

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/BO1122IA
The Operator is: Greene King Limited
The Installation is: Westgate Brewery
This Variation Notice number is: EPR/BO1122IA/V005

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 07/10/2022.

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 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 BAT6 and BAT9. The operator does not currently comply with the requirements of BATc 6 and 9. In relation to these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions IC18 and IC19 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 request Relating to BAT 6, BAT 11, Site Plan, and Production Capacity on 17/08/2023. 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>The operator monitors pH and flow from the main effluent points to ensure compliance with their discharge consents. Samples are taken daily to monitor COD loading within the effluent.</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 not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p>	NA	<p>We are satisfied that BATc 4 is not applicable to this Installation.</p> <p>The operator does not discharge process effluent directly to surface water, effluent is discharged to Anglian Sewer.</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
5	<p>Monitoring channelled emissions to air to the required frequencies and standards. 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>Channelled emissions of particulate matter from the handling of malt and adjuncts are discharged through emission points A6 and A7. These emissions of dust area abated via a bag filter.</p> <p>The operator has stated that dust extraction equipment is maintained and assessed on an annual basis under current COSHH regulations and LEV. However, the operator has stated they are currently compliant with BATc 5, annual monitoring of dust for emission points A6 and A7 will be included in the permit in line with BATc 5.</p>
6	<p>Energy Efficiency 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>Operator does not have energy efficiency plan in place. However, they use a combination of techniques from BAT6b such as;</p> <ul style="list-style-type: none"> • All lights have been replaced with LEDs. • Regular leak checks are undertaken, and leaks repaired as required. • Solar energy is being considered as part of the future master plan including off site solar farm. • Pipes are lagged and insulated where appropriate. • All motors are energy efficient and variable speed drives are used where appropriate. • Implement a process control system SCADA.

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
			<ul style="list-style-type: none"> Heat exchangers are used across site. <p>We have included improvement condition IC18 to ensure the operator submits an energy efficiency plan to meet compliance. The operator is required to complete the improvement condition and demonstrate compliance with BAT6 by 04/12/2023.</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 (b) Optimisation of water flow (c) Optimisation of water nozzles and hoses (d) Segregation of water streams</p> <p>Techniques related to cleaning operations:</p> <p>(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</p>	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>Operator makes use of BAT7a and a combination techniques form 7b.</p> <p>a) Water is reused where possible – secondary reverse osmosis is in place to reuse concentrate from reverse osmosis plant which is used for cleaning.</p> <p>g) high-pressure cleaning is undertaken.</p> <p>h) Holchem, the operator’s chemical provider, continuously review the CIP system and implement regular optimisation checks to ensure most efficient use of water and avoidance of over-cleaning and minimisation of effluent loading.</p>
8	<p>Prevent or reduce the use of harmful substances</p>	CC	<p>The operator has provided information to support compliance with BATc 8. 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>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> <p>(a) Proper selection of cleaning chemicals and/or disinfectants (b) Reuse of cleaning chemicals in cleaning-in-place (CIP) © Dry cleaning (d) Optimised design and construction of equipment and process areas</p>		<p>satisfied that the operator has demonstrated compliance with BATc 8.</p> <p>The operator uses a provider which selects cleaning chemicals in use on the site to ensure most appropriate substances are used within the CIP and on site to prevent and reduce emissions to the environment.</p>
9	<p>Refrigerants</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>	FC	<p>The operator is using 3 refrigeration units that uses R22. 0.71kg, 0.8kg and 2kg. these are known to depletes the ozone layer.</p> <p>We have included improvement condition IC19 to ensure the operator meets compliance. The operator is required to complete the improvement conditions and demonstrate compliance with BAT9 by the compliance date.</p>
10	<p>Resource efficiency</p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <p>(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 wastewater 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>The operator implements the waste hierarchy in the following manner:</p> <p>All waste streams not recovered or recycled and sent for incinerator for energy recovery. Yeast is sent for anaerobic digestion or are sent for pig feed and to a local AD plant.</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
			Separation of residues- installation of decanter separates dry hop material and centrifuge removes yeast - trub collected from whirlpools.
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> <p>There are measures in place to detect uncontrolled releases into drainage systems via overflow alarms and prevent discharge offsite by collection tanks on site which holds effluent before discharging to drain.</p> <p>pH probes are used to ensure only effluent that falls within specification is released. Out of spec effluent is recirculated.</p> <p>Penstock valves are also installed within surface water drains which can be quickly activated to prevent discharge off site.</p>
12	<p>Emissions to water – treatment In order to reduce emissions to water, BAT is to use an appropriate combination of the techniques given below. Preliminary, primary, and general treatment (a) Equalisation (b) Neutralisation (c) Physical separate (e.g. screens, sieves, primary settlement tanks etc) Aerobic and/or anaerobic treatment (secondary treatment) (d) Aerobic and/or anaerobic treatment (e.g. activated sludge, aerobic lagoon etc) (e) Nitrification and/or denitrification (f) Partial nitrification - anaerobic ammonium oxidation</p>	CC	<p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 12.</p> <p>The operator implements neutralisation by effluent pH correction before being discharged to drain. this is controlled with pH probes within the sites SCADA system. The probes are calibrated monthly.</p> <p>The operator also implements sedimentation via settlement tanks which are regularly</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										
	Phosphorus recovery and/or removal (g) Phosphorus recovery as struvite (h) Precipitation (i) Enhanced biological phosphorus removal Final solids removal (j) Coagulation and flocculation (k) Sedimentation (l) Filtration (e.g. sand filtration, microfiltration, ultrafiltration) (m) Flotation		emptied and cleaned to remove build-up of solids.										
12	<p>Emissions to water – treatment BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body</p> <table border="1" data-bbox="277 756 1084 1075"> <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> <p>(16) The BAT-AELs may not apply to the production of citric acid or yeast (17) No BAT-AEL applies for biochemical oxygen demand (BOD). As an indication, the yearly average BOD5 level in the effluent from a biological waste water treatment plant will generally be ≤ 20 mg/l. (18) The BAT-AEL for COD may be replaced by a BAT-AEL for TOC. The correlation between COD and TOC is determined on a case-by-case basis. The BAT-AEL for TOC is the preferred option because TOC monitoring does not rely on the use of very toxic compounds. (20) The lower end of the range is typically achieved when using filtration (e.g. sand filtration, microfiltration, membrane bioreactor), while the upper end of the range is typically achieved when using sedimentation only. (21) The upper end of the range is 30 mg/l as a daily average only if the abatement efficiency is ≥ 80 % as a yearly average or as an average over the production period. (22) The BAT-AEL may not apply when the temperature of the waste water is low (e.g. below 12 °C) for prolonged periods.</p>	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⁾	NA	<p>We are satisfied that this BAT - AEL is not applicable to this Installation.</p> <p>The operator does not discharge process effluent directly to surface water, after onsite treatment effluent is discharged to Anglian Water sewer.</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	Noise management plan	NA	We are satisfied that BATc 13 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>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, e.g. 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. 		<p>There is no existing permit requirement, and the site has no recent history of noise complaints therefore a noise management plan is not required.</p>
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>The operator implements a number of techniques to prevent or reduce noise emissions from the site. Equipment that may generate noise is housed inside the building and doors and windows are kept shut. The operator has systems in place to ensure all staff are appropriately training to operate equipment safely.</p> <p>There is a procedure to minimise noise from yard operations and noise dampeners have been fitted to all forklift trucks to minimise noise.</p>
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; 	NA	<p>We are satisfied that BATc 15 is not applicable to this Installation.</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>

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
	<ul style="list-style-type: none"> - a protocol for conducting odour monitoring. - a protocol for response to identified odour incidents e.g. complaints; - 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. 		
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="282 261 1227 647"> <thead> <tr> <th data-bbox="282 261 452 309">Technique</th> <th data-bbox="452 261 680 309">Description</th> <th data-bbox="680 261 1227 309">Applicability</th> </tr> </thead> <tbody> <tr> <td data-bbox="282 309 452 421">(a) Mashing-in at higher temperatures</td> <td data-bbox="452 309 680 421">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="680 309 1227 421" rowspan="3">May not be applicable due to the product specifications.</td> </tr> <tr> <td data-bbox="282 421 452 555">(b) Decrease of the evaporation rate during wort boiling</td> <td data-bbox="452 421 680 555">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> </tr> <tr> <td data-bbox="282 555 452 647">(c) Increase of the degree of high-gravity brewing</td> <td data-bbox="452 555 680 647">Production of concentrated wort, which reduces its volume and thereby saves energy.</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>The operator implements the following technique onsite:</p> <p>a) Mashing in temps are set per the products produced we aim to mash in at the higher threshold of our tolerance range - this is between 60 and 68 degrees depending on the product which reduces the use of cold water.</p> <p>The operator implements the following technique onsite:</p> <p>The operator has an ongoing project looking into how they can improve on evaporation rates.</p> <p>The operator has stated that they brew their largest batched beer at the highest gravity the plant will currently allow. However, they have a plan to invest in a new energy efficient environmentally friendly brewery, packing and distribution facility.</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> <table border="1" data-bbox="277 1126 1227 1445"> <thead> <tr> <th data-bbox="277 1126 524 1174">Technique</th> <th data-bbox="524 1126 1227 1174">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 1174 524 1331">(a) Recovery and (re)use of yeast after fermentation</td> <td data-bbox="524 1174 1227 1331">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 1331 524 1445">(b) Recovery and (re)use of natural filter material</td> <td data-bbox="524 1331 1227 1445">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.	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>a) Yeast is collected and sent for anaerobic digestion; the operator is also investigating the potential for yeast to be sent offsite for animal feed after fermentation.</p> <p>The operator does not use filter powder in the business as of 2019.</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	In order to reduce channelled dust emissions to air, BAT is to use a bag filter or both a cyclone and a bag filter.	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>Malt dust channelled emissions are abated using a bag filter.</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" data-bbox="275 568 1196 786"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Description</th> <th colspan="2">BAT-AEL (average over the sampling period)</th> </tr> <tr> <th>New plants</th> <th>Existing plants</th> </tr> </thead> <tbody> <tr> <td>Dust</td> <td>mg/Nm³</td> <td><2 – 5</td> <td><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	FC	<p>The operator has stated they are currently not compliant with the BAT-AELs associated with BATc 20. We have assessed the information provided and we agree with the Operator that they are currently not compliant with the BAT-AELs associated with BATc 20.</p> <p>The operator carries out handling and processing of malt on site, these activities give rise to dust. There is no current requirement to monitor releases as part of the existing permit. The BAT-AELs for BATc 20 is applicable to this installation for emission points A6 and A7. As the operator has not yet provided monitoring data we cannot confirm current compliance however, we believe the operator will be future compliant by 04/12/2023. As these are existing plant, we are including the future dated ELV of 10mg/m³ in the permit.</p> <p>We have included an improvement condition IC20 to ensure compliance against BATc 20. The operator is required to complete the improvement condition and demonstrate compliance with BATc 20 by the compliance date, 4 December 2023. See Annex 3.</p>
Parameter	Description			BAT-AEL (average over the sampling period)									
		New plants	Existing plants										
Dust	mg/Nm ³	<2 – 5	<2 – 10										

Brewing Sector Environmental Performance Levels				
EPL	Environmental Performance Level – Energy consumption for the brewing sector		CC	<p>The operator has provided information to support relating to the specific energy EPL. We have assessed the information provided and we are satisfied with the information the operator has provided.</p> <p>The Operator has indicated the sites specific energy consumption was 0.031 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	Environmental Performance Level – Specific wastewater discharge for the brewing sector		CC	<p>The operator has provided information to support relating to the specific wastewater EPL. We have assessed the information provided and we are satisfied with the information the operator has provided.</p> <p>The Operator has indicated the sites specific energy consumption was 0.3 m³/hl of products for 2021 which is within the target range level of 0.15 – 0.50 m³/ hl of products.</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
- 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 existing H1 assessment remains valid for the revised 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.

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

Name of plant in permit (table S3.1)	Boiler 1	Boiler 2	Boiler 3	Boiler 4
1. Rated thermal input (MW) of the medium combustion plant.	13.2MWth	13.2MWth	2.5MWth	2.5MWth
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	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.	1975	1975	1980	1980

We have reviewed the information provided and we consider that the declared combustion plants 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.

For existing MCP with a rated thermal input of less than or equal to 5 MW, the emission limit values set out in tables 1 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2030.

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.

The monitoring for Boilers 1 and 2 in the permit has previously included SO₂ and particulate matter however, as the fuel for these boilers is natural gas, in line with MCPD these monitoring requirements have been removed.

Particulate Emissions

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

For emission points noted to be future complaint we have incorporate future dated ELVs and monitoring requirements from the date of permit issue. This is relevant for emission points A6 and A7.

We have added an improvement condition IC21 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. 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 06/05/2005. 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 and/or ground water to be unlikely.

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 IC22 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.

Carbon Dioxide Recovery

We asked the Operator as part of the Regulation 61 Notice to confirm whether carbon dioxide (CO₂) is recovered from the fermentation stage of the process. Where this recovery is not currently in place, we asked them to provide a summary of any feasibility study carried out.

CO₂ recovery is a recognised technique to be considered in the determination of BAT as described in Chapter 4.4.4.3 of the FDM BREF. The stated environmental benefits include reduced carbon emissions from the permitted installation.

The economics of on-site recovery at the time of the BREF review was a relevant factor in determining whether CO₂ recovery was included as a specific BAT Conclusion. It was noted at the time that industrial gas suppliers were able to provide CO₂ obtained as a co-product from other sectors, such as during ammonia production, at low cost and as readily available resource.

This situation has now changed in the UK over the last two years, primarily due to energy prices. Ammonia is no longer produced in the UK and the CO₂ supply chain is fragile and dependent on imports. Defra and Department for Business and Trade are keen on diversification of CO₂ supply to increase supply resilience.

It is therefore appropriate to include an improvement condition (IC23) for breweries and cider mills which have not yet investigated the feasibility of carbon dioxide recovery, to ensure a report of a feasibility study is submitted by the operator for approval from the Environment Agency.

Techniques are readily available on the commercial market aimed at varying size of breweries from craft to large scale. Several permitted sites already carry out CO₂ recovery and the EA is aware that other breweries are actively considering this.

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.

Superseded Improvement Conditions – Removed from permit as marked as “complete”	
Reference	Improvement Condition
IP1	The Operator shall determine emissions of particulates from point A1 over representative working conditions. A written report of this determination shall be submitted to the Agency.
IP2	The Operator shall undertake an environmental assessment of emissions to air of particulates from emissions point A1 having regard to the Agency Guidance IPPC H1 or equivalent standard using the monitoring data obtained in IP1 and shall submit it to the Agency in writing.
IP3	The Operator shall demonstrate to the Agency, through submission of a written report, how they intend to ensure that the WHO guidance for noise levels at sensitive receptors at night (as contained within Agency's Noise Horizontal Guidance Note H3) will not be breached in relation to the planned maintenance that will take place between midnight and 6am within the installation.
IP4	The Operator shall submit to the Environment Agency a plan of the installation showing the location of all potentially polluting subsistence at the installation.
IP5	<p>The Operator shall review all containment technique for liquid, including drains, pipes, tanks, and secondary/tertiary containment against the requirement Section 2.2.5 of the Sector Guidance Note S6.10, 'General Guidance for the Food and Drink Sector'. This review shall in particular address:</p> <ul style="list-style-type: none"> • Tanks that are not currently in use but containing caustic in the boiler house • The beer delivery pipeline as it passes underneath Westgate Street and overhead of the River Linnet. • The underground pipeline running underneath Crown Street • The tanker bay at the diesel tanks in the integrated warehouse area and the beer tanker off-loading area in the kegging & casking plant. • IBC's containing CIP chemicals in the East Fermenting Building. • The HFO tanks in the West Fermenting area • The abstraction boreholes and adjacent cellars • Waste beet tanks in the kegging and casking area • The installation as a whole with respect to release controlled water. <p>The operator shall provide the Agency with a written report detailing the age, capacity, construction material, and integrity of each bund,</p>

	together with a timetable for implementation of any proposed improvement to be approved in writing by the Agency.
IP6	The Operator shall provide the Agency with a written description of measure in place or proposed to ensure that the three groundwater abstraction boreholes and the cellars of the west fermenting block with earth floors within the installation are protected from leakages or spills of process materials or wastes or fire water, so as to protect the underlying land and groundwater from contamination. Any proposed improvements shall include a timetable for Implementation, to be approved in writing by the Agency.
IP7	The Operator shall review the pollution control measures in place for all release points to controlled water to ensure the risk of pollution is minimised. The review should include an assessment of whether the number of release points can be minimised, and whether discharge are adequately protected by the use of oil separators. The use of cut-off valves should be considered.
IP8	The Operator shall Implement a system for recording the quantity of refrigerant used and the result of leakage testing of the refrigeration equipment.
IP9	The Operator shall submit for approval by the Agency, written plans for the decommissioning of the two heating oil tanks currently disused within the Integrated warehouse.
IP10	The Operator shall install pressure drop gauges on the fabric filters on emission points A10, A11 and A12 and shall implement regular monitoring and recording of the gauges.
IP11	The Operator shall provide the Agency with written details of the extent , age, construction details and condition of hardstanding including all expansion joints throughout the installation and shall provide plans to carry out any works necessary to repair or extend the hardstanding as to ensure that the land and groundwater are protected from potential leaks and spills of potential polluting substances. This shall include plans for the repair of all cracks to hardstanding at the installation including those noted in the Application Site Report in the basement of the east fermenting building and in the integrated warehouse loading bay. The timetable for implementation shall be approved in writing by the Agency in advance of implementation.
IP12	The Operator shall submit written proposals to minimise odour through the installation of suitable equipment to enable condensation of vapours from the wort boiling vent (emission point A9)
IP13	The Operator shall submit to the Agency a written odour management plan with a timetable to implement any improvement identified. The plan shall have regard to relevant guidance including Section 2.2.6 and Annex F of the Agency Sector Guidance Note S6.10, December 2002, and the Agency 's Odour Horizontal Guidance Note H4 as from time to time amended.
IP14	The Operator shall review their Environmental Management System against the requirements of section 2.3 of Agency Guidance Note S6.10, 'General Guidance Note for the Food and Drink Sector'. The Operator shall submit a proposed timetable of improvements, for any deficiencies identified to the Agency

IP15	The Operator shall undertake and submit to the Agency a written cost-benefit analysis for the installation of a CO ₂ recovery plant at the installation.
IP16	The Operator shall carry out a BAT option appraisal for reducing emissions oxides of nitrogen, sulphur dioxide and particulates from the boiler plant (A1). Options assessed should include the use of alternatives fuels, installation of a CHP system and the use of low NOx burners. The assessment shall include an H1 assessment or equivalent standard of the alternative options. A written summary of the assessment shall be submitted to the Agency together with a timetable to implement any improvements proposed.
IP17	The Operator shall develop a written Site Closure Plan with regard to the requirements set out in Section 2.11 of the Agency Guidance Note IPPC S6.10, Ver.1, August 03. Upon completion of the plan a summary of the document shall be submitted to the Agency in writing.

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
IC18	<p>The operator shall submit, for approval by Environment Agency, a report demonstrating achievement of the 'Narrative' BAT where BAT is currently not achieved but will be achieved before 4 December 2023. The report shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • Methodology applied for achieving BAT • Demonstrating that BAT has been achieved. <p>The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 6.</p> <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	04/12/2023
IC19	<p>The operator shall use refrigerants without ozone depletion potential and with a low global warming potential (GWP) in accordance with BAT 9 from the Food, Drink and Milk Industries BATCs.</p> <p>To demonstrate compliance against BAT 9, the operator shall develop a replacement plan for the refrigerant system(s) at the installation. This shall be incorporated within the existing environmental management system by the specified date.</p>	04/12/2023

	<p>The plan should include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • Where practicable, retro filling systems containing high GWP refrigerants e.g. R-404A with lower GWP alternatives as soon as possible. • An action log with timescales, for replacement of end-of-life equipment using refrigerants with the lowest practicable GWP. • Replacement of systems containing HCFCs as soon as possible. Only to be included where operator has confirmed use of R22 in “legacy system” in their Reg 61 response 	
IC20	<p>The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the Best Available Techniques Conclusion Associated Emission Levels (BAT-AELs) where BAT is currently not achieved but will be achieved before 4 December 2023.</p> <p>The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Performance against the BAT-AELs. 2) Methodology applied for reaching the BAT-AELs. 3) The report shall address the BAT Conclusions for Food, Drink and Milk industries with respect to the following: <ul style="list-style-type: none"> • BAT 20 Table 7 (compliance with BAT-AELs for channelled dust emissions to air from handling and processing of malt and adjuncts) <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	04/12/2023
IC21	<p>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 A6 and A7, 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.</p>	01/12/2024 (12 months from permit issue) or other date as agreed in writing with the Environment Agency
IC22	<p>The operator shall produce a climate change adaptation plan, which will form part of the EMS.</p> <p>The plan shall include, but not be limited to:</p> <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. 	01/12/2024 (12 months from permit issue) or other date as agreed in writing with the Environment Agency

	The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	
IC23	The Operator shall submit a report of a feasibility study into recovery of carbon dioxide generated during the fermentation stage. The report shall take into account information provided in Chapter 4.4.4.3 of the Food Drink and Milk Industries BREF and will quantify current emissions of carbon dioxide from the fermenters. Where recovery is feasible, the report shall include timescales for implementation.	01/06/2025 (18 months from permit issue) or other date as agreed in writing with the Environment Agency
IC24	Submit an updated emission point plan to the Environment Agency for approval. The plan must demonstrate the location of all point emissions to air and water. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.	01/06/2024 6 months from date of permit issue