

Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – Harp International Limited

We have decided to issue a Natural Resources Wales initiated variation and consolidated permit for Gellihirion Hazardous Waste Reclamation and Storage Facility in Gellihirion Industrial Estate, Pontypridd operated by Harp International Ltd.

The permit number is EPR/NP3099FS.

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 Gellihirion Hazardous Waste Reclamation and Storage Facility against the published BAT conclusions for Waste Treatment.
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions

Assessment of Gellihirion Hazardous Waste Reclamation and Storage Facility against the published BAT conclusions for Waste Treatment

1. Our decision

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

The variation does three things:

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

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

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

The Facility was first permitted as a Licence to dispose of waste on 22 October 1991 under licence Reference 3/91/21. The permit has since undergone several transfers and variations, including a variation in July 2015, which amended the permit to include an installation activity. The permit variation (V009) issued on 6 July 2015 ensured at the time, 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);
- a *waste operation* subject to Environmental Permitting Regulations, however this review only applies to the installation activity as described by the Industrial Emissions Directive.
- subject to aspects of other relevant legislation which also have to be addressed.

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

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

3. How we reached our decision

Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 on 5 April 2019 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

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

- Describe the techniques that will be implemented before 17 August 2022, which will then ensure that operations meet the revised standard, or
- Justify why standards will not be met by 17 August 2022, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- Justify why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.
- Where their permitted activity involves the use, production or release of a hazardous substance, as defined in Article 3(18) of the Industrial Emissions Directive, Harp International Ltd were required to carry out a risk assessment considering the possibility of soil and groundwater contamination at the permitted installation with such substances. Where risk of such contamination is established prepare a baseline report containing information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definite cessation of the activity. Harp International Ltd have a copy of a consequent baseline report.

- Where their permitted activity involves the use, production, storage or release of priority hazardous substances and any other relevant substances., as defined by the Water Framework Directive, the Harp International Ltd were required to carry out a risk screening assessment considering the presence of priority hazardous substances at the permitted installation. Where a risk of these substances is established the operator is to sample the effluent and screen for the priority hazardous substances. If these substances are found to be present in the effluent stream, then assessment using the H1 tool and potential detailed modelling will be required to demonstrate that the effluent discharge will not have a significant impact to the receiving water.

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

The Regulation 61(1) Notice response from the operator was received on the 12 June 2019 with additional information received on the 28 September 2020.

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

4. Key issues/Regulation 61 response

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

A response was received from Harp International Ltd to Sections 1 to 4 of the Regulations 61(1) Notice. Following assessment of the Regulation 61(1) response, further information was requested from Harp International Ltd. Where the operator has concluded that they have achieved BAT, and we are in agreement, no further information/justification has been sought by Natural Resources Wales. Where the operator has not provided sufficient information or where the existing documentation does not achieve BAT, improvement conditions have been set to ensure compliance by 2022.

In response to Section 5 of the Regulation 61(1) Notice an update Opra profile was provided.

In response to Section 6 of the Regulation 61(1) Notice, Harp International Ltd did not provide the required information. The site does use hazardous substances as defined in Article 3(18) of the Industrial Emissions Directive, thus an improvement condition has been included within the permit to ensure any activities involving the use, production or release of relevant hazardous substances as defined in Article 3(18) of the Industrial Emissions Directive are fully assessed on site (IC6).

In response to Section 7 of the Regulation 61(1) Notice Harp International Ltd confirmed that there are no discharges to surface water or groundwater other than clean un-contaminated surface water rainfall run-off currently listed within Schedule 3 of the Permit. As this WT BREF review considers existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.

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
IC1	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018): - BAT 1 - Implement and adhere to an environmental management system (EMS) that incorporates all of the following features: (XII) Residues Management Plan; (XIII) Accident Management Plan.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC2	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018): BAT 14 In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques described within BAT 14 Table.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC3	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018): BAT 19 In order to optimise water consumption, to reduce the volume of wastewater generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques described within BAT 19 Table.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC4	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018): - BAT 23 Energy Efficiency Plan; and - Energy Balance Record.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC5	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018): BAT 24 Maximise the reuse of packaging as part of a Residues Management Plan.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC6	The Operator shall complete and submit for approval in writing by Natural Resources Wales:	17 February 2022 or otherwise

	• 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.	agreed in writing with Natural Resources Wales
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IC1 has been included in the permit as the Operator has not provided sufficient information within their response to the Regulation 61(1) Notice to confirm that they have a Residues Management Plan or Accident Management Plan which meets the standards specified within Section 6.5 of the BREF. The inclusion of the improvement condition will ensure that the Operators operational documentation is updated meet these BAT conclusions, prior to compliance deadline.

IC2 has been included in the permit as the Operator has not provided sufficient information within their response to the Regulation 61(1) Notice to fully satisfy the requirements of BAT Conclusion 14. Additional information is required in order to fully satisfy the following, specifically in relation to the storage of oils (activity A1 within the permit):

- b. Select and use high-integrity equipment;
- c. Corrosion prevention;
- f. Maintenance;
- g. Cleaning of waste treatment and storage areas.

The inclusion of the improvement condition will ensure that the Operators operational documentation is updated meet these BAT conclusions, prior to compliance deadline.

IC3 has been included in the permit as the Operator has not provided sufficient information within their response to the Regulation 61(1) Notice to fully satisfy the requirements of BAT Conclusion 19. Additional information is required in order to fully satisfy the following, specifically in relation to the storage of oils (activity A1 within the permit):

- c. Impermeable surface;
- d. Reduce likelihood and impact of tank/vessel overflows and failures;
- e. Roofing of waste storage and treatment areas;
- g. Adequate drainage infrastructure;

- h. Design and maintenance provisions to allow risk-based leak detection and repair; and
- i. Appropriate buffer storage capacity (being mindful of existing plant constraints).

The inclusion of the improvement condition will ensure that the Operators operational documentation is updated meet these BAT conclusions, prior to compliance deadline.

IC4 has been included in the permit as the Operator has not provided sufficient information within their response to the Regulation 61(1) Notice to fully satisfy the requirements of BAT Conclusion 23. The inclusion of the improvement condition will ensure that the Operators operational documentation is updated meet these BAT conclusions, prior to compliance deadline.

IC5 has been included in the permit as the Operator has not provided sufficient information within their response to the Regulation 61(1) Notice to fully satisfy the requirements of BAT Conclusion 24. The inclusion of the improvement condition will ensure that the Operators operational documentation is updated meet these BAT conclusions, prior to compliance deadline.

The Regulation 61(1) Notice requested Operators to either submit a baseline Site Condition Report for their Facility or provide a summary report referring to information previously submitted which states the current state of soil and groundwater contamination at the site. The Operator indicated that this requirement was not applicable to their site, however as their facility does use and storage hazardous materials, a baseline Site Condition Report is required. IC6 has been included to ensure that the Operators submits a report to NRW to satisfy Article 3(18) of the Industrial Emissions Directive (IED).

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 “Gellihirion Hazardous Waste Reclamation and Storage Facility”. This is to ensure there is a clear distinction between the Operator’s company name and the name of the facility itself;

- The Introductory Note has been updated to provide clarity with regards to the installation versus waste operation activities, and to better described the processes which take place at the Facility;
- Written descriptions of waste types described within Schedule 2 have been updated to reflect current legislation (I.e. the definition of 'dangerous' having been replaced with 'hazardous');
- Additional process data to report against generation of residues and wastewater has been included as part of the updated reporting parameters within Schedule 4 of the permit, in order to satisfy requirements of BAT Conclusion 11;
- 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 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".

Although site activities include the storage of hazardous substances, the Operator has not undertaken an assessment of the impact from the site as there are no emissions to water associated with the permitted activities. As this WT BREF review considers existing permitted activities against the BAT conclusions, no further action or information has been requested from the Operator. It is noted however, that the Operator does has a Trade Effluent Consent (TEC), and that this is not currently

reflected within the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.

Emissions to Water – Article 15(4) Derogations

No derogations.

Emissions to Air

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

Emissions to Air – Article 15(4) Derogations

No derogations.

Other IED BREFs relevant to the permit review

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

6. Conclusion

We consider that the installation already employed what used to be BAT, and that the operator has achieved improvements in performance since the permit was originally granted. The revised BREF and its BAT-AELs provide the opportunity to consider further environmental improvements.

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

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

Annex 1: Decision checklist regarding relevant BAT Conclusions

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

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

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
OVERALL ENVIRONMENTAL PERFORMANCE		
1	Environment Management System (EMS) – <u>ALL</u> of the following:	
	I. Management commitment	Currently Compliant: Operator has confirmed their EMS is certified to ISO14001 Standard since June 2000. Directors attend annual management review meetings, provide resources to maintain registration to ISO 14001, are interviewed by BSI during external audits.

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	Currently Compliant: Implemented through site Management System Document Reference: IMS policy
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	Currently Compliant: Implemented through site Management System. Objectives and targets are put in place at the beginning of each year. Resources, responsibilities and timelines are included. Document Reference: O&T for 2021
	IV.	<i>Implementation of procedures</i>	
		(a) Structure & responsibility	Currently Compliant: Implemented through site Management System. Details included in IMS manual. Structure under section 6, responsibilities under section 7 Document Reference: IMS manual
		(b) Recruitment, training, awareness & competence	Currently Compliant: Implemented through site Management System. Training records, training matrix, induction records, annual awareness training, toolbox talks etc. Document Reference: IMS procedure no.9
		(c) Communication	Currently Compliant: Implemented through site Management System. Company handbook, regular meetings, toolbox talks, intranet, website. Document Reference: IMS procedure no.14
		(d) Employee involvement	Currently Compliant: Implemented through site Management System. Toolbox talks, representatives at SEQ meetings, assist in reviewing risk assessments. Document Reference: Controlled doc no.38

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) Documentation	Currently Compliant: Implemented through site Management System. Internal documents are controlled, have a unique number, issue and revision status. Document Reference: IMS procedure no.3
		(f) Effective process control	Currently Compliant: Implemented through site Management System. Details included in IMS manual, section 4, page 8. Document Reference: IMS manual. See evidence 1 iv (a)
		(g) Maintenance programmes	Currently Compliant: Implemented through site Management System. Database, monthly planned maintenance report issued to site fitter. Document Reference: IMS procedure no.2
		(h) Emergency preparedness & response	Currently Compliant: Implemented through site Management System. Fire drills, spillage drills etc. Document Reference: IMS procedure no.10
		(i) Safeguarding compliance with environmental legislation	Currently Compliant: Implemented through site Management System. Daily checks at legislation.gov.uk, CBA membership which includes monthly 'Updates', legislation register and compliance checks. Document Reference: IMS procedure no.8
	V.	<i>Checking performance and taking corrective action</i>	
		(a) Monitoring & measurement	Currently Compliant: Implemented through site Management System. Carried out on an ongoing basis, summarised at Management Review. Document Reference: Management Review minutes

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) Corrective and preventive action	Currently Compliant: Implemented through site Management System. All accidents, incidents, complaints etc. investigated. Corrective action log. Preventative action put in place. Document Reference: Document no.131 & 89 & 2.
		(c) Maintenance of records	Currently Compliant: Implemented through site Management System. Records are maintained for specified time periods. Filing cabinets in offices and an archive room. Electronic records also kept. Document Reference: IMS procedure no.3. See evidence 1 iv €
		(d) Independent (where practicable) internal or external EMS auditing	Currently Compliant: Implemented through site Management System. Internal auditing carried out by two qualified members of staff - plan produced every January. External audits conducted by BSI twice a year. Document Reference: Internal audit plan. Email from BSI
	VI.	Senior management review of EMS	Currently Compliant: Implemented through site Management System. Annual Management Review meeting. Document Reference: Management Review minutes. See evidence 1 v (a)
	VII.	Following development of cleaner technologies	Currently Compliant: Implemented through site Management System. Storage of waste refrigerant does not use any electricity or other natural resources. The carbon steel cylinders used to hold the gas are reused and tested every ten years. At the end of their life, the metal and brass valve is recycled. Regularly monitor legislation changes and best practice from trade associations e.g. BCGA.

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
			Document Reference: British Compressed Gas Association Code of Practice 38
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	Currently Compliant: Implemented through site Management System. Reclaimed refrigerant is returned to virgin product specification and resold. Plant 'pulled' down to recover all gas before maintenance/decommissioning. Site closure considered under point 13 of EPMS. Document Reference: Environmental Permit Management System
	IX.	Regular sectoral bench marking	Currently Compliant: Implemented through site Management System. Members of the Chemical Business Association. Complete annual indices of performance & report produced by the CBA. Document Reference: CBA IOP 2019
	X.	Waste stream management (BAT 2)	Currently Compliant: Implemented through site Management System. Only two types of waste accepted - refrigerants and refrigeration oil. Every gas cylinder is sampled and analysed by the onsite laboratory. All cylinders and oil containers are barcoded for traceability and entered into the database. Document Reference: WI 97, WI 26, WI 47, WI 58
	XI.	Inventory of wastewater & waste gas streams (BAT 3)	Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further

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
			action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	XII.	Residues Management Plan – S6.5	Compliant in Future: The Operator has advised that residues are discussed in point 4 of Operators EPMS. The waste streams produced from the process are molecular sieve, oil and oil containers. The existing document does not demonstrate full compliance with BAT XII, Table S6.5 requirements. An improvement condition has therefore been included within the permit to ensure compliance, prior to compliance deadline (IC1)
	XIII.	Accident Management Plan – S6.5	Compliant in Future: The Operator has advised that residues are discussed in point 6 in EPMS identifies the potential incidents (leak, spillage, fire) and the Operators measures in place to mitigate them. Document Reference: Environmental Permit Management System. See evidence 1 VIII. The existing document does not demonstrate full compliance with BAT XIII, Table S6.5 requirements as the Existing AMP does not include an inventory of pollutants. An improvement condition has therefore been included within the permit to ensure compliance, prior to compliance deadline (IC1)

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
	XIV.	Odour Management Plan (BAT 12)	Not applicable: Operator has advised that the site does not have an OMP in place as not required under the permit as no substantiated odour complaints.
	XV.	Noise & Vibration Management Plan (BAT 17)	Not applicable: Operator has advised that the site does not have an NMP in place as not required under the permit as no substantiated noise complaints.
2	Improving overall environmental performance – <u>ALL</u> of the following:		
	a.	Set up and implement waste characterisation & pre-acceptance procedures	Currently Compliant: Implemented through site Management System. Dedicated barcoded cylinders/containers are provided to customers specifically for the return of their waste refrigerant or refrigeration oil. Every cylinder returned is sampled and analysed by our on-site laboratory. Oil is bulked into a dedicated tank for recycling.
	b.	Set up and implement waste acceptance procedures	Currently Compliant: Implemented through site Management System. Dedicated barcoded cylinders/containers are provided to customers specifically for the return of their waste refrigerant or refrigeration oil. Every cylinder returned is sampled and analysed by our on-site laboratory. Oil is bulked into a dedicated tank for recycling. Document Reference: WI 97. See evidence 1 X
	c.	Set up and implement a waste tracking system & inventory	Currently Compliant: Implemented through site Management System. Database holds all waste information and the history of the cylinder, including the date the cylinder was sent out, the date it was returned, the consignment note number, the weight of 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
		cylinder, its storage location and lab results. Document Reference: Screenshot of database
	d.	Set up and implement an output quality management system Currently Compliant: Implemented through site Management System. All waste refrigerant is returned to virgin product specification and analysed by the on-site lab at every stage. Document Reference: Screenshot of lab results in database
	e.	Ensure waste segregation Currently Compliant: Implemented through site Management System. Refrigerant waste remains in its dedicated barcoded cylinder until it's ready for processing. Cylinders are stored in numbered cages in a specific area of the yard. The cage number is listed under the cylinder barcode in the database. Oil is transferred straight into a tank which is in a bund. Only small quantities of oil received. Document Reference: Evidence 1 XI
	f.	Ensure waste compatibility prior to mixing or blending Not Applicable: Site does not mix wastes. Document Reference: Evidence 1 XIV.
	g.	Sort solid incoming waste – S6.4 Not Applicable: Solids not accepted under our permit. Document Reference: Evidence 1 XIV.
3	Establish and maintain a wastewater and waste gas inventory as part of the EMS - <u>ALL</u> of the following:	
	<i>Information on characteristics of waste and waste treatment processes</i>	
	(i)(a)	simplified process flow sheets showing emission sources Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions

BATc number		Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
				listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	(i)(b)	Process-integrated and wastewater/waste gas treatment descriptions including performance		Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Information on characteristics of wastewater streams			
	(ii)(a)	Mean and variability of:		
		Flow		Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions
pH				
Temperature				

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		Conductivity	listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	(ii)(b)	Mean concentration, load and variability of:	
		Total suspended solids	Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
		COD/TOC	
		Nitrogen species	
		Phosphorous	
		Metals	
		Priority substances/micropollutants	
		Any other relevant compounds	
	(ii)(c)	Bioeliminability data (see BAT 52):	
		BOD	Not Applicable: There Operator has stated there are no emissions of wastewater or waste gas streams associated with the sites processes and the permit does not have any permitted emissions
		BOD to COD ratio	
		Zahn-Wellens test	

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
		Biological inhibition potential	listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Information on characteristics of waste gas streams		
	(iii)(a)	Mean and variability of:	
		Flow	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		temperature	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
	(iii)(b)	Mean concentration, load and variability of relevant substances:	
		Organic compounds	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		POPs e.g. PCBs	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		Any other relevant compounds	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.

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)(c)	Flammability	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		Lower and Higher Explosive Limits	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		Reactivity	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
	(iii)(d)	<i>Presence of other substances that may affect the gas treatment system or plant safety:</i>	
		O2	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		N2	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		Water vapour	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
		Dust	Not Applicable: There are no emissions of waste gas streams associated with the sites storage processes.
4	Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:		
	a.	Optimised storage location	Currently Compliant: Waste cylinders are stored in numbered cages against the back wall of the concreted yard, close to the roller shutter door, just inside which is the scales used to weigh them. Samples for analysis are also taken at this point. The waste is a gas and therefore cannot pollute groundwater or soil. 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
			containers are weighed then emptied into a 2000 litre tank, held within a bund, which also has a canopy. Evidence Reference 1 XI: Pictures in reclaim process document.
	b.	Adequate storage capacity	Currently Compliant: The Operator has stated that receipt of waste and processing of waste is a continuous process. Quantities are monitored regularly (database) and a monthly report produced. Evidence Reference: Reclaim work in progress report.
	c.	Safe storage operation	Currently Compliant: The Operator has stated that Forklift trucks are numbered, checked before use (yellow tag system) and inspected annually under LOLER. Cylinders are tested every ten years. Damage to cages noted and corrected. Details of hazardous waste oil storage provided within EMS Evidence Reference: Forklift inspection report; EPMS.
	d.	Separate area for storage & handling of packaged hazardous waste	Currently Compliant: The Operator has stated that there are dedicated areas for storage, weighing and emptying cylinders and containers. Evidence Reference 1 XI: Pictures in reclaim process document.
5	Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:		
	Carried out by competent staff		Currently Compliant: The Operator has confirmed that there are two WAMITAB CoTC holders on site. On the job training for operators with annual environmental awareness training. Training

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
		records maintained; training forms signed. Evidence Reference: WAMITAB certificates, Training record, signed document 173.
	Duly documented, validated and verified	Currently Compliant: The Operator has confirmed that the site uses Consignment notes to accompany all movements of haz waste. Weighing of cylinders recorded on document 27. Verified when cylinder is emptied. Evidence Reference: Completed consignment note, doc 27
	Spill prevention, detection and mitigation measures	Currently Compliant: The Operator has confirmed that Spillage drills are carried out on site, along with spill training (video). Any spillages are recorded on document number 65, discussed at SEQ meetings, spill kits located around the site. the site also implements an Emergency Preparedness and Response Plan. Evidence Reference: Doc 65
	Take precautions when mixing or blending wastes	Not Applicable: No mixing or blending of wastes permitted on site
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	Currently Compliant: The Operator has confirmed that Risk assessments are included as part of in-house training. F-Gas refresher training provided annually. Evidence Reference: Doc 173, F-gas awareness document; IMS procedure no.10; Evidence 1 VIII - EPMS
MONITORING		

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
6	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
	Wastewater flow	Not Applicable: There Operator has stated there are no emissions to water associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Operator does has a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	pH	
	Temperature	
	Conductivity	
	BOD	
	Other process parameters	
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	Not Applicable: There Operator has stated there are no emissions to water associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Operator does has a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Final treatment inlet	
	Discharge point (to the environment)	
	Other location	

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	Not Applicable: There Operator has stated there are no emissions to water associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
8	Monitoring emissions to air (refer to table) Monitoring parameters depend on waste treatment process(es) involved	Not Applicable: There are no emissions air associated with the sites storage processes.
9	Monitoring diffuse emissions of organic compounds to air from processes involving solvents. Use one or a combination of the following:	
	a	Measurement – S6.2 descriptions
	b	Emissions factor calculation
	c	Mass balance calculation
	Not Applicable: There are no diffuse emissions of organic compounds to air from processes involving solvents associated with the sites storage processes.	
	Not Applicable: There are no diffuse emissions of organic compounds to air from processes involving solvents associated with the sites storage processes.	
	Not Applicable: There are no diffuse emissions of organic compounds to air from processes involving solvents associated with the sites storage processes.	

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
10	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	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility
	Use equivalent methods e.g. ISO / national / international monitoring standards	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility
11	Annual monitoring for:	
	- Water, energy and raw materials	Compliance in Future: Operator has stated N/a however this is a general BAT requirement and therefore applicable to site operations. The permit sets out reporting parameters that will form part of the annual report submitted to the Regulator at the end of January each year. Additional process data has been included as part of the updated reporting parameters and forms issued as part of permit variation.
	- Generation of residues and wastewater	Compliance in Future: Operator has stated N/a however this is a general BAT requirement and therefore applicable to site operations. The permit sets out reporting parameters that will form part of the annual report submitted to the Regulator at the end of January each year. Additional process data has been included as part of the updated reporting parameters and forms issued as part of permit variation.

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
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	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
	Protocol for conducting odour monitoring (BAT 10)	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
	Protocol for response to odour incidents/complaints	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
	Odour prevention and reduction programme	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
13	Techniques to prevent, or where not practicable reduce odour emissions. Use one or a combination 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.	Minimising residence times (open systems only)	Not Applicable: Operator has stated N/a within response. Site activities do not include open systems.
	b.	Use chemical treatment (N/A if desired output is hampered)	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
	c.	Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.	Not Applicable: Operator has stated N/a within response there are no expected odour emissions or substantiated odour complaints from the Facility. There are no emissions air associated with the sites storage processes.
14	Techniques to prevent, or where not practicable reduce diffuse emissions to air, in particular of dust, organic compounds and odour. Use one or a combination of the following:		
	a.	Minimising potential diffuse emission sources – see examples	Currently Compliant: The Operator has confirmed that Cylinders contain valves which prevent the release of gas. Operators are trained to look for leaks. Diffuse emissions will occur when a gas sample is taken for analysis (10ml). It is not possible to prevent this and is permissible under the F-Gas regs. Document Reference: Valve information & extract from SI No.310/2015
	b.	Select and use high-integrity equipment – see examples	Compliant in Future: The Operator has confirmed that valves replaced every ten years when cylinders are inspected and tested, however no further information has been provided to demonstrate full compliance with this BAT conclusion. An improvement

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
		condition has therefore been included to ensure the site is fully compliance, prior to compliance deadline (IC2)
	c.	Corrosion prevention – see examples
	d.	Containment, collection and treatment of diffuse emissions – see examples
	e.	Dampening (with water or fog)
	f.	Maintenance – see examples
	g.	Cleaning of waste treatment and storage areas – see examples
	Compliant in Future: The Operator has confirmed that valves are made of brass and PTFE tape is used to create a seal with the cylinder neck however no details have been provided of the suitable techniques used for storage of oils. An improvement condition has therefore been included to ensure the site is fully compliance, prior to compliance deadline (IC2)	
	Currently Compliant: The Operator has stated that it is not possible to contain or collect diffuse emissions when sampling, but that there are no other diffuse emissions from sites storage processes	
	Compliant in the Future: The Operator has confirmed that cylinders are inspected and tested every ten years. Valves replaced with new at this time. Visual inspections carried out in use between tests, however no further details have been provided of the suitable techniques used for maintenance inspections for storage of oils. An improvement condition has therefore been included to ensure the site is fully compliance, prior to compliance deadline (IC2)	
	Compliant in the Future: The Operator has stated that cleaning of factory carried out regularly, however no further evidence has been provided (cleaning regime, etc). An improvement condition	

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
			has therefore been included to ensure the site is fully compliance, prior to compliance deadline (IC2)
	h.	Leak Detection and Repair (LDAR) programme for organics – S6.2	Currently Compliant: The Operator has advised that emissions of VOCs are not expected. Oxygen sensors in used in reclaim area
15	Use flaring only for safety reasons or non-routine operating conditions (OTNOC). Use <u>both</u> of the following:		
	a.	Correct plant design – see examples	Not applicable: Operator has stated N/a within response there is no flaring on site
	b.	Plant management including gas system balancing and advanced process control	Not applicable: Operator has stated N/a within response there is no flaring on site
16	Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:		
	a.	Correct design of flaring devices – see examples	Not applicable: Operator has stated N/a within response there is no flaring on site
	b.	Monitoring and recording as part of flare management – see examples	Not applicable: Operator has stated N/a within response there is no flaring on site
NOISE AND VIBRATIONS			
17	Set up, implement, and regularly review a Noise and Vibration Management Plan (as part of the EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:		
	i.	Protocol with actions and timelines	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.

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.	Noise and vibration monitoring plan/protocol	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
	III.	Noise & vibration complaint response plan/protocol	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
	IV.	Noise and vibration reduction programme	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
18	Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:		
	a.	Appropriate location of equipment and buildings	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
	b.	Operational measures – see examples	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
	c.	Low-noise equipment – see examples	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
	d.	Noise & vibration control equipment – see examples	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.

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.	Noise attenuation – see examples	Not Applicable: Operator has stated N/a within response there are no expected noise emissions or substantiated noise complaints from the Facility.
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	Not Applicable: There are no emissions of wastewater associated with the sites storage processes.
	b.	Water recirculation	Not Applicable: There are no emissions of wastewater associated with the sites storage processes.
	c.	Impermeable surface	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)

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.	Roofing of waste storage and treatment areas	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)
	f.	Segregation of water streams (being mindful of existing plant constraints)	Not Applicable: There are no emissions of wastewater associated with the sites storage processes.
	g.	Adequate drainage infrastructure	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	Compliant in the Future: The Operator has stated N/a within their response; however, this BAT conclusion is relevant to their Operations. An improvement condition has therefore been included within the permit to ensure the site is compliant with this BAT conclusion, prior to the compliance deadline (IC3)
20	Treat wastewater using a combination 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	
	Preliminary, primary and general treatment		
	a.	Equalisation	Not applicable Operator has stated N/a within response
	b.	Neutralisation	Not applicable Operator has stated N/a within response
	c.	Physical separation	Not Applicable: There Operator has stated there are no emissions of wastewater associated with the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Physico-chemical treatment		
	d.	Adsorption	Not applicable: Operator has stated N/a within response. There is no treatment of wastewater from the Facility using physico-chemical treatment
	e.	Distillation/rectification	
	f.	Precipitation	
	g.	Chemical oxidation	
	h.	Chemical reduction	
	i.	Evaporation	
	j.	Ion exchange	
	k.	Stripping	

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	
	Biological treatment		
	l.	Activated sludge process	Not applicable: Operator has stated N/a within response. There is no treatment of wastewater from the Facility using biological treatment
	m.	Membrane bioreactor	
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	Not applicable: Operator has stated N/a within response. There is no treatment of wastewater from the Facility using nitrogen removal
	Solids removal		
	o.	Coagulation and flocculation	Not applicable: Operator has stated N/a within response. There is no treatment of wastewater from the Facility using solid removal
	p.	Sedimentation	
	q.	Filtration (sand, micro, ultra)	
	r.	Flotation	
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l) Table 6.1 and its supporting notes. Monitoring requirements are outlined in BAT 7		
	TOC	10.0-60	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
		10-100 for water-based liquid waste	
	COD (TOC is preferred)	30-180	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
		30-300 for water-based liquid waste	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Suspended solids	5.0-60	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	HOI	0.5-10 applying to specific waste treatments	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Total N	1-25 for biological treatment and waste oil re-refining 10-60 for water-based liquid waste	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Total P	0.3-2 for biological treatment 1-3 for water-based liquid waste	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	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	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Free CN-	0.02-0.1 for water-based liquid waste	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off

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
	AOX	0.2-1 for water-based liquid waste	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cd	0.01-0.05	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cr	0.01-0.15	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cu	0.05-0.5	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Pb	0.05-0.1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Ni	0.05-0.5	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off

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
	Hg	0.5-5	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Zn	0.1-1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cd	0.01-0.1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cr	0.01-0.3	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Hexavalent Cr [Cr(VI)]	0.01-0.1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Cu	0.05-0.5	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off

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	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Ni	0.05-1	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Hg	1.0-10	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	Zn	0.1-2	Not applicable: Operator has stated N/a within response there are no DIRECT discharges from the Facility to a receiving waterbody other than clean un-contaminated surface water run-off
	BAT-AELs for INDIRECT discharges to a receiving waterbody (mg/l) <i>Table 6.2 and its supporting notes. Monitoring requirements are outlined in BAT 7</i>		
	HOI	0.5-10 applying to specific waste treatments	Not Applicable: Operator has stated N/a within response there are no INDIRECT discharges from the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this
	Free CN-	0.02-0.1 for water-based liquid waste	
	AOX	0.2-1 for water-based liquid waste	

BATc number		Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
				BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Metals & Metalloids – specific waste treatments as listed in Table 6.2			
	As	0.01-0.05		Not Applicable: Operator has stated N/a within response there are no INDIRECT discharges from the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Cd	0.01-0.05		
	Cr	0.01-0.15		
	Cu	0.05-0.5		
	Pb	0.05-0.1		
	Ni	0.05-0.5		
	Hg	0.5-5		
	Zn	0.1-1		
	Metals & Metalloids – treatment of water-based liquid waste			
	As	0.01-0.1		Not Applicable: Operator has stated N/a within response there are no INDIRECT discharges from the sites processes and the permit does not have any permitted emissions listed within Schedule 3. As
	Cd	0.01-0.1		
	Cr	0.01-0.3		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Hexavalent Cr [Cr(VI)]	0.01-0.1	this WT BREF review considers the existing permitted activities against the BAT conclusions, no further action is required as part of this assessment. It is noted however, that the Facility does have a Trade Effluent Consent (TEC), and that this is not currently reflected in the permit. As this work falls outside the scope of this BREF review, another permit variation will be required to bring the permit in line with existing activities.
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
EMISSIONS FROM ACCIDENTS AND INCIDENTS			
21	Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use <u>ALL</u> of the following:		
	a.	Protection measures – see examples	Currently Compliant: Site is secured every night, has high fences, CCTV, intruder alarms, fire alarms, high- and low-level tank alarms. Alarm monitoring system. Emergency stop buttons. Implemented through site Management System Document Reference: Evidence 1 VIII; 1 IV(h) Emergency Preparedness & Response Procedure
	b.	Management of incidental or accidental emissions	Currently Compliant: Point 6 of EPMS. Cylinders regularly tested; valves have pressure relief valves which reseal when the pressure

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
			returns to a safe level. Leaks can easily be detected by frosting on the valve and a hissing noise. Oil is stored within a bund which would capture any leaks. Implemented through site Management System Document Reference: Evidence 1 VIII; 1 IV(h) Emergency Preparedness & Response Procedure
	c.	Incident/accident registration and assessment system – see examples	Currently Compliant: All incidents recorded and summarised at management review. Corrective and preventative action put in place as necessary. Implemented through site Management System Document Reference: Evidence 1 v (a).
MATERIAL EFFICIENCY			
22	Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders		Currently Compliant: The Operator has stated that there are currently no wastes produced that could substitute raw materials.
ENERGY EFFICIENCY			
23	Use energy efficiently by using <u>both</u> of the following techniques:		
	a.	Energy efficiency plan	Compliant in Future. The Operator has stated that the site does not use any energy within the process. However, this BAT conclusion is relevant as the site does consume energy (lighting for yard / building /e etc). As the Operator has not provided sufficient

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, an improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 23 prior to compliance deadline (IC4)
	b.	Energy balance record	Compliant in Future. The Operator has stated that the site does not use any energy within the process. However, this BAT conclusion is relevant as the site does consume energy (lighting for yard / building /e etc). As the Operator has not provided sufficient information, an improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 23 prior to compliance deadline (IC4)
REUSE OF PACKAGING			
24	Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)		Compliant in Future: The Operator has advised that the site reuses packaging (including Cylinders) which are provided to customers which are emptied for reclamation, prepared for reuse then sent back out for refilling when in good working order and when appropriate compatibility of substances to be stored. However, the Operator does not implement a Residues Management Plan in accordance with requirements stated within Table 6.5 of the WT

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
			BREF / BAT1(XII). NRW will include an Improvement Condition to ensure site implements an RMP prior to compliance date. (IC5)
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	Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of waste undertaken at the Facility
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
	d.	Water injection into the shredder	
	BAT-AEL for channelled dust emissions to air from the mechanical treatment of waste (mg/Nm3) Table 6.3 and its supporting note. Monitoring requirements are outlined in BAT 8		
	Dust	2.0-5.0	As above
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	

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	Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
	(c)	Treatment of containers accompanied by a declaration of cleanliness	
27	Prevent deflagrations and reduce emissions from deflagrations. Use technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
	a.	Deflagration management plan with reduction programme, incident review and response protocol	
	b.	Pressure relief dampers	
	c.	Pre-shredding (device)	
28	Use energy efficiently by keeping the shredder feed stable		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
MECHANICAL TREATMENT OF WEEE CONTAINING VFCS AND/OR VHCS			
29	Techniques to prevent, or where not practicable reduce emissions of organic compounds to air. Apply BAT 14d <u>AND</u> BAT14h <u>AND</u> technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of WEE containing VFCs and/or VHCs undertaken at the Facility The treatment of treatment of refrigerant gas including distillation, separation, compression, depressurising and drying fall within the
	a.	Optimised removal and capture of refrigerants and oils	
	b.	Cryogenic condensation	
	c.	Adsorption	

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
				definition of a waste activity, and are therefore outside the scope of the BREF
	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		
30	Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use <u>EITHER</u> of the following techniques:			
	a.	Inert atmosphere e.g. N2		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of WEE containing VFCs and/or VHCs undertaken at the Facility as part of the Installation Activity
	b.	Forced ventilation		
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE				
31	Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:			
	a.	Adsorption – see S6.1		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of metal waste with calorific value undertaken at the Facility
	b.	Biofilter – see S6.1		
	c.	Thermal oxidation – see S6.1		
	d.	Wet scrubbing – see S6.1		
BAT-AEL for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value (mg/Nm3) Table 6.5 and its supporting note. Monitoring requirements are outlined in BAT 8				

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
	TVOC	10.0-30.0	As above
MECHANICAL TREATMENT OF WEEE CONTAINING MERCURY			
32	Reduce mercury emissions to air by collecting them at source, sending them to abatement and carrying out adequate monitoring. This includes <u>ALL</u> of the following:		
	Equipment is enclosed, under negative pressure and connected to a LEV system		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical treatment of WEEE containing mercury undertaken at the Facility
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		
	Monitoring of waste gas treatment efficiency		
	Mercury levels measured at least weekly within treatment and storage areas		
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm3) <i>Table 6.6. Monitoring requirements are outlined in BAT 8</i>		
	Hg	2.0-7.0	As above
BIOLOGICAL TREATMENT OF WASTE (GENERAL BAT)			
33	Reduce odour emissions and improve overall environmental performance by selecting the waste input (to ensure its suitability for biological treatment). See also BAT 2		Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste undertaken at the Facility

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
34	Reduce emissions to air of dust, organic compounds and odorous compounds (including H ₂ S & NH ₃) by using one or a combination of the following techniques:	
	a.	Adsorption – see S6.1
	b.	Biofilter – see S6.1
	c.	Fabric filter – see S6.1.
	d.	Thermal oxidation – see S6.1
	e.	Wet scrubbing – see S6.1
	Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste undertaken at the Facility	
	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	
	NH ₃	0.3-20
35	Odour	200-1000
	Dust	2.0-5.0
	TVOC	5.0-40
	Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste undertaken at the Facility	
	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)
	b.	Water recirculation
	c.	Minimisation of the generation of leachate
BIOLOGICAL TREATMENT OF WASTE: AEROBIC 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
36	Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:		
	Waste input characteristics e.g. C to N ratio, particle size		Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste using aerobic methods of waste undertaken at the Facility
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		
	Aeration of the windrow		
	Windrow porosity, height and width		
37	Reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps. Use <u>ONE OR BOTH</u> of the following techniques:		
	a.	Use of semi-permeable membrane covers	Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste using aerobic methods of waste undertaken at the Facility
	b.	Adaptation of operations to the meteorological conditions	
BIOLOGICAL TREATMENT OF WASTE: ANAEROBIC METHODS			
38	Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:		
	Implement a manual and/or automatic monitoring system to:		
	Ensure a stable digester operation		Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste using anaerobic methods of waste undertaken at the Facility
	Minimise operational difficulties and associated odour emissions		
	Provide sufficient early warning of system failures		

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
	Windrow porosity, height and width		Not applicable: Operator has stated N/a within response as there are no activities involving the biological treatment of waste using anaerobic methods of waste undertaken at the Facility
	Monitoring and/or control of key waste and process parameters – examples below:		
	pH and alkalinity of the digester feed		
	Digester operating temperature		
	Hydraulic and organic loading rates of the digester feed		
	Volatile fatty acids and NH3 concentrations within digester & digestate		
	Biogas quantity, composition (e.g. H2S) and pressure		
	Liquid and foam levels in the digester		
MECHANICAL BIOLOGICAL TREATMENT (MBT) OF WASTE			
39	Reduce emissions to air. Generally applicable to new plants, existing plants may have layout constraints. Use BOTH of the following techniques:		Not applicable: Operator has stated N/a within response as there are no activities involving the mechanical biological treatment (MBT) of waste undertaken at the Facility
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)	
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE			

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
40	Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.		
	Monitoring the waste input		
	Content of organics, oxidising agents, metals, salts, odorous compounds	Not applicable: Operator has stated N/a within response as there are no activities involving the physico-chemical treatment of solid and/or pasty waste undertaken at the Facility	
H2 formation potential upon mixing of flue-gas treatment residues/ashes with water			
41	Reduce emissions to air of dust, organic compounds and NH3 by applying BAT 14d AND using one or a combination of the following techniques:		
	a.	Adsorption – see S6.1	Not applicable: Operator has stated N/a within response as there are no activities involving the physico-chemical treatment of solid and/or pasty waste undertaken at the Facility
	b.	Biofilter – see S6.1	
	c.	Fabric filter – see S6.1.	
	d.	Wet scrubbing – see S6.1	
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the physico-chemical treatment of solid and/or pasty waste (mg/Nm3)		
	Table 6.8. Monitoring requirements are outlined in BAT 8		
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.		

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
	Monitoring the waste input			
	Chlorinated compounds e.g. solvents or PCBs		Not applicable: Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility	
43	Reduce quantity of waste sent for disposal by using ONE OR BOTH of the following techniques:			
	a.	Material recovery e.g. organic residues in asphalt products	Not applicable: Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility	
	b.	Energy recovery		
44	Reduce emissions to air of organic compounds by applying BAT 14d AND using one or a combination of the following techniques:			
	a.	Adsorption – see S6.1	Not applicable: Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility	
	b.	Thermal oxidation – see S6.1		
	c.	Wet scrubbing – see S6.1		
The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. Monitoring requirements are outlined in BAT 8				
PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CALORIFIC VALUE				
45	Reduce emissions to air of organic compounds by applying BAT 14d AND using one or a combination of the following techniques:			
	a.	Adsorption – see S6.1	Not applicable: Operator has confirmed within response there are no activities involving the physico-chemical treatment of waste with calorific value at the Facility	
	b.	Cryogenic condensation – see S6.1		
	c.	Thermal oxidation – see S6.1		

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.	Wet scrubbing – see S6.1	
The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. Monitoring requirements are outlined in BAT 8		

REGENERATION OF SPENT SOLVENTS

46	Improve overall environmental performance by using <u>ONE OR BOTH</u> of the following techniques:	
	a.	Material recovery (by evaporation from distillation residues)
	b.	Energy recovery e.g. using distillation residues
Not applicable: Operator has confirmed within response there are no activities involving the regeneration of spent solvents undertaken at the Facility		
47	Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using a <u>combination of</u> the following techniques:	
	a.	Recirculation of process off-gases in a steam boiler. Avoid generating PCBs and/or PCDD/Fs
	b.	Adsorption – see S6.1
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs
	d.	Condensation or cryogenic condensation
	e.	Wet scrubbing – see S6.1
Not applicable: Operator has confirmed within response there are no activities involving the regeneration of spent solvents undertaken at the Facility		
The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies. Monitoring requirements are outlined in BAT 8		

BAT-AEL FOR EMISSIONS OF ORGANIC COMPOUNDS TO AIR – SECTION 4.5
(RE-REFINING OF WASTE OIL)
(PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CV)
(REGENERATION OF SPENT SOLVENTS)

BAT-AEL for channelled TVOC emissions to air from the re-refining of waste oil, physico-chemical treatment of waste with calorific value and regeneration of spent solvents (mg/Nm³)

Table 6.9 and its supporting note. Monitoring requirements are outlined in BAT 8

TVOC	5.0-30	As above
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THERMAL TREATMENT OF SPENT ACTIVATED CARBON, WASTE CATALYSTS AND EXCAVATED CONTAMINATED SOIL

Improve overall environmental performance by using ALL of the following techniques:

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- | | |
|----|--|
| a. | Heat recovery from the furnace off-gas e.g. for preheating combustion air or steam generation |
| b. | Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints. |
| c. | Process-integrated techniques to reduce emissions to air – see examples |

Not applicable: Operator has confirmed within response there are no activities involving the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil undertaken at the Facility

Reduce emissions to air of HCl, HF, dust and organic compounds by applying BAT 14d AND using one or a combination of the following techniques:

49

- | | |
|----|---|
| a. | Cyclone – see S6.1 |
| b. | Electrostatic precipitator (ESP) – see S6.1 |
| c. | Fabric filter – see S6.1 |
| d. | Wet scrubbing – see S6.1 |

Not applicable: Operator has confirmed within response there are no activities involving the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil undertaken at the Facility

	e.	Adsorption – see S6.1	
	f.	Condensation – see S6.1	
	g.	Thermal oxidation – see S6.1	
<i>Note supporting text for BAT 49g (thermal oxidation)</i> <i>Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.</i>			
WATER WASHING OF EXCAVATED CONTAMINATED SOIL			
50	Reduce emissions to air of dust and organic compounds from the storage, handling and washing steps by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:		
	a.	Adsorption – see S6.1	Not applicable: Operator has confirmed within response there are no activities involving the decontamination of equipment containing PCBs undertaken at the Facility
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
<i>Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.</i>			
Decontamination of equipment containing PCBs			
51	Reduce emissions to air of PCBs and organic compounds and improve overall environmental performance by using <u>ALL</u> of the following techniques:		
	a.	Coating of the storage and treatment areas – see examples	Not applicable: Operator has confirmed within response there are no activities involving the decontamination of equipment containing PCBs undertaken at the Facility
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	
	c.	Optimised equipment cleaning and drainage – see examples	
	d.	Control and monitoring of emission to air – see examples	

	e.	Disposal of waste treatment residues – see examples	
	f.	Recovery of solvent when solvent washing is used	
Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.			
TREATMENT OF WATER-BASED LIQUID WASTE			
52	Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.		
	Monitoring the waste input		
	Bioeliminability e.g. BOD, BOD-COD ratio, Zahn-Wellens test, biological inhibition potential	Not applicable: Operator has confirmed within response there are no water-based liquid wastes accepted at the Facility	
	Feasibility of emulsion breaking e.g. lab testing		
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	Not applicable: Operator has confirmed within response there are no water-based liquid wastes accepted at the Facility
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1.	
	d.	Wet scrubbing – see S6.1	
	BAT-AELs for channelled HCl and TVOC emissions to air from the treatment of water-based liquid waste (mg/Nm3)		
	Table 6.10 and its supporting notes. Monitoring requirements are outlined in BAT 8		
HCl	1.0-5.0	Not applicable: Operator has confirmed within response there are no water-based liquid wastes accepted at the Facility	
TVOC	3.0-20		