

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/BT2815IP
The Operator is: Heineken UK Limited
The Installation is: John Smiths Brewery Tadcaster
This Variation Notice number is: EPR/BT2815IP/V012

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 4th 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 07/06/2022 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 24/10/2022

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 have no reason to consider that the Operator will not be able to comply with the techniques and standards described in the BAT Conclusions.

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 a further information request on 18/07/2023 relating to MCP, RHS, Containment, BAT AELs, Production Capacity, EPL, and Site plan. 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
GENERAL BAT CONCLUSIONS (BAT 1-15)			
1	<p>Environmental Management System - Improve overall environmental performance.</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>EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.</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>Monitoring key process parameters at key locations for emissions to water.</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>This site is a multi-operator installation, wastewater is sent to an effluent treatment plant (ETP) operated by NSI Industrial O&M Solutions Ltd, under the environmental permit EPR/AP3035KM. The site monitors continuously for TOC, Temperature and pH, prior to discharge to the ETP.</p>
4	<p>Monitoring emissions to water to the required frequencies and standards.</p> <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</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
	not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.		This BATc is concerned with emissions to water of process effluent and this installation does not have such discharges. The effluent produced is treated in the onsite ETP operated by a different operator NSI Industrial O&M Solutions Ltd, under the environmental permit EPR/AP3035KM.
5	<p>Monitoring channelled emissions to air to the required frequencies and standards.</p> <p>BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p>	CC	<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 has demonstrated compliance with BATc 5.</p> <p>We have including monitoring requires in line with BAT 5 for the monitoring of particulate emissions from the handling of malt and adjuncts for emission point A11 to the standard MCERTS BS EN 13284-1.</p>
6	<p>Energy Efficiency</p> <p>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>	CC	<p>The operator has provided information to support compliance with BATc 6. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 6.</p> <p>The operator has an energy management system which is integrated into their EMS and employs an appropriate combination of techniques on site such as solar energy, cogeneration, and steam distribution optimisation etc.</p>
7	<p>Water and wastewater minimisation</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> <p>(a) water recycling and/or reuse</p>	CC	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

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) Optimisation of water flow (c) Optimisation of water nozzles and hoses (d) Segregation of water streams Techniques related to cleaning operations: (e) Dry cleaning (f) Pigging system for pipes (g) High-pressure cleaning (h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP) (i) Low-pressure foam and/or gel cleaning (j) Optimised design and construction of equipment and process areas (k) Cleaning of equipment as soon as possible		Operators employs BAT7a which involves the reuse of pasteurisers on-site water over the period of a month up to 10 times before being quenched with freshwater. Significant water saving as two tunnel pasteurisers on site. and a combination of 7b such as optimisation of water flow, optimisation of the boiler TDS to reduce blow down water loss, use of high pressure cleaning hoses throughout site to increase efficiency in cleaning, foaming cleaning is used on-site etc.
8	Prevent or reduce the use of harmful substances 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. (a) Proper selection of cleaning chemicals and/or disinfectants (b) Reuse of cleaning chemicals in cleaning-in-place (CIP) (c) Dry cleaning (d) Optimised design and construction of equipment and process areas	CC	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 Operator employs combination of techniques such as ensuring all chemicals for cleaning are purchased through Eco Lab - one single provider - who provides an assessment and review of the tasks requiring cleaning products and provide solutions to their cleaning supply needs. There is then a COSHH RAM completed by the site on each individual cleaning product. And reuse of cleaning chemicals for CIP cleaning is used where appropriate on site.
9	Refrigerants 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.	CC	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.

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>In terms of process cooling, the main process cooling on-site uses anhydrous ammonia. No F-gases are used in refrigerant and coolant systems on site. They are only used in the air conditioning and CU's - using R404A, R410A, R407C and R32. Details are retained in the site's F-gas register. R404A - From 1st January 2020, this can no longer be used or replaced so will be phased out on site. R410A is not depleting to the ozone and is a more efficient heat absorber than R22. R407C is a direct replacement for R22 and has zero ozone depleting properties. R32 - used in air con on site has a far lower GWP than the HFC refrigerants it replaces.</p>
10	<p>Resource efficiency In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below: (a) Anaerobic digestion (b) Use of residues (c) Separation of residues (d) Recovery and reuse of residues from the pasteuriser (e) Phosphorus recovery as struvite (f) Use of waste water for land spreading</p>	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>Operator employs combination of techniques such as ensuring all yeast is either recovered or reused on site. Some is re-pitched for reuse on-site and what is not is recovered and pressed for resell when there is demand. There is no use of natural filter material on-site. Spent Grain is recovered from the process and is sent to be used as cattle feed. Organic waste is sent for land- spreading.</p>
11	<p>Waste water buffer storage In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	CC	<p>The operator has provided information to support compliance with BATc 11. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 11.</p>

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			<p>Wastewater from the site flows to the adjacent wastewater treatment facility which is managed by), NSI Industrial O&M Solutions Ltd under a separate environmental permit (EPR/AP3035KM).</p> <p>There is a large balance tank at the installation which effluent is able to divert to offering sufficient buffer storage.</p>
12	<p>Emissions to water – treatment</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 (eg screens, sieves, primary settlement tanks etc)</p> <p>Aerobic and/or anaerobic treatment (secondary treatment)</p> <p>(d) Aerobic and/or anaerobic treatment (eg 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>This site is a multi-operator installation, the treatment of the process effluent is carried out by the second Operator in charge of the effluent treatment plant (ETP), NSI Industrial O&M Solutions Ltd, under the environmental permit EPR/AP3035KM therefore, BATc12 is not applicable to this facility.</p> <p>The site also discharges uncontaminated surface water runoff, air compressor, cooling waters, and condensate from the reverse osmosis plant to the River Wharfe via a 3rd party surface water sewer (Yorkshire Water sewer) via two emission points.</p>
12	<p>Emissions to water – treatment</p> <p>BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body</p>	NA	<p>We are satisfied that BATc 12 (BAT-AELs) is not applicable to this Installation.</p>

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	<table border="1" data-bbox="280 288 1086 609"> <thead> <tr> <th>Parameter</th> <th>BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾</td> <td>25-100 mg/l ⁽¹⁹⁾</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>4-50 mg/l ⁽²⁰⁾</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td>2-20 mg/l ⁽²¹⁾ ⁽²²⁾</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td>0,2-2 mg/l ⁽²³⁾</td> </tr> </tbody> </table>	Parameter	BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)	Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾	25-100 mg/l ⁽¹⁹⁾	Total suspended solids (TSS)	4-50 mg/l ⁽²⁰⁾	Total nitrogen (TN)	2-20 mg/l ⁽²¹⁾ ⁽²²⁾	Total phosphorus (TP)	0,2-2 mg/l ⁽²³⁾		<p>This site is a multi-operator installation, the treatment of the process effluent is carried out by the second Operator in charge of the effluent treatment plant (ETP), NSI Industrial O&M Solutions Ltd, under the environmental permit EPR/AP3035KM therefore, BATc12 is not applicable to this facility.</p> <p>The site also discharges uncontaminated surface water runoff, air compressor, cooling waters, and condensate from the reverse osmosis plant to the River Wharfe via a 3rd party surface water sewer (Yorkshire Water sewer) via two emission points.</p> <p>Reverse Osmosis condensate is discharged to surface water however, this is not classified as a process effluent therefore the BAT-AELs are considered not applicable.</p>
Parameter	BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)												
Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾	25-100 mg/l ⁽¹⁹⁾												
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Total nitrogen (TN)	2-20 mg/l ⁽²¹⁾ ⁽²²⁾												
Total phosphorus (TP)	0,2-2 mg/l ⁽²³⁾												
13	<p>Noise management plan</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 part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting noise emissions monitoring; - a protocol for response to identified noise events, eg complaints; - 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. 	CC	<p>The operator has provided information to support compliance with BATc 13. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 13.</p> <p>The site has a noise management plan titled 'John Smith's Brewery, Tadcaster Environment Permit BT2185 NOISE MANAGEMENT PLAN Updated January 2015'.</p> <p>The noise management plan covers:</p> <ul style="list-style-type: none"> - Monitoring methodology. - Details of noise survey locations and receptors - A commitment to annual noise monitoring and monitoring after installation of new plant and equipment. 										

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			<ul style="list-style-type: none"> - Noise sources identified and their contribution to site noise. - Refers to the site's complaints procedure and commits to investigate thoroughly noise complaints and to implement mitigation measures where appropriate.
14	<p>Noise management</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"> (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement 	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>Operator employs a number of techniques on site to reduce the levels of noise.</p> <ul style="list-style-type: none"> (a) - some equipment (such as vents) have been moved to the opposite side of buildings to noise sensitive receptors. (b) identifies operational measures such as maintenance of equipment, vehicle movement reduction. (c) Plant room doors acoustically designed to reduce noise break out, external pumps have been selected to specifications to reduce external noise. (d) acoustic shielding has been employed on doorways around the refrigeration plant and on the roof. (e) noisy generating vents moved to the other side of buildings to act as a noise shield.
15	<p>Odour Management</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"> - a protocol containing actions and timelines; - a protocol for conducting odour monitoring. 	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>

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	<p>- a protocol for response to identified odour incidents eg complaints;</p> <p>- 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.</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>												
BREWING BAT CONCLUSIONS (BAT 18 – 20)															
18	<p>Energy efficiency – Brewing Sector</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.		CC	<p>The operator has provided information to support compliance with BATc 18. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 18.</p> <p>Operator employs a combination of techniques such as ensuring the site carries out mashing in at higher temperatures - this is product led, and is done to the requirements of the recipes to achieve the desired product.</p> <p>(b) 7 years ago the site reduced the evaporation rate during wort boiling down from 7% to 3.5%. Due to the restrictions of the current plant the site are unable to go lower.</p> <p>(c) There has been an increase in the degree of high gravity brewing on-site, however, this is brand specific, with different techniques used for different products.</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	<p>In order to reduce the quantity of waste sent for disposal, BAT is to use one or a combination of the techniques given below.</p>	CC	<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>Operator employs a combination of techniques such as ensuring all yeast is either recovered or reused on site. Some is re-pitched for reuse</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										
	<table border="1"> <thead> <tr> <th data-bbox="277 252 524 300">Technique</th> <th data-bbox="524 252 1236 300">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 300 524 456">(a)</td> <td data-bbox="524 300 1236 456">Recovery and (re)use of yeast after fermentation After fermentation, yeast is collected and can be partially reused in the fermentation process and/or may be further used for multiple purposes, e.g. as animal feed, in the pharmaceutical industry, as a food ingredient, in an anaerobic waste water treatment plant for biogas production.</td> </tr> <tr> <td data-bbox="277 456 524 585">(b)</td> <td data-bbox="524 456 1236 585">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.</td> </tr> </tbody> </table>	Technique	Description	(a)	Recovery and (re)use of yeast after fermentation After fermentation, yeast is collected and can be partially reused in the fermentation process and/or may be further used for multiple purposes, e.g. as animal feed, in the pharmaceutical industry, as a food ingredient, in an anaerobic waste water treatment plant for biogas production.	(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.		<p>on-site and what is not is recovered and pressed for resell when there is demand.</p> <p>There is no use of natural filter material on-site. Spent Grain is recovered from the process and is sent to be used as cattle feed.</p>				
Technique	Description												
(a)	Recovery and (re)use of yeast after fermentation After fermentation, yeast is collected and can be partially reused in the fermentation process and/or may be further used for multiple purposes, e.g. as animal feed, in the pharmaceutical industry, as a food ingredient, in an anaerobic waste water treatment plant for biogas production.												
(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	<p>In order to reduce channelled dust emissions to air, BAT is to use a bag filter or both a cyclone and a bag filter.</p>	CC	<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>Operator employs the use of Bag filter to reduce channelled dust emissions to air arising from the handling of malt.</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="277 995 456 1147" rowspan="2">Parameter</th> <th data-bbox="456 995 645 1147" rowspan="2">Description</th> <th colspan="2" data-bbox="645 995 1196 1083">BAT-AEL (average over the sampling period)</th> </tr> <tr> <th data-bbox="645 1083 893 1147">New plants</th> <th data-bbox="893 1083 1196 1147">Existing plants</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 1147 456 1211">Dust</td> <td data-bbox="456 1147 645 1211">mg/Nm³</td> <td data-bbox="645 1147 893 1211"><2 – 5</td> <td data-bbox="893 1147 1196 1211"><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 ³	<2 – 5	<2 – 10	CC	<p>The operator has indicated future compliance for BATc 20 however, have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 20.</p> <p>We have integrated the requirements of BATc 20 by including the limit of 10mg/m³ for emission point A11 as this is an existing plant.</p>
Parameter	Description			BAT-AEL (average over the sampling period)									
		New plants	Existing plants										
Dust	mg/Nm ³	<2 – 5	<2 – 10										

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				
Brewing Sector Environmental Performance Levels							
EPL	<p>Environmental Performance Level – Energy consumption for the brewing sector</p> <table border="1" data-bbox="277 395 1182 485"> <thead> <tr> <th data-bbox="277 395 636 440">Unit</th> <th data-bbox="636 395 1182 440">Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 440 636 485">MWh/hl of products</td> <td data-bbox="636 440 1182 485">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 energy EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the energy consumption for Brewing.</p> <p>The sites energy consumption for 2021 was 0.024MWh/t, which is within the 0.02 - 0.05 MWh/hl of products (yearly avg) target.</p>
	Unit	Specific energy consumption (yearly average)					
MWh/hl of products	0.02 – 0.05						
EPL	<p>Environmental Performance Level – Specific waste water discharge for the brewing sector</p> <table border="1" data-bbox="277 820 1182 909"> <thead> <tr> <th data-bbox="277 820 636 865">Unit</th> <th data-bbox="636 820 1182 865">Specific waste water discharge (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 865 636 909">m³/hl of products</td> <td data-bbox="636 865 1182 909">0.15 – 0.50</td> </tr> </tbody> </table>	Unit	Specific waste water discharge (yearly average)	m ³ /hl of products	0.15 – 0.50	CC	<p>The operator has provided information to support compliance with the energy EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the energy consumption for Brewing.</p> <p>The sites energy consumption for 2021 was 0.44Wh/t, which is within the 0.15 - 0.5 m3/hl of products (yearly avg) target.</p>
	Unit	Specific waste water discharge (yearly average)					
m ³ /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 (updated)
- 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.

The operator confirmed 2 boilers previously included in the permit have been disconnected and decommissioned. Due to the removal of these combustion plants the burning of any fuel in appliances on the site have a thermal input of 40MWth. The total thermal input is now less than 50 megawatts therefore, we have removed Section 1.1 A(1)(a)(i) from the scheduled activities in table S1.1. We have added an additional DAAs relating to the remaining combustion plants steam generation (AR20).

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 existing H1 assessment of emissions remains valid for the capacity threshold now placed 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.

Implementing the requirements of the Medium Combustion Plant Directive

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(s) below:

Boilers

1. Rated thermal input (MW) of the medium combustion plant.	10MW	15 MWth	15 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
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural Gas	Natural Gas	Natural Gas
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.	1976	1980	1980

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.

If the operator has identified current compliance against BAT-AELs we will implement the relevant emission limit value (ELV) from the date of permit issue. This is relevant for emission point A11 against BAT 20 for dust emissions from the bag filter.

We have incorporated the emission limit of 10 mg/m³ for emission point A11 in the permit.

We have added an improvement condition (IC4) 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 (PM₁₀ and PM_{2.5}) 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.

The installation is a multi-operator installation, the site has an Effluent Treatment Plant (ETP) which is operated by a separate operator NSI Industrial O&M Solutions Ltd under permit EPR/AP3035KM. The ETP treats process effluent from the brewing activity however, Heineken UK Limited operate a Reverse Osmosis (RO) plant which treats water prior to that water being used in the onsite processes. The operator discharges RO condensate to the River Wharfe via 3rd party surface water sewer (Yorkshire Water) emission point W2.

We have included an improvement condition (IC5) in the permit which will require the operator to consider the feasibility of discharging RO concentrate to foul sewer. In addition, should this not be feasible the operator is required to assess the impact of the RO condensate through an environmental risk assessment and determine if further mitigation is required to reduce the impact/ risk to the environment.

We have also included additional parameters in table S3.2 for emission point W1 the ELVs and monitoring requirements will be set based on information provided in IC5.

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 during the original application received on 13/07/2003. We reviewed that report and considered that it does not adequately describe the condition of the soil and groundwater at that time. IC1 has been added for the operator to provide updated SCR to reflect changes on the site.

We have included an Improvement condition in the permit (IC1) which requires the Operator to submit an updated site condition report which includes baseline soil and groundwater data and reflect changes on the site. See Improvement conditions in Annex 3 of this decision document.

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 not carried out complete risk assessment on the hazardous substances stored and used at the installation and has indicated they would need more time to be able to carry out a complete stage 1 -3 assessment as detailed within EC Commission Guidance 2014/C 136/03.

The operator is required to complete stage 1-3 risk assessment on the hazardous substances stored and used at the installation and submit a relevant hazardous substances monitoring plan for review to the Environment Agency via improvement condition (IC2).

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 and 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 (IC3) 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).

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT conclusions. The justifications for these are provided in Annex 5 of this decision document.

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

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IC1	The Operator shall produce a Site Condition Report (SCR) in line with our H5 Guidance. The report shall contain the information necessary to determine the state of soil and groundwater, and ensure this is maintained throughout the life of the permit by using the results to better inform the SPMP. The report shall be submitted to the Environment Agency for review.	14/06/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC2	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.	14/06/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC3	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"> • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the operations within the installation; • An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation. The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	14/06/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC4	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 [A11], 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.	14/06/2025 (12 months from permit issue) or other date as agreed in writing with the Environment Agency

<p>IC5</p>	<p>The operator shall submit a written report to the Environment Agency for technical assessment and written approval.</p> <p>The report must contain:</p> <p>A feasibility study to investigate the discharge of Reverse Osmosis (RO) concentrate to foul sewer or to the third-party Effluent Treatment Plant associated with EA/EPR/AP3035KM, which process effluent is currently discharged via emission point E2.</p> <p>Results from a minimum of 10 monitoring samples taken at appropriate intervals in relation to the RO concentrate effluent.</p> <p>Characterisation of the effluent monitoring for the relevant parameters including but not limited to COD/TOC.</p> <p>The operator shall utilise the monitoring data to undertake a comprehensive assessment of the impact of RO concentrate on surface and ground water. The assessments shall be undertaken in accordance with Environment Agency guidance Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk); Groundwater risk assessment for your environmental permit - GOV.UK (www.gov.uk); and H1 annex D2: assessment of sanitary and other pollutants in surface water discharges - GOV.UK (www.gov.uk).</p> <p>Where the outcome of any assessment demonstrates an impact which is liable to cause pollution of surface or groundwater, contrary to the provisions of the Water Framework Directive and Groundwater Regulations, the operator shall provide details of an improvement programme to further mitigate against the risks with time scales for implementation, for approval in writing by the Environment Agency.</p>	<p>14/12/2024 (6 months from permit issue) or other date as agreed in writing with the Environment Agency</p>
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