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/HP3833YZ
The Operator is:	Brothers Drinks Co. Limited
The Installation is:	Showerings Cider Mill
This Variation Notice number is:	EPR/HP3833YZ/V002

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 11/10/2022.

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 6 Energy Efficiency Plan and 9 refrigeration. The operator does not currently comply with the requirements of BATc 2, 6 and 9. In relation to these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Condition(s) 14 and 15 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 a further information request on 09/10/2023. 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	**Environmental Management System - Improve overall environmental performance.** Implement an EMS that incorporates all the features as described within BATc 1.	**FC**	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. The operator has an EMS that incorporates the majority of features as described within BATc 1. We have included IC14 requiring the missing features to be in place to ensure compliance.
2	**EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.** 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.	**FC**	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. The operator tracks water, energy, raw materials and waste water. There is currently no strategy for monitoring resource efficiency however the operator confirmed this will be in place. A waste minimisation team are working on establishing performance indicators and will communicate environmental and resource efficiency. Currently there are KPIs for primary packaging and finished product liquid wastes. We have included IC14 requiring the missing features to be in place to ensure compliance.
3	**Monitoring key process parameters at key locations for emissions to water.** 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	**CC**	The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are

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	inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).		satisfied that the operator has demonstrated compliance with BATc 3. The site discharges to sewer under Trade Effluent Consent (TEC). The operator is required to monitor for volume, flow, pH and Chemical Oxygen Demand (COD).
4	**Monitoring emissions to water to the required frequencies and standards.** 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.	**N/A**	BATc 4 applies in the case of direct discharge of effluent to a water body. All process effluent from the site is discharged to sewer. We are therefore satisfied that BATc 4 is not applicable for this site
5	**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.	**N/A**	BATc 5 applies to dust emissions from sites handling malt and adjuncts. The operator has confirmed they do not process malt or adjuncts. We are therefore satisfied that BATc 5 is not applicable to this site.
6	**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.	**FC**	The operator has provided information to support compliance with BATc 6. We have assessed this information and are not satisfied that the operator has demonstrated compliance with BATc 6. The operator submitted an Energy Efficiency Plan with their Reg 61 response. This however appears to be a summary document rather than completed plan. We have therefore included IC15 requiring a more formal plan be in place.

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
			The operator has confirmed the following techniques are employed on site: • LED lighting • Air leak survey and repairs • Energy efficient motors
7	**Water and wastewater minimisation** 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. (a) water recycling and/or reuse (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	**CC**	The operator has provided information to support compliance with BATc 7. We have assessed this information and are satisfied that the operator has demonstrated compliance with BATc 7. The operator has confirmed they have implemented the following water and waste water minimisation techniques; • Canning line pasteuriser modified so hot and cold water is recirculated to maintain temperature with less energy and water usage. • Canning line – empty cans are air rinsed, previously they were water washed. • Where safe, the degree of cleaning has been reduced within CIP systems, reducing water, chemical and energy use. Recovered solutions are used for the pre-rinse of the following clean • All cleaning hoses have trigger nozzles. • Heavy debris is removed manually or using controlled application of foam chemicals. • Effluent dilution is used for COD reduction. Efficient use of waste water streams within the ETP. Note. High COD effluent is diverted and then reintroduced into the effluent stream in a “controlled manner”.

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
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 this information and are satisfied that the operator has demonstrated compliance with BATc 8. The operator has provided details of the types of harmful substances stored on site. These have been grouped into: • Oil and grease • Water treatment • Hygiene • Ingredients These are sources through approved third part suppliers with data sheets and COSHH assessment held for all chemicals.
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.	**FC**	The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 9. The operator has provided an inventory of refrigeration systems on site. Ammonia systems provide the majority of cooling on site however 4 small units associated with the manufacturing process are also in use. These use high GWP refrigerants R410A and R407C. BATc 9 requires a formal plan to be in place for the end of life replacement of these systems. We have therefore included IC16 into the permit in order to achieve compliance.
10	**Resource efficiency** In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:	**CC**	The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are

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
	(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		satisfied that the operator has demonstrated compliance with BATc 10. The operator confirmed that organic wastes such as pomace and yeast are sent for anaerobic digestion.
11	**Waste water buffer storage** In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.	**CC**	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. Waste water with elevated COD is diverted to a separate 120 m^3 storage tank from where it can be diluted back into the treatment process in a controlled manner. There is a further 2,500m^3 tank (2 to 3 days capacity) available to receive out of specification effluent if required. There is a “slam shut” procedure for the wastewater treatment plant.
12	**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 (eg screens, sieves, primary settlement tanks etc) Aerobic and/or anaerobic treatment (secondary treatment) (d) Aerobic and/or anaerobic treatment (eg activated sludge, aerobic lagoon etc) (e) Nitification and/or denitrification (f) Partial nitration - anaerobic ammonium oxidation Phosphorus recovery and/or removal (g) Phosphorus recovery as struvite (h) Precipitation	**CC**	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. The Operator treats process effluent on site within the permitted effluent treatment plant prior to discharge to sewer to Darshill Waste Water Treatment Works operated by Wessex Water. The on-site effluent treatment plant incorporates screening for solids removal, COD dilution and pH adjustment.

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td></td><td>(i) Enhanced biological phosphorus removal
Final solids removal
(j) Coagulation and flocculation
(k) Sedimentation
(l) Filtration (eg sand filtration, microfiltration, ultrafiltration)
(m) Flotation</td><td></td><td></td></tr>
<tr><td>12</td><td>Emissions to water – treatment
BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body

<table><tr><th>Parameter</th><th>BAT-AEL ([15]) ([16]) (daily average)</th></tr><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></table>(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.</td><td>N/A</td><td>The site discharges process effluent to the foul sewer, there are no direct discharges to the water course, as such BAT-AELs do not apply.

We are therefore satisfied that BAT AELs associated with BATc 12 is not applicable for this site.</td></tr>
<tr><td>13</td><td>Noise management plan
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:</td><td>N/A</td><td>A noise management plan is only required where noise nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated noise nuisance</td></tr>
</table>

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
	- 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.		from the site therefore an NMP is not a requirement for this site. We are satisfied that BATc 13 is not applicable to this site.
14	**Noise management** 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. (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement	**CC**	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. The operator has confirmed the following noise reduction measures are in place: • Transport movements restricted to 07:00 – 20:00 • Sound proof fencing on the Graston Street boundary • Fruit processing machinery recessed into a machine pit • Second skin built within the building to prevent egress of noise to Garson Street. • Silencers fitted to extraction vents • Centrifuge plant contained in soundproof room • Acoustic guarding on conveyer lines • Acoustic guarding on cooling towers and separators • Vibration pads on air compressors
15	**Odour Management** 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: - a protocol containing actions and timelines; - a protocol for conducting odour monitoring.	**N/A**	An odour management plan is only required where odour nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated odour nuisance from the site therefore an OMP is not a requirement for this site.

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
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<tr><td></td><td>- a protocol for response to identified odour incidents eg 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.</td><td></td><td>We are therefore satisfied that BATc 15 is not applicable for this site.</td></tr>
<tr><td colspan="4">BREWING BAT CONCLUSIONS (BAT 18 – 20)</td></tr>
<tr><td>18</td><td>Energy efficiency – Brewing Sector

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.

<table><tr><th colspan="2">Technique</th><th>Description</th><th>Applicability</th></tr><tr><td>(a)</td><td>Mashing-in at higher temperatures</td><td>The mashing-in of the grain is carried out at temperatures of approximately 60 °C, which reduces the use of cold water.</td><td>May not be applicable due to the product specifications.</td></tr><tr><td>(b)</td><td>Decrease of the evaporation rate during wort boiling</td><td>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></td></tr><tr><td>(c)</td><td>Increase of the degree of high-gravity brewing</td><td>Production of concentrated wort, which reduces its volume and thereby saves energy.</td><td></td></tr></table>
Applicable in addition to BAT6

See Tables below for the EPL figures</td><td>N/A</td><td>The site produces cider using fruit as a raw material. Grains are not used in the production process and the juice is not boiled. Cider production is a fermentation process, not brewing.</td></tr>
<tr><td>19</td><td>In order to reduce the quantity of waste sent for disposal, BAT is to use one or a combination of the techniques given below.</td><td>CC</td><td>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.

The operator has confirmed yeast is allowed to settle at the end of fermentation before being decanted to a separate tank. This spent yeast is then collected by tanker and then sent for anaerobic digestion.</td></tr>
</table>

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	<table><tr><th colspan="2">Technique</th><th>Description</th></tr><tr><td>(a)</td><td>Recovery and (re)use of yeast after fermentation</td><td>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>(b)</td><td>Recovery and (re)use of natural filter material</td><td>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></table>		There are no other wastes associated with fermentation.
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.	**N/A**	The site does not process grain or other materials likely to lead to dust emissions.
20	BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from handling and processing of malt and adjuncts <table><tr><td rowspan="2">Parameter</td><td rowspan="2">Description</td><td colspan="2">BAT-AEL (average over the sampling period)</td></tr><tr><td>New plants</td><td>Existing plants</td></tr><tr><td>Dust</td><td>mg/Nm^3</td><td><2 – 5</td><td><2 – 10</td></tr></table> The associated monitoring is given in BAT 5.	**N/A**	As above, the site does not process malt or adjuncts. The operator states the only dusty material handled is yeast which is added manually from 10kg containers. There are no channelled emissions likely to contain dusty air.
SOFT DRINKS AND NECTAR/ JUICE MADE FROM PROCESSED FRUIT AND VEGETABLES BAT CONCLUSIONS (BAT 33)			
33	**Energy efficiency – Soft drinks and nectar/ juice made from processed fruit and vegetables** 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.	**N/A**	The operator has confirmed BATc 33 is not applicable to the site. They confirm all pasteurisation is completed after the product is filled and sealed into primary packaging. Sugars are received already dissolved and transferred for use by pumping and water purge. The exception is fructose which is

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	<table><tr><th colspan="2">Technique</th><th>Description</th><th>Applicability</th></tr><tr><td>(a)</td><td>Single pasteuriser for nectar/juice production</td><td>Use of one pasteuriser for both the juice and the pulp instead of using two separate pasteurisers.</td><td>May not be applicable due to the pulp particle size.</td></tr><tr><td>(b)</td><td>Hydraulic sugar transportation</td><td>Sugar is transported to the production process with water. As some of the sugar is already dissolved during the transportation, less energy is needed in the process for dissolving sugar.</td><td>Generally applicable.</td></tr><tr><td>(c)</td><td>Energy-efficient homogeniser for nectar/juice production</td><td>See BAT 21b.</td><td></td></tr></table> Applicable in addition to BAT6		received as a granular solid and dissolved on site as required. Juice is not homogenised.
Brewing Sector Environmental Performance Levels			
EPL	**Environmental Performance Level – Energy consumption for the brewing sector** <table><tr><td>Unit</td><td>Specific energy consumption (yearly average)</td></tr><tr><td>MWh/hl of products</td><td>0.02 – 0.05</td></tr></table>	**CC**	The operator has provided information to support compliance with the energy efficiency EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with energy efficiency for the alcoholic drinks sector. The operator has provided information confirming their total energy use for 2021 was 23,119.05MWh. The hl of products produced was 936562.02hl = 0.023MWh/hl. This is within the target range of 0.02-0.05 MWh/hl for brewing. Cider production is a fermentation process rather than brewing and as such the EPL does not directly apply. However we consider this a useful marker that the site is demonstrating an appropriate level of energy efficiency.

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<tr><td>EPL</td><td>Environmental Performance Level – Specific waste water discharge for the brewing sector
<table><tr><td>Unit</td><td>Specific waste water discharge (yearly average)</td></tr><tr><td>m^3/hl of products</td><td>0.15 – 0.50</td></tr></table></td><td>CC</td><td>The operator has provided information to support compliance with the waste water EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with waste water discharge for the alcoholic drinks sector.

The operator has provided information confirming their total water discharged for 2021 was 313647 m^3. The product volume was 986562.02 hl I = 0.025m^3/hl.

This is within the target range of 0.15 -0.50 MWh/hl for brewing.

As above, whilst the EPL does not directly apply to cider production we consider this an appropriate marker for the operator to demonstrate performance.</td></tr>
<tr><td colspan="2">Soft Drinks and Nectar/ Juice made from processed fruit and vegetables sector Environmental Performance Levels</td><td></td><td></td></tr>
</table>

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<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Energy consumption for the Soft Drinks and Nectar/ Juice made from processed fruit and vegetables sector
<table><tr><td>Unit</td><td>Specific energy consumption (yearly average)</td></tr><tr><td>MWh/hl of products</td><td>0.01 – 0.035</td></tr></table></td><td>CC</td><td>The operator has provided information to support compliance with the energy efficiency EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with energy efficiency for the juice sector.

The operator has provided information confirming their total energy use for 2021 was 23,119.05MWh. The hl of products produced was 936562.02hl = 0.023MW/hl.

This is within the target range of 0.02-0.035 MWh/hl for fruit juice.

Juice production currently accounts for about 60% of production at the site. The site does not sub meter so it is not possible to distinguish energy use between processes.</td></tr>
</table>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
EPL	**Environmental Performance Level – Specific waste water discharge for the Soft Drinks and Nectar/ Juice made from processed fruit and vegetables sector** Unit: m^3/hl of products Specific waste water discharge (yearly average): 0.08 – 0.20	**CC**	The operator has provided information to support compliance with the waste water EPL. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with waste water discharge for the fruit juice sector. The operator has provided information confirming their total water discharged for 2021 was 313647 m3. The product volume was 986562.02 hl I = 0.025m3/hl. This is outside the target range of 0.08 -0.20 MWh/hl for fruit juice however the figures also include cider production as the site does not sub meter between processes. Considering this and the figure lies only slightly out of range we consider the figures acceptable for the facility.

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 existing H1 assessment of emissions to water 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.

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

Boilers

	Boiler 1	Boiler 2	Boiler 3	Boiler 4

1. Rated thermal input (MW) of the medium combustion plant.	9.36	9.36	3.1	3.1
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 with light fuel oil as back up	Natural gas with light fuel oil as back up	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.	June 2005	June 2005	July 2019	1978

We have reviewed the information provided and we consider that the declared combustion plant qualify as “existing” medium combustion plant with the exception of Boiler 3.

For existing medium combustion plant with a rated thermal input greater than 5 MW (Boilers 1 and 2), 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 (Boiler 4), 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 operator confirmed that Boiler 3 had been installed as a like for like replacement with the same thermal power as the original Boiler 3. A permit variation was not applied for however this has been actioned as an admin change as part of the review. As new medium combustion plant we have included monitoring and ELV requirements from permit issue.

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 stated the Application Site Condition Report was submitted February 2005. We are however unable to locate a copy and the operator was also unable to provide one.

We have included an Improvement condition in the permit (IC17) which requires the Operator to submit an updated site condition report which includes baseline soil and groundwater data. See Improvement condition(s) 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 provided a short risk assessment on the hazardous substances stored and used at the installation. The risk assessment was not a stage 1-3 assessment as detailed within EC Commission Guidance 2014/C 136/03. It provided some discussion around the types of hazardous materials stored on site however further more detailed assessment is considered necessary.

We therefore consider the operator as not provided an appropriate risk assessment on the hazardous substances stored and used at the installation.

The operator is required to submit a risk assessment for the relevant hazardous substances for review to the Environment Agency via improvement condition (IC18).

Climate Change Adaptation

The operator has considered if the site is at risk of impacts from adverse weather (flooding, 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 (IC19) 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 appliable.

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.

The Operator did not provide a response to the Regulation 61 Notice with respect to the existing tanks and their containment measures on site.

We have set improvement conditions in the permit to address the deficiencies in the existing tanks and containment measures on site (IC20). See Improvement condition(s) in Annex 3 of this decision document.

Carbon Dioxide Recovery

We asked the Operator as part of the Regulation 61 Notice to confirm whether carbon dioxide (CO_2) 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.

CO_2 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 CO_2 recovery was included as a specific BAT Conclusion. It was noted at the time that industrial gas suppliers were able to provide CO_2 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 CO_2 supply chain is fragile and dependent on imports. Defra and Department for Business and Trade are keen on diversification of CO_2 supply to increase supply resilience.

It is therefore appropriate to include an improvement condition (IC21) 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.

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**
IC1	The operator shall consider the subsurface structures present on site in relation to their potential to cause fugitive emissions to surface water and ground water. The assessment will take into account the requirements of section 2.2.5 of the Agency Guidance Note IPPC S6.10, August 2003. A written report summarising the finding shall be submitted to the Agency. A time scale for implementation of any improvements shall be agreed with the Agency.
IC2	The operator shall identify and review all discharge points to, and sources of contamination of the River Sheppey and shall report the findings in writing to the Agency. Any improvements required shall be implemented according to a timescale agreed with the Agency.
IC3	The Operator shall submit to the Agency, in writing, a programme of regular testing and inspection of all storage areas containing waste, liquid raw materials, products and chemicals commencing with an initial audit to identify any necessary improvements to standards detailed in Section 2.2.5 of Food and Drink Sector Guidance Note IPPC S6.10 Issue 1, dated August 2003. The audit and programme shall include the following: • Inspection of primary, secondary and tertiary containment measures • Inspection of coatings applied to secondary and tertiary containment • Segregation of materials dependant upon reactivity • Size of containment based on maximum stock levels The proposed inspection regime shall be agreed with the Agency in writing and implemented throughout the installation. A summary of the audit findings and a timescale for implementation of any improvements identified shall also be submitted to the Agency for approval.
IC4	The operator shall implement a written planned preventative maintenance schedule for all plant whose failure could lead to impact to the environment. The operator shall have regard to the Food and Drink Sector Guidance IPPC S6.10 Issue 1, dated August 2003. A written report summarising key elements of the plan shall be submitted to the Agency.
IC5	The operator shall provide an odour management plan in writing to the Agency, covering all odour emissions from the installation, having regard to the draft Agency Guidance Note IPPC H4 (Part 1), Appendix 7 (October 2002)
IC6	The operator shall provide a noise management plan in writing to the Agency, covering all noise emissions from the installation, having regards to the Agency Guidance Note IPPC H3 (Part 2), Appendix 4 (June 2004)
IC7	The operator shall produce an Energy Efficiency Plan having regards to the Agency Guidance Note IPPC S6.10, August 2003, Section 2.7.2

IC8	The operator shall develop a written accident management plan having regard to the requirements set out in Agency Guidance Note IPPC S6.10, August 2003, Section 2.8 and shall submit the plan in writing to the Agency
IC9	The operator shall develop and implement a documented environmental ,management system, having regard to Agency Guidance Note IPPC S6.10, August 2003, Section 2.3
IC10	The operator shall submit a report to the Agency, demonstrating whether flow meters used in the effluent plant meet with the performance standards given in the MCERTs document "continuous water monitoring equipment part 1V1 Feb 2003. The report shall include an assessment of the flow meter performance with the criteria given in the standard and where these are not met, proposals and time-scales required to achieve the standard.
IC11	The operator shall submit a written report detailing the operational controls in place for refrigeration and accounting for usage and disposal of refrigerants.
IC12	The Operator shall undertake a water efficiency audit of the installation. The audit shall have regard to Food and Drink Sector Guidance Note IPPC S6.10 Issue 1, dated August 2003, Section 2.4.3 and shall provide a breakdown of significant water use by department or activity and shall establish the current installation performance (for example litre water/kg of product) and water efficiency objectives. A summary of the audit shall be submitted to the Agency in writing with a timetable to implement any improvements identified. The improvements and timetable shall be agreed in writing with the Agency.
IC13	The Operator shall carry out a waste minimisation audit of the Installation. The audit shall have regard to Food and Drink Sector Guidance Note IPPC S6.10 Issue 1, dated August 2003, Section 2.4.2 and shall provide information on any lines and operations identified as causing a process loss specifying for each line or operation or department, the amount lost (tonnes/year) and the percentage recovered in process or recycled. A summary of the audit shall be submitted to the Agency in writing with a timetable to implement any improvements identified. The improvements and timetable shall be agreed in writing with the Agency.

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**
IC14	The Operator shall confirm in writing to the Environment Agency that the Narrative BAT requirements for the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 2, 6 and 9 were in place on or before 4 December 2023. Refer to BAT Conclusions for a full description of the BAT requirement.	1 month from permit issue
IC15	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. To demonstrate compliance against BAT 9, the operator shall develop a replacement plan for the refrigerant system(s) at the installation. This shall be	1 month from permit issue

	incorporated within the existing environmental management system by the specified date. The plan should include, but not be limited to, the following: • 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.	
IC16	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.	12 months from permit issue
IC17	The operator shall submit to the Environment Agency for approval a risk assessment considering the possibility of soil and groundwater contamination at the installation where the activity involves the use, production or release of a hazardous substances (as defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures). A stage 1-3 assessment should be completed (as detailed within the EC Commission Guidance 2014/C 136/-3) as follows; Stage 1 – Identify hazardous substance(s) used / stored on site. Stage 2 – Identify if the hazardous substance(s) are capable of causing pollution. If they are capable of causing pollution, they are then termed Relevant Hazardous Substances (RHS). Stage 3 – Identify if pollution prevention measures & drains are fit for purpose in areas where hazardous substances are used / stored. If the outcomes of Stage 3 identifies that pollution of soil / ground water to be possible. The operator shall produce and submit a monitoring plan to the Environment Agency for approval detailing how the substance(s) will be monitored to demonstrate no pollution. The operator shall commence monitoring of the RHS within a timescale as agreed by the Environment Agency.	12 months from permit issue
IC18	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: • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the	12 months from permit issue

	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.	
IC19	The Operator shall undertake a survey of the primary, secondary and tertiary containment at the site and review measures against relevant standard including: • CIRIA Containment systems for the prevention of pollution (C736) – Secondary, tertiary and other measures for industrial and commercial premises, • EEMUA 159 - Above ground flat bottomed storage tanks The operator shall submit a written report to the Environment Agency approval which outlines the results of the survey and the review of standard and provide details of • current containment measures • any deficiencies identified in comparison to relevant standards, • improvements proposed • time scale for implementation of improvements. The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.	12 months from permit issue
IC20	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.	18 months from permit issue