

# **Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016 (as amended)**

## **Decision document recording our decision-making process following review of a permit**

The Permit number is:                   EPR/BV7796IW  
The Operator is:                         Heineken UK Limited  
The Installation is:                     Royal Brewery Manchester  
This Variation Notice number is:   EPR/BV7796IW/V015

### **What this document is about**

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on best available techniques (BAT) Conclusions.

We have reviewed the permit for this installation against the BAT Conclusions for the Food, Drink and Milk Industries published on 4<sup>th</sup> December 2019 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to Installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document, we therefore address only our determination of substantive issues relating to the new BAT Conclusions.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

## **How this document is structured**

1. Our decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review
6. Annex 3 – Improvement Conditions

# 1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow the Operator to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

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

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

## 2 How we reached our decision

### 2.1 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 (a Regulation 61 Notice) on 31/01/2022 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that:

- describes the techniques that will be implemented before 4 December 2023, which will then ensure that operations meet the revised standards, or
- justifies why standards will not be met by 4 December 2023, and confirmation of the date when the operation of those processes will cease within the Installation or an explanation of why the revised BAT standards are not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised BAT standards described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61 Notice required that the Operator make a formal request for derogation from compliance with that BAT-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 Notice response from the Operator was received on 09/03/2022.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review but not that it necessarily contained all the information we would need to complete that determination.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 61 Notice response that appears to be confidential in relation to any party.

## 2.2 Review of our own information in respect to the capability of the Installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation we consider that the Operator will be able to comply with the techniques and standards described in the BAT Conclusions other than for those techniques and requirements described in BAT Conclusion BAT 6 and 18. The operator does not currently comply with the requirements of BATc6 and 18. In relation to these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions IC27 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 4 December 2023.

## 2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment and issued further information requests on 14/06/2023 relating to BATc7, BATc8, BATc10, BATc14, MCP, RHS Baseline, Air Emission, Climate change and on the 27/09/2023 relating to production capacity. A copy of the further information request was placed on our public register.

# **3 The legal framework**

The Consolidated Variation Notice will be issued under Regulations 18 and 20 of the 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 IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, 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.

## Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the Food, Drink and Milk Industries, were published by the European Commission on 4 December 2019.

There are 37 BAT Conclusions.

BAT 1 – 15 are General BAT Conclusions (Narrative BAT) applicable to all relevant Food, Drink and Milk Installations in scope.

BAT 16 – 37 are sector-specific BAT Conclusions, including Best Available Techniques Associated Emissions Levels (BAT-AELs) and Associated Environmental Performance Levels (BAT-AEPLs):

BAT 16 & 17	BAT Conclusions for Animal Feed
BAT 18 – 20	BAT Conclusions for Brewing
BAT 21 – 23	BAT Conclusions for Dairies
BAT 24	BAT Conclusions for Ethanol Production
BAT 25 & 26	BAT Conclusions for Fish and Shellfish Processing
BAT 27	BAT Conclusions for Fruit and Vegetable Processing
BAT 28	BAT Conclusions for Grain Milling
BAT 29	BAT Conclusions for Meat Processing
BAT 30 – 32	BAT Conclusions for Oilseed Processing and Vegetable Oil Refining
BAT 33	BAT Conclusions for Soft Drinks and Nectar/Fruit Juice Processed from Fruit and Vegetables
BAT 34	BAT Conclusions for Starch Production
BAT 35 – 37	BAT Conclusions for Sugar Manufacturing

This annex 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.

The overall status of compliance with the BAT conclusion is indicated in the table as:

**NA – Not Applicable**

**CC – Currently Compliant**

**FC – Compliant in the future (within 4 years of publication of BAT Conclusions)**

**NC – Not Compliant**

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
<b>GENERAL BAT CONCLUSIONS (BAT 1-15)</b>			
1	<p><b>Environmental Management System - Improve overall environmental performance.</b></p> <p>Implement an EMS that incorporates all the features as described within BATc 1.</p>	CC	<p>The operator has provided information to support compliance with BATc 1. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 1.</p> <p>The operator has an EMS externally accredited to the ISO14001 standard.</p>
2	<p><b>EMS Inventory of inputs &amp; outputs. Increase resource efficiency and reduce emissions.</b></p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p>	CC	<p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>The operator has an EMS externally accredited to the ISO14001 standard.</p>
3	<p><b>Monitoring key process parameters at key locations for emissions to water.</b></p> <p>For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (e.g. continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</p>	CC	<p>The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 3.</p> <p>Emissions to wastewater are managed by NSI Industrial O&amp;M Solutions Ltd under a separate environmental permit (EPR/ EPR/CP3531GM). However, the site does monitor the following parameters daily volume, TSS and COD.</p> <p>The above operator operates an installation permit relating to this installation.</p>
4	<p><b>Monitoring emissions to water to the required frequencies and standards.</b></p>	NA	<p>We are satisfied that BATc 4 is not applicable to this Installation.</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	<p>BAT is to monitor emissions to water with at least the frequency given [refer to BAT 4 table in BATc] and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p>		<p>There are no direct discharges to surface water other than uncontaminated surface water from site roofs and surfaces. Process effluent is treated in an onsite effluent treatment plant that is operated by a third party.</p>
5	<p><b>Monitoring channelled emissions to air to the required frequencies and standards.</b>            BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p>	FC	<p>The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are satisfied that the operator will be compliant with BATc5 by 04/12/2023.</p> <p>The operator confirmed they would be future complaint we have including monitoring requirements in line with BAT 5 for particulate emissions associated with the handling of malt and adjuncts for emission point A51 and A52 to the standard MCERTS BS EN 13284-1.</p>
6	<p><b>Energy Efficiency</b>            In order to increase energy efficiency, BAT is to use an energy efficiency plan (BAT 6a) and an appropriate combination of the common techniques listed in technique 6b within the table in the BATc.</p>	FC	<p>The operator has provided information to support compliance with BATc 6. We have assessed the information provided we are not satisfied that the operator has demonstrated compliance with BATc 6.</p> <p>The Operator has indicated that they will be compliant with BAT6 by 04/12/2023. The site annually measures and tracks Energy consumption (Thermal Energy Consumption, Electricity consumption, Water Consumption, Biogas Use, Energy Good Practices) and set targets each year.</p> <p>We consider that the operator will be future compliant with BATc 6 Improvement condition</p>

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			IC27 has been included in the permit ensure compliance is demonstrated (see Annex 3).
7	<p><b>Water and wastewater minimisation</b></p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below.</p> <ul style="list-style-type: none"> <li>(a) water recycling and/or reuse</li> <li>(b) Optimisation of water flow</li> <li>(c) Optimisation of water nozzles and hoses</li> <li>(d) Segregation of water streams</li> </ul> <p>Techniques related to cleaning operations:</p> <ul style="list-style-type: none"> <li>(e) Dry cleaning</li> <li>(f) Pigging system for pipes</li> <li>(g) High-pressure cleaning</li> <li>(h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP)</li> <li>(i) Low-pressure foam and/or gel cleaning</li> <li>(j) Optimised design and construction of equipment and process areas</li> <li>(k) Cleaning of equipment as soon as possible</li> </ul>	CC	<p>The operator has provided information to support compliance with BATc 7. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>All CIP final rinses are recovered and reused as a pre rinse for the next cycle. Performance is managed by inline conductivity probes</p> <p>Site has an environment Pillar where Water consumption is a key KPI, deployments and water savings are managed via the Pillar - examples such as the Keg washer where recently nozzles have been reduced in size to reduce water usage. Cooling towers are used across site so the site does not use towns water. Pasteurisation unit (PU) reduction plans are in place to reduce water in the can pasteurisers.</p>
8	<p><b>Prevent or reduce the use of harmful substances</b></p> <p>In order to prevent or reduce the use of harmful substances, e.g. in cleaning and disinfection, BAT is to use one or a combination of the techniques given below.</p> <ul style="list-style-type: none"> <li>(a) Proper selection of cleaning chemicals and/or disinfectants</li> <li>(b) Reuse of cleaning chemicals in cleaning-in-place (CIP)</li> <li>(c) Dry cleaning</li> <li>(d) Optimised design and construction of equipment and process areas</li> </ul>	CC	<p>The operator has provided information to support compliance with BATc 8. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8.</p> <p>The site uses Clean In Place (CIP) systems within BU1-7 and BU8-11 and within canning and kegging areas using both dry and wet cleaning of equipment. The process is optimised and continually reviewed by site.</p> <p>The site does not use any of the Priority Hazardous Substances.</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			As above, site works closely with chemical suppliers to minimise use of chemicals in all CIPs and conductivity probes are used to maximise dosing and efficiencies of chemical usage. Bulk units are all based on conductivity, and we minimise changes of tank contents based on this.
9	<p><b>Refrigerants</b></p> <p>In order to prevent emissions of ozone-depleting substances and of substances with a high global warming potential from cooling and freezing, BAT is to use refrigerants without ozone depletion potential and with a low global warming potential.</p>	CC	<p>The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 9.</p> <p>Refrigeration systems in use at the site are ammonia and glycol based. All refrigeration pipework is fitted with 50mm thick foam insulation and will be under close process control therefore optimising energy use.</p> <p>The ammonia and glycol-water systems are both closed loop with no specific emissions.</p>
10	<p><b>Resource efficiency</b></p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> <li>(a) Anaerobic digestion</li> <li>(b) Use of residues</li> <li>(c) Separation of residues</li> <li>(d) Recovery and reuse of residues from the pasteuriser</li> <li>(e) Phosphorus recovery as struvite</li> <li>(f) Use of waste water for land spreading</li> </ul>	CC	<p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p> <p>Any waste from Malt - Spent grains is taken from site as a by-product and utilised in one of 2 ways - either in an external AD plant or utilised as animal feed. Other main bi-product, Waste Yeast is utilised by a third party for Yeast extract production or deactivated and sent off site as animal feed.</p>
11	<p><b>Waste water buffer storage</b></p> <p>In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	NA	We are satisfied that BATc 11 is not applicable to this Installation.

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			<p>Wastewater from the site flows to the adjacent wastewater treatment facility which is managed by NSI Industrial O&amp;M Solutions Ltd under a separate environmental permit.</p> <p>The above operator operates an installation permit relating to this installation</p>
12	<p><b>Emissions to water – treatment</b></p> <p>In order to reduce emissions to water, BAT is to use an appropriate combination of the techniques given below.</p> <p>Preliminary, primary and general treatment</p> <p>(a) Equalisation</p> <p>(b) Neutralisation</p> <p>(c) Physical separate (e.g. screens, sieves, primary settlement tanks etc)</p> <p>Aerobic and/or anaerobic treatment (secondary treatment)</p> <p>(d) Aerobic and/or anaerobic treatment (e.g. activated sludge, aerobic lagoon etc)</p> <p>(e) Nitrification and/or denitrification</p> <p>(f) Partial nitrification - anaerobic ammonium oxidation</p> <p>Phosphorus recovery and/or removal</p> <p>(g) Phosphorus recovery as struvite</p> <p>(h) Precipitation</p> <p>(i) Enhanced biological phosphorus removal</p> <p>Final solids removal</p> <p>(j) Coagulation and flocculation</p> <p>(k) Sedimentation</p> <p>(l) Filtration (eg sand filtration, microfiltration, ultrafiltration)</p> <p>(m) Flotation</p>	NA	<p>We are satisfied that BATc 12 is not applicable to this Installation.</p> <p>The site is a multi-operator installation, the treatment of wastewater from the site is carried out by the second operator in charge of the effluent treatment plant which is operated by NSI Industrial O&amp;M Solutions Ltd under a separate environmental permit EPR/CP3531GM.</p>
13	<p><b>Noise management plan</b></p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as</p>	CC	<p>The operator has provided information to support compliance with BATc 13. We have assessed the information provided and we are</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	<p>part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> <li>- a protocol containing actions and timelines;</li> <li>- a protocol for conducting noise emissions monitoring;</li> <li>- a protocol for response to identified noise events, e.g. complaints;</li> <li>- a noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.</li> </ul>		<p>satisfied that the operator has demonstrated compliance with BATc 13.</p> <p>The Site has a noise management plan (dated February 2019) the operator has stated that this is regularly reviewed and considered in line with noise monitoring which is undertaken annually. In addition, any incidents involving noise are reviewed using the site's incident investigation system. The noise management plan has not been assessed as part of this review.</p>
14	<p><b>Noise management</b></p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</p> <ul style="list-style-type: none"> <li>(a) Appropriate location of equipment and buildings</li> <li>(b) Operational measures</li> <li>(c) Low-noise equipment</li> <li>(d) Noise control equipment</li> <li>(e) Noise abatement</li> </ul>	CC	<p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>There is less activity during night hours and the fleet of FLT's are electric therefore reduced noise emission.</p> <p>The site also completes daily night tie walk rounds of all 3 operational areas for a noise review/ check. These are recorded and actioned upon if anything is detected.</p>
15	<p><b>Odour Management</b></p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> <li>- a protocol containing actions and timelines;</li> <li>- a protocol for conducting odour monitoring.</li> <li>- a protocol for response to identified odour incidents e.g. complaints;</li> </ul>	NA	<p>We are satisfied that BATc 15 is not applicable to this Installation.</p> <p>BAT 15 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated, or if forms part of an existing permit requirement.</p> <p>There is no existing permit requirement, and the site has no recent history of odour complaints therefore an odour management plan is not required.</p>

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	- an odour prevention and reduction programme designed to identify the source(s); to measure/estimate odour exposure: to characterise the contributions of the sources; and to implement prevention and/or reduction measures.														
<b>BREWING BAT CONCLUSIONS (BAT 18 – 20)</b>															
18	<p><b>Energy efficiency – Brewing Sector</b></p> <p>In order to increase energy efficiency, BAT is to use an appropriate combination of the techniques specified in BAT 6 and of the techniques given below.</p> <table border="1" data-bbox="282 580 1227 967"> <thead> <tr> <th data-bbox="282 580 452 628">Technique</th> <th data-bbox="452 580 680 628">Description</th> <th data-bbox="680 580 1227 628">Applicability</th> </tr> </thead> <tbody> <tr> <td data-bbox="282 628 452 743">(a) Mashing-in at higher temperatures</td> <td data-bbox="452 628 680 743">The mashing-in of the grain is carried out at temperatures of approximately 60 °C, which reduces the use of cold water.</td> <td data-bbox="680 628 1227 743">May not be applicable due to the product specifications.</td> </tr> <tr> <td data-bbox="282 743 452 874">(b) Decrease of the evaporation rate during wort boiling</td> <td data-bbox="452 743 680 874">The evaporation rate can be reduced from 10 % down to approximately 4 % per hour (e.g. by two-phase boiling systems, dynamic low-pressure boiling).</td> <td data-bbox="680 743 1227 874"></td> </tr> <tr> <td data-bbox="282 874 452 967">(c) Increase of the degree of high-gravity brewing</td> <td data-bbox="452 874 680 967">Production of concentrated wort, which reduces its volume and thereby saves energy.</td> <td data-bbox="680 874 1227 967"></td> </tr> </tbody> </table> <p>Applicable in addition to BAT6</p>	Technique	Description	Applicability	(a) Mashing-in at higher temperatures	The mashing-in of the grain is carried out at temperatures of approximately 60 °C, which reduces the use of cold water.	May not be applicable due to the product specifications.	(b) Decrease of the evaporation rate during wort boiling	The evaporation rate can be reduced from 10 % down to approximately 4 % per hour (e.g. by two-phase boiling systems, dynamic low-pressure boiling).		(c) Increase of the degree of high-gravity brewing	Production of concentrated wort, which reduces its volume and thereby saves energy.		<b>FC</b>	<p>Operator have indicated they will be compliant by 04 Dec. 2023.</p> <p>We have included improvement condition IC27 to ensure the operator meets compliance. The operator is required to complete the improvement conditions and demonstrate compliance with BAT18 by the compliance date.</p>
Technique	Description	Applicability													
(a) Mashing-in at higher temperatures	The mashing-in of the grain is carried out at temperatures of approximately 60 °C, which reduces the use of cold water.	May not be applicable due to the product specifications.													
(b) Decrease of the evaporation rate during wort boiling	The evaporation rate can be reduced from 10 % down to approximately 4 % per hour (e.g. by two-phase boiling systems, dynamic low-pressure boiling).														
(c) Increase of the degree of high-gravity brewing	Production of concentrated wort, which reduces its volume and thereby saves energy.														
19	In order to reduce the quantity of waste sent for disposal, BAT is to use one or a combination of the techniques given below.	<b>CC</b>	<p>The operator has provided information to support compliance with BATc 19. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 19.</p> <p>Other main biproduct, Waste Yeast is utilised by a third party operator for yeast extract production or deactivated and sent off site as animal feed.</p>												

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(b)	Recovery and (re)use of natural filter material  After chemical, enzymatic or thermal treatment, natural filter material (e.g. diatomaceous earth) may be partially reused in the filtration process. Natural filter material can also be used, e.g. as a soil improver.														
20	In order to reduce channelled dust emissions to air, BAT is to use a bag filter or both a cyclone and a bag filter.	<b>CC</b>	<p>The operator has provided information to support compliance with BATc 20. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 20.</p> <p>Bag filters are used on site to help reduce emissions to air.</p>												
20	<p>BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from handling and processing of malt and adjuncts</p> <table border="1"> <thead> <tr> <th data-bbox="277 963 456 1118">Parameter</th> <th data-bbox="456 963 645 1118">Description</th> <th colspan="2" data-bbox="645 963 1196 1050">BAT-AEL (average over the sampling period)</th> </tr> <tr> <td colspan="2"></td> <th data-bbox="645 1050 891 1118">New plants</th> <th data-bbox="891 1050 1196 1118">Existing plants</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 1118 456 1182">Dust</td> <td data-bbox="456 1118 645 1182">mg/Nm<sup>3</sup></td> <td data-bbox="645 1118 891 1182">&lt;2 – 5</td> <td data-bbox="891 1118 1196 1182">&lt;2 – 10</td> </tr> </tbody> </table> <p>The associated monitoring is given in BAT 5.</p>	Parameter	Description	BAT-AEL (average over the sampling period)				New plants	Existing plants	Dust	mg/Nm <sup>3</sup>	<2 – 5	<2 – 10	<b>CC</b>	<p>The operator has not previously been required to monitor air emissions so did not provide evidence of compliance. However, we consider the operator to be compliant from the issue of this permit.</p> <p>We have integrated the BAT-AELs by including the limit of 10mg/m<sup>3</sup> for particulate matter for the emission point A51 and A52.</p>
Parameter	Description	BAT-AEL (average over the sampling period)													
		New plants	Existing plants												
Dust	mg/Nm <sup>3</sup>	<2 – 5	<2 – 10												
<b>Brewing Sector Environmental Performance Levels</b>															

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement				
EPL	<p><b>Environmental Performance Level – Energy consumption for the brewing sector</b></p> <table border="1" data-bbox="277 336 1182 427"> <thead> <tr> <th data-bbox="277 336 636 379">Unit</th> <th data-bbox="636 336 1182 379">Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 379 636 427">MWh/hl of products</td> <td data-bbox="636 379 1182 427">0.02 – 0.05</td> </tr> </tbody> </table>	Unit	Specific energy consumption (yearly average)	MWh/hl of products	0.02 – 0.05	CC	<p>The operator has provided information to support compliance with the EPL for energy consumption. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance against the EPL.</p> <p>The Operator has indicated the sites specific energy consumption was 0.006 MWh/hl of products for 2021 which is within the target range level of 0.02 – 0.05 MWh/hl of products.</p>
	Unit	Specific energy consumption (yearly average)					
MWh/hl of products	0.02 – 0.05						
EPL	<p><b>Environmental Performance Level – Specific waste water discharge for the brewing sector</b></p> <table border="1" data-bbox="277 794 1182 885"> <thead> <tr> <th data-bbox="277 794 636 837">Unit</th> <th data-bbox="636 794 1182 837">Specific waste water discharge (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 837 636 885">m<sup>3</sup>/hl of products</td> <td data-bbox="636 837 1182 885">0.15 – 0.50</td> </tr> </tbody> </table>	Unit	Specific waste water discharge (yearly average)	m <sup>3</sup> /hl of products	0.15 – 0.50	CC	<p>The operator has provided information to support compliance with the EPL for specific wastewater discharge. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance against the EPL.</p> <p>The Operator has indicated the sites specific wastewater discharge was 0.12 m<sup>3</sup>/hl of products for 2021 which is within the target range level of 0.15 – 0.50 m<sup>3</sup>/hl of products.</p>
	Unit	Specific waste water discharge (yearly average)					
m <sup>3</sup> /hl of products	0.15 – 0.50						

## **Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review**

### **Updating permit during permit review consolidation**

- Activity name
- Introductory note
- Site plan
- Table S1.1 overhaul
  - Activity Reference (AR) renumbering
  - Updated listed activities
  - Addition of production capacity
  - Directly associated activities (DAAs) standardisation

We have updated permit conditions to those in the current generic permit template as a part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.

### **Capacity Threshold**

The Environment Agency is looking to draw a “line in the sand” for permitted production capacity; a common understanding between the Operator and regulator for the emissions associated with a (maximum) level of production, whereby the maximum emissions have been demonstrated as causing no significant environmental impact.

We have included a permitted production level (capacity) within table S1.1 of the permit for the section 6.8 listed activity and we need to be confident that the level of emissions associated with this production level have been demonstrated to be acceptable.

The Operator has completed a H1 assessment of emissions for typical figures of production at the time of permitting.

The H1 assessment is not valid for the maximum capacity stated within the permit or if production is now higher. We have included an improvement condition within the permit (IC28) which requires the operator to revisit their H1 risk assessment for particulate emissions to air at the capacity limit figure that is now stated within table S1.1 of the permit.

### **Emissions to Air**

We asked the operator to list all emission points to air from the installation in the Regulation 61 notice. And to provide a site plan indicating the locations of all air emission points.

The operator has provided an up to date air emission plan.

### Existing Medium Combustion Plant (1MW-50MW)

We asked the Operator to provide information on all combustion plant on site in the Regulation 61 Notice as follows:

- Number of combustion plant (CHP engines, back-up generators, boilers);
- Size of combustion plant – rated thermal input (MWth)
- Date each combustion plant came into operation

The Operator provided the information in the table below:

#### Boilers

1. Rated thermal input (MW) of the medium combustion plant.	10.56 MWth	10.56 MWth	10.56 MWth	10.56 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler	Boiler	Boiler	Boiler
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural gas, biogas and gas oil	Natural gas, biogas and gas oil	Natural gas and gas oil	Natural gas and gas oil
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	1973	1977	1977	1992

We have reviewed the information provided and we consider that the declared combustion plant qualify as “existing” medium combustion plant.

For existing medium combustion plant with a rated thermal input greater than 5 MW, the emission limit values set out in tables 2 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2025.

We have included the appropriate emission limit values for existing medium combustion plant as part of this permit review. See Table S3.1 in the permit. We have also included a new condition 3.1.4 within the permit which specifies the monitoring requirements for the combustion plant in accordance with the MCPD.

#### Particulate Emissions

BAT-AELs are derived for those substances identified as key environmental issues during the BREF review process.

We have implemented the relevant emission limit value (ELV) from the date of permit issue for emission points A51 and A52 against BAT 20 for dust emissions abated via bag filters.

We have added an improvement condition (IC29) for size fractionation of particulate emissions because a BAT-AEL applies for dust emissions to air. The justification for this IC is that there are a number of activities within the FDM sector which may result in release of particulates to air e.g. drying, milling and grinding. Overall, there is little available information on how much fine particulates are released. This IC is a one-off exercise requiring operators to monitor and report on the fractions of fine particulate (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions and increase our understanding of potential health effects. Where BAT-AELS may apply to multiple emission points e.g. grain milling, we may accept limited representative monitoring rather than expecting them to monitor every single emission point.

### **Emissions to Water and implementing the requirements of the Water Framework Directive**

We asked the Operator to provide information on all emissions to water at the installation in the Regulation 61 Notice as follows;

- Identify any effluents which discharge directly to surface or groundwater;
- Provide an assessment of volume and quality, including results of any monitoring data available;
- and for any discharges to water / soakaway whether a recent assessment of the feasibility of connection to sewer has been carried out.

The operator has previously provided assessments for all emissions to water at the installation. The operator declares there has been no change to activities and subsequent effluents generated at the installation since this risk assessment was taken. Consequently, we agree that the original risk assessments remain valid at this time.

### **Soil & groundwater risk assessment (baseline report)**

The IED requires that the operator of any IED installation using, producing or releasing “relevant hazardous substances” (RHS) shall, having regarded the possibility that they might cause pollution of soil and groundwater, submit a “baseline report” with its permit application. The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities. It must enable a quantified comparison to be made between the baseline and the state of the site at surrender.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site’s current or approved future use. To do this, the Operator has to submit a surrender application to us, which we will not grant unless and until we are satisfied that these requirements have been met.

The Operator submitted a site condition report [Document reference and date] during the original application received on 24/02/2005. The site condition report included a report on the baseline conditions as required by Article 22. We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time.

### **Hazardous Substances**

Hazardous substances are those defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures

The operator has provided a short risk assessment on the hazardous substances stored and used at the installation. The risk assessment was a stage 1-3 assessment as detailed within EC Commission Guidance 2014/C 136/03.

The stage 1 assessment identified the hazardous substances used / stored on site. The stage 2 assessment identified if hazardous substances are capable of causing pollution. If they are capable of causing pollution they are then termed Relevant Hazardous Substances (RHS). The Stage 3 assessment identified if pollution prevention measures are fit for purpose in areas where hazardous substances are used / stored. This includes drains as well.

The outcomes of the three stage assessment identified that pollution of soil / groundwater to be possible and monitoring is required for these hazardous substance(s).

The operator is required to submit a relevant hazardous substances monitoring plan for review to the Environment Agency via improvement condition (IC30).

### **Climate Change Adaptation**

The operator has considered if the site is at risk of impacts from adverse weather (flooding, unavailability of land for land spreading, prolonged dry weather / drought) .

The operator has identified the installation as likely to be or has been affected by flooding & prolonged dry weather/ drought, which we consider to be a severe weather event.

We do not consider the operator to have submitted a suitable climate change adaptation plan for the installation. We have included an improvement condition into the permit (IC31) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

## **Containment**

We asked the Operator via the Regulation 61 Notice to provide details of the each above ground tanks which contain potentially polluting liquids at the site, including tanks associated with the effluent treatment process where applicable.

The Operator provided details of all tanks;

- Tank reference/name
- Contents
- Capacity (litres)
- Location
- Construction material(s) of each tank
- The bunding specification including
  - Whether the tank is bunded
  - If the bund is shared with other tanks
  - The capacity of the bund
  - The bund capacity as % of tank capacity
  - Construction material of the bund
  - Whether the bund has a drain point
  - Whether any pipes penetrate the bund wall
- Details of overfill prevention
- Drainage arrangements outside of bunded areas
- Tank filling/emptying mitigation measures (drips/splashes)
- Leak detection measures
- Details of when last bund integrity test was carried out
- Maintenance measures in place for tank and bund (inspections)
- How the bund is emptied
- Details of tertiary containment

and whether the onsite tanks currently meet the relevant standard in the Ciria “Containment systems for the prevention of pollution (C736)” report.

We reviewed the information provided by the operator. We are satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736.

### Annex 3: Improvement Conditions

Based on the information in the Operator’s Regulation 61 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document (Annex 1 or Annex 2).

Previous improvement conditions marked as complete in the previous permit.

<b>Superseded Improvement Conditions – Removed from permit as marked as “complete”</b>	
<b>Reference</b>	<b>Improvement Condition</b>
1 - 9	Completed.
10 - 16	No longer need to be completed as a result of variation EPR/BV7796IW/V006.
17	The operator shall complete HAZOPs prior to commissioning new cleaning in place infrastructure introduced by Application EPR/BV7796IW/V007. The operator shall submit the study to the Environment Agency for approval.
18	The operator shall develop a noise management plan in line with the Environment Agency’s Horizontal Guidance for Noise H3 Part 2 Noise Assessment and Control with particular regard to Section 3.3.4 and Appendix 4. The proposed traffic management plan should also form a part of this plan.
19	<p>Once:</p> <ul style="list-style-type: none"> <li>- the mash filters are operating,</li> <li>- production is at the increased capacity,</li> <li>- the new refrigeration units, fermentation vessels and yeast propagation vessels are commissioned and operational (reference permit variation, EPR/BV7796IW/V010),</li> <li>- the new refrigeration unit, two hybrid cooling towers are commissioned and operational and relocation of cooling tower CT14 is completed (reference permit variation, EPR/BV7796IW/V011),</li> </ul> <p>the operator shall carry out detailed monitoring and assessment of noise at the facility during normal operation in accordance with BS4142:2014 (Rating industrial noise affecting mixed residential and industrial areas) and BS7445:2003 (Description and measurement of environmental noise) to quantify the noise on site and, if necessary, identify additional measures to ensure noise levels do not cause pollution outside the site boundary. The operator shall provide a report to the Environment Agency detailing noise survey results and include a timetable for the implementation of any recommendations made as a result of the noise survey.</p> <p>Following this, the operator shall update the Noise Management Plan described in Improvement Requirement 18, which identifies and minimises the risks of pollution from noise and vibration. The operator shall implement the approved Noise Management Plan, from the date of approval by the Environment Agency.</p>

20	<p>The operator shall carry out an assessment of surfacing, containment measures and subsurface structures and their potential to cause fugitive emissions to surface water and groundwater. The assessment will take into account the requirements of guidance note 'How to Comply' and also include:</p> <ul style="list-style-type: none"> <li>• A full drainage survey (drainage survey report, drain camera work and dye testing).</li> <li>• The establishment of planned preventative maintenance procedures for the drainage system to act on the drainage engineers' recommendations.</li> </ul> <p>A written report summarising the findings shall be submitted to the Environment Agency. Where improvements can be made, the operator shall provide an implementation plan with a timescale agreed with the Environment Agency.</p>
21	The operator shall complete a waste minimisation audit including reference to the requirements set out in guidance note EPR S6.10. Upon completion of the audit a summary of the document shall be submitted to the Environment Agency in writing.
22	The operator shall complete a water efficiency audit including reference to the requirements set out in guidance note EPR S6.10 and consideration of the potential for re-use of treated effluent within the process. Upon completion of the audit a summary of the document shall be submitted to the Environment Agency in writing.
23	The operator shall carry out an energy efficiency audit including reference to the requirements set out in guidance note EPR S6.10. Upon completion of the audit a summary of the document shall be submitted to the Environment Agency in writing.
24	The operator shall submit a report on the water and energy efficiency and the waste generation following the installation of the mash filters and stabilisation of the production process.
25	The operator shall provide written notification to the Environment Agency of the date(s) when commissioning of the new refrigeration units, yeast propagation vessels and fermentation vessel block is completed.
26	<p>Following commissioning of the new refrigeration units, yeast propagation vessels and fermentation vessel block, the operator shall submit a written report to the Environment Agency for approval detailing the outcome of the commissioning programme. The report shall include for approval by the Environment Agency:</p> <p>Identification of any changes to the operating techniques provided in the application EPR/BV7796IW/V010.</p>

The following improvement conditions have added to the permit as a result of the variation.

<b>Improvement programme requirements</b>		
<b>Reference</b>	<b>Reason for inclusion</b>	<b>Justification of deadline</b>
IC27	The Operator shall confirm in writing to the Environment Agency that the Narrative BAT	29/02/2024

	requirements for the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 6 and 18 were in place on or before 4 December 2023. Refer to BAT Conclusions for a full description of the BAT requirement.	(1 month from permit issue)
IC28	The operator shall review and update the H1 risk assessment for particulate emissions to air at the capacity levels stated within table S1.1 of this permit. The H1 shall be submitted to the Environment Agency for review.	30/01/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC29	The Operator shall submit a written report to the Environment Agency of monitoring carried out to determine the size distribution of particulate matter in the exhaust gas emissions to air from emission point A51 and A52, identifying the fractions within the PM10 and PM2.5 ranges. The monitoring shall be carried out under representative operating conditions and shall be in accordance with EN ISO 23210 unless otherwise agreed with the Environment Agency.	30/01/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC30	The operator shall produce a monitoring plan detailing how the management of relevant hazardous substances which did not screen out as low risk, based on the RHS baseline assessment, will be maintained and monitored to mitigate the risks of pollution. The plan shall be submitted for approval.  The plan shall be implemented in accordance with the Environment Agency's written approval, including timescales to undertake any infrastructure improvements.	30/01/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC31	The operator shall produce a climate change adaptation plan, which will form part of the EMS. The plan shall include, but not be limited to: <ul style="list-style-type: none"> <li>• Details of how the installation has or could be affected by severe weather;</li> <li>• The scale of the impact of severe weather on the operations within the installation;</li> <li>• An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation.</li> </ul> The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	30/01/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency