water
	Hg	1.0-10	**N/A** No waste water
	Zn	0.1-2	**N/A** No waste water
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** Documents EWS 7a.01 and E-EP055 R7. • Protection measures: The site is a secure lock-up site with secure perimeter fencing and steel access gates that are locked at all times other than upon access/egress of transport/workforce/contractors. There is low risk of fire and/or explosion as there is little presence of combustibles on site. Firefighting provision is in the form of hoselines and appropriate extinguishers located strategically on site. All operating equipment is located in one area of the site and is isolated when not in use. Fuel is stored away from the area of operations. • Incidental/Accidental emissions Access/egress points to the buildings are bunded appropriately to prevent any spillages escaping the buildings. This would also apply to firefighting water. The site supervisor carries out daily checks to ensure the integrity of the building structure that could allow fugitive airborne

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
			releases. Any anomalies are reported in the site log book. The supervisor has the authority to immediately close down operations and contact our building contractors to arrange appropriate repairs should any breaches occur. • Incident/accident registration and assessment. All accidents/incidents/near misses are recorded in the site log book by the site supervisor. Any events are investigated by the management team and the findings disseminated to the operational team on site. Any changes made operationally could affect standard operating procedures which would result in changes to the site safe working methods and initiate staff re-training.
	b.	Management of incidental or accidental emissions	**Compliant** As above. Loose material kept inside, berms create bund like structure. Accident Management Plan submitted and documents E-EP055 R7 and EWS 7a.01. Details on how manage risks/incidents/accidents provided.
	c.	Incident/accident registration and assessment system – see examples	**Compliant** As above. Daily checks carried out for any spills etc. If identified spills cleaned immediately. Measured in place on site are reviewed and records kept. Details of procedures in document E-EP055 R7
MATERIAL EFFICIENCY			
22	**Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders**		**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			No mixing/blending/correction/neutralisation of materials takes place on site. Only waste materials are processed/sorted/treated.
ENERGY EFFICIENCY			
23	**Use energy efficiently by using <u>both</u> of the following techniques:**		
	a.	Energy efficiency plan	**Compliant** The energy efficiency plan monitors energy consumed at the site and compares that consumption to throughput. Any deviation from the 'normal' range of this comparison will be thoroughly investigated and the cause rectified. There is limited equipment on site and every precaution has been taken to use the most energy efficient equipment available. This equipment is maintained to a high standard in order to ensure it operates at optimum performance at all times. There is as a result limited, if any, scope to set targets for improvement. In place there is detailed and thorough interrogation of the energy data as provided by invoices against throughput. The Tafarnaubach facility is an extremely low energy user and can therefore only very basic measures to ensure that the activities on the site are carried out in as energy efficient a manner as possible can be taken. In terms of electricity, the only real consumption is in the form of illumination. The lighting must be adequate in order to maintain levels of safety and energy-efficient lamps/lighting units will be utilised wherever possible and always during replacement of units. Natural gas is used only in very small quantities in order to provide necessary space heating and showering facilities are provided so as to enable compliance with the

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			Control of Lead at Work Regulations, 2002. The overall natural gas consumption is therefore be extremely low in commercial terms and every effort is made to minimise use or improve efficiency wherever possible using timed thermostatic control for heating and domestic hot water supplies. All vehicular plant employed at the facility is regularly serviced and maintained and is as energy efficient as possible by type. Wherever possible loads to and from the site will be optimised so as to make the most of transport requirements and only well-maintained vehicles and reputable companies, based locally if possible, will be used. The use of energy is minimised wherever possible at the facility, with any changes made to energy usage only being made in order to either boost productivity while maintaining consumption levels or to reduce consumption against a maintained output. Records of consumption and productivity will be maintained in order to measure this efficiency. The EnviroWales Rassau Industrial estate site has a Climate Change Agreement and any energy efficiency measures identified through activities there can be assessed for suitability to the Tafarnaubach site although the satellite site is not included in the EnviroWales CCA. Site officer satisfied with this BAT conclusion.
	b.	Energy balance record	**Compliant** Detailed examination of delivered energy and throughput is carried out regularly and discrepancies/anomalies are investigated and reacted to very quickly. This performance is reported to NRW annually.
REUSE OF PACKAGING			

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
24	**Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)**		**Compliant** There is a very limited range of packaging used at the site and none is re-used other than steel drums and/or battery bins that are re-used on site or between sites for the same purpose. As above, further details provided by the operator clarified that there are no residues to manage. Occasionally a fine mist spray is utilised for dust control in the immediate working area. Volumes of water used are minimal and any residue is evaporated away. A monthly record of water consumption is maintained, though as already explained, water consumed on site is almost solely used for domestic purposes in terms of personal hygiene as required by the Control of Lead at Work Regulations, 2002. All waste water from these facilities is discharged via public sewer. ALL material processed is used and packaged for export from site for either further processing or permanent storage
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:**		
	a.	Cyclone – see S6.1	**N/A**
	b.	Fabric filter – see S6.1	**N/A** There are no channelled emissions to air from the site. All activities take place indoors under negative pressure. Specific dust-generating activities take place under air recycling HEPA filtration LEV. All doors are closed during operation. The LEV systems used is an air recycling type that returns the filtered air to within the building. There are no discharges 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
			water from the site other than from hygiene facilities to domestic sewer. All external surface drains in the delivery areas are blocked. There are no drains within the buildings. All access/egress points are bunded. The LEV systems are air recirculation types – there are no emissions to air from these units as all the filtered air is returned into the building. These systems are included in planned preventative maintenance regimes and are tested for efficacy with a Thorough Examination under the COSHH Regulations.
	c.	Wet scrubbing – see S6.1	**N/A** As above
	d.	Water injection into the shredder	**N/A** 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	**N/A** As above. No channelled emission to air. Air from HEPA filtration system is returned within the building.
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	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	(b)	Remove dangerous items from waste inputs and dispose of them in a safe manner	**N/A**
	(c)	Treatment of containers accompanied by a declaration of cleanliness	**N/A**
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	**N/A**
	b.	Pressure relief dampers	**N/A**
	c.	Pre-shredding (device)	**N/A**
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	**N/A**
	b.	Cryogenic condensation	**N/A**
	c.	Adsorption	**N/A**
	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	**N/A**
	CFCs	0.5-10	**N/A**
30	**Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use EITHER 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.	Inert atmosphere e.g. N2	**N/A**
	b.	Forced ventilation	**N/A**
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	**N/A**
	b.	Biofilter – see S6.1	**N/A**
	c.	Thermal oxidation – see S6.1	**N/A**
	d.	Wet scrubbing – see S6.1	**N/A**
	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	**N/A**
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		**N/A**
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		**N/A**
	Monitoring of waste gas treatment efficiency		**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Mercury levels measured at least weekly within treatment and storage areas		**N/A**
	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	**N/A**
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**		**N/A**
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	**N/A**
	b.	Biofilter – see S6.1	**N/A**
	c.	Fabric filter – see S6.1.	**N/A**
	d.	Thermal oxidation – see S6.1	**N/A**
	e.	Wet scrubbing – see S6.1	**N/A**
	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	**N/A**
	Odour	200-1000	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Dust	2.0-5.0	**N/A**
	TVOC	5.0-40	**N/A**
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)	**N/A**
	b.	Water recirculation	**N/A**
	c.	Minimisation of the generation of leachate	**N/A**
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		**N/A**
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		**N/A**
	Aeration of the windrow		**N/A**
	Windrow porosity, height and width		**N/A**
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	**N/A**
	b.	Adaptation of operations to the meteorological conditions	**N/A**
BIOLOGICAL TREATMENT OF WASTE: ANAEROBIC METHODS			

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
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		**N/A**
	Minimise operational difficulties and associated odour emissions		**N/A**
	Provide sufficient early warning of system failures		**N/A**
	Windrow porosity, height and width		**N/A**
	Monitoring and/or control of key waste and process parameters – examples below:		
	pH and alkalinity of the digester feed		**N/A**
	Digester operating temperature		**N/A**
	Hydraulic and organic loading rates of the digester feed		**N/A**
	Volatile fatty acids and NH3 concentrations within digester & digestate		**N/A**
	Biogas quantity, composition (e.g. H2S) and pressure		**N/A**
	Liquid and foam levels in the digester		**N/A**
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:**		
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	**N/A**
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		**N/A**
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water		**N/A**
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	**N/A**
	b.	Biofilter – see S6.1	**N/A**
	c.	Fabric filter – see S6.1.	**N/A**
	d.	Wet scrubbing – see S6.1	**N/A**
	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	**N/A**
RE-REFINING OF WASTE OIL			

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
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		**N/A**
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	**N/A**
	b.	Energy recovery	**N/A**
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	**N/A**
	b.	Thermal oxidation – see S6.1	**N/A**
	c.	Wet scrubbing – see S6.1	**N/A**
	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	**N/A**
	b.	Cryogenic condensation – see S6.1	**N/A**
	c.	Thermal oxidation – see S6.1	**N/A**
	d.	Wet scrubbing – see S6.1	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	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)	**N/A**
	b.	Energy recovery e.g. using distillation residues	**N/A**
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	**N/A**
	b.	Adsorption – see S6.1	**N/A**
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	**N/A**
	d.	Condensation or cryogenic condensation	**N/A**
	e.	Wet scrubbing – see S6.1	**N/A**
	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)			

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
(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	**N/A**
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	**N/A**
	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	**N/A**
	c.	Process-integrated techniques to reduce emissions to air – see examples	**N/A**
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	**N/A**
	b.	Electrostatic precipitator (ESP) – see S6.1	**N/A**
	c.	Fabric filter – see S6.1	**N/A**
	d.	Wet scrubbing – see S6.1	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	e.	Adsorption – see S6.1	**N/A**
	f.	Condensation – see S6.1	**N/A**
	g.	Thermal oxidation – see S6.1	**N/A**
	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:**		
	a.	Adsorption – see S6.1	**N/A**
	b.	Fabric filter – see S6.1	**N/A**
	c.	Wet scrubbing – see S6.1	**N/A**
	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	**N/A**
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	**N/A**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Optimised equipment cleaning and drainage – see examples	**N/A**
	d.	Control and monitoring of emission to air – see examples	**N/A**
	e.	Disposal of waste treatment residues – see examples	**N/A**
	f.	Recovery of solvent when solvent washing is used	**N/A**
	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		**N/A**
	Feasibility of emulsion breaking e.g. lab testing		**N/A**
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	**N/A**
	b.	Biofilter – see S6.1	**N/A**
	c.	Thermal oxidation – see S6.1.	**N/A**
	d.	Wet scrubbing – see S6.1	**N/A**
	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
	HCl	1.0-5.0	**N/A**
	TVOC	3.0-20	**N/A**

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

No derogation has been applied for.