

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/BO9310IB
The Operator is: Nestle UK Ltd
The Installation is: Nestle UK - Dalston
This Variation Notice number is: EPR/BO9310IB/V007

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 and any changes to the operation of the installation.

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 24/03/2022 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 12/09/2022.

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 23. The operator does not currently comply with the requirements of BATc 23. In relation to this BAT Conclusion, the operator has committed compliance by 4 December 2025. We have therefore included Improvement Condition (IC8) in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 4 December 2025. This new after drier to which the emission relates was commissioned August 2022 and is therefore considered new plant. As such, we have agreed an extended compliance date in order to achieve compliance with BAT-AELs.

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued further information requests on 21/03/2023 to clarify BATc 9 refrigeration, BATc 11 containment and uncontrolled emissions, BATc 13 noise management, MCPD emission points and site capacity and 30/03/2023 to clarify emission points and provide a revised emission point plan. A copy of each further information requests 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 a 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 externally accredited EMS to the ISO14001 standard and Energy Management System accredited to ISO 50001. The site monitors gas, electricity, water and effluent daily.</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 undertakes continuous monitoring of the following parameters; COD, TSS, pH, temperature and phosphate prior to discharge to sewer.</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>	N/A	<p>The only parameter relevant for discharges to sewer is chloride but this is not a parameter of concern for this particular process (milk powder and instant powdered drinks production) so is not applicable. For information, the effluent is monitored on an</p>

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			<p>hourly basis to ensure the limits of the trade effluent consent are achieved.</p> <p>We are therefore satisfied that BATc 4 is not applicable for this site</p>
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>	FC	<p>The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are not satisfied the operator has demonstrated compliance with BATc 5.</p> <p>Two Spray driers (Egron 1 and 2) are used on site to produce powdered milk and creamers.</p> <p>Emissions points A4 and A5 serving the driers are monitored continuously for particulate matter. The operator however has confirmed this monitoring is not to MCERTS standards.</p> <p>In addition emission point A8 has been repositioned following the installation of a new after drier. New cyclones were installed with the exhaust terminating at a different location. This point has not been monitored and therefore no emissions data submitted.</p> <p>Improvement Condition IC8 has been added to the permit to ensure a monitoring programme to appropriate standards is devised for all emission points.</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>	CC	<p>The operator has provided information to support compliance with BATc 6. We have assessed this information and are satisfied that the operator has demonstrated compliance with BATc 6.</p>

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			<p>The site has ISO 50001 accreditation and the certificate has been provided.</p> <p>The operator has confirmed they are implementing the following energy efficiency techniques:</p> <ul style="list-style-type: none"> • insulation • heat recovery • optimising steam distribution systems
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 this information and are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>The operator has implemented a number of water minimisation techniques across the site including:</p> <ul style="list-style-type: none"> • Water reuse for the milk condensate in the boiler, cooling towers CIP system and general cleaning of process equipment. • Optimisation of water nozzles and hoses • Optimization of chemical dosing and water use in the CIP utilising chemical dosing units, use tracking and staff training, • Dry cleaning and use of ATEX rated vacuums • High pressure cleaning • Optimised design of equipment and process areas • “clean as you go” process.
8	Prevent or reduce the use of harmful substances	CC	The operator has provided information to support compliance with BATc 8. We have

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> <ul style="list-style-type: none"> (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 		<p>assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8.</p> <p>The operator has provided a list of chemicals used on site. They have also provided details of how change to operational practices is assessed including the assessment of new substances. Any changes will require a HAZOP study to be undertaken.</p> <p>There are also measures in place to appropriately dose chemicals, optimize equipment design and dry clean as detailed above.</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>	CC	<p>The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 9.</p> <p>The Operator has stated that the site uses Ammonia (R717) or Propane (R-290) in their refrigeration processes. They provided clarification that only systems associated with domestic air conditioning use F-Gases with GWP > 1400. These systems fall outside of the scope of BATc 9 and will be assessed through F-gas compliance.</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> <ul style="list-style-type: none"> (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 	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 has demonstrated that there are measures in place to ensure waste is reused as appropriate, used as animal feed and sent for anaerobic digestion. The Operator has the ability to use land spreading for the spreading</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
			of sludge from the ETP when permitted and weather conditions are appropriate.
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>Effluent from operational areas of the site is received in a reception tank which is used to balance the flow through the ETP in conjunction with the recovery and balance tanks. These 3 tanks are linked to a lagoon which can be used in an emergency for on-site storage of up to 1500m³. Effluent can be removed at any of the stages for offsite treatment, treatment as sludge or land spreading.</p> <p>A slam shut valve is in place prior to surface water discharge to the River Caldw. This monitors the temperature, pH and turbidity continuously and closes the discharge if compliance limits are exceeded. A procedure is in place to review the readings. Following this effluent will be directed to the ETP or discharged.</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 (eg screens, sieves, primary settlement tanks etc) Aerobic and/or anaerobic treatment (secondary treatment)</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 treats all process effluent on site within the permitted effluent treatment plant prior to discharge to private sewer with direct link to the nearby United Utilities Dalston Wastewater Treatment Plant.</p>

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	(d) Aerobic and/or anaerobic treatment (eg activated sludge, aerobic lagoon etc) (e) Nitrification and/or denitrification (f) Partial nitrification - anaerobic ammonium oxidation 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 (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation		<p>The on-site effluent treatment plant incorporates a fat and grease removal system comprising a Dissolved Air Flocculation (DAF) plant, aerated bio-reactor (MBR) to reduce the biological load and a second DAF which separates off the sludge.</p> <p>Sludge from the DAF is dewatered in a centrifuge and transferred from site. Water is returned to the waste water treatment tank.</p>										
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="264 879 1196 1082"> <thead> <tr> <th>Parameter</th> <th>BAT-AEL (°) (°) (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) (°) (°)</td> <td>25-100 mg/l (°)</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>4-50 mg/l (°)</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td>2-20 mg/l (°) (°)</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td>0,2-2 mg/l (°)</td> </tr> </tbody> </table> <p>Note: 125mg/l COD for dairy sites Note: 4mg/l TP for dairy sites</p>	Parameter	BAT-AEL (°) (°) (daily average)	Chemical oxygen demand (COD) (°) (°)	25-100 mg/l (°)	Total suspended solids (TSS)	4-50 mg/l (°)	Total nitrogen (TN)	2-20 mg/l (°) (°)	Total phosphorus (TP)	0,2-2 mg/l (°)	N/A	<p>The site discharges treated effluent to the foul sewer, there are no direct discharges to the water course as such the relevant BAT-AELs for the dairy sector do not apply.</p> <p>We are therefore satisfied that BAT AELs associated with BATc 12 is not applicable for this site.</p>
Parameter	BAT-AEL (°) (°) (daily average)												
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Total phosphorus (TP)	0,2-2 mg/l (°)												
13	<p>Noise management plan</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; 	N/A	<p>The operator has provided information to support compliance with BATc 13. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 13.</p> <p>There are no indications of noise complaints</p>										

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	<ul style="list-style-type: none"> - 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. 		<p>resulting from operations on the site and no requirement for formal noise management plan. The operator however has a noise abatement plan in place which identifies areas of potential noise nuisance and mitigation to reduce noise emissions as detailed below.</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 has a noise abatement plan in place which identifies areas of potential noise nuisance and provides procedures to reduce noise emissions from the site including;</p> <ul style="list-style-type: none"> • The housing of equipment within buildings • Maintain equipment under a regular service plan • Set delivery times • Locating potentially noisy plant away from receptors. • Low noise equipment.
15	<p>Odour Management</p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting odour monitoring. - 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. 	N/A	<p>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.</p> <p>We are therefore satisfied that BATc 15 is not applicable for this site.</p>

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DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)																			
21	<p>Energy efficiency – Dairy 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="280 499 1126 1038"> <thead> <tr> <th data-bbox="280 499 517 536">Technique</th> <th data-bbox="517 499 1126 536">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="280 536 517 596">(a) Partial milk homogenisation</td> <td data-bbox="517 536 1126 596">The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.</td> </tr> <tr> <td data-bbox="280 596 517 657">(b) Energy-efficient homogeniser</td> <td data-bbox="517 596 1126 657">The homogeniser's working pressure is reduced through optimised design and thus the associated electrical energy needed to drive the system is also reduced.</td> </tr> <tr> <td data-bbox="280 657 517 718">(c) Use of continuous pasteurisers</td> <td data-bbox="517 657 1126 718">Flow-through heat exchangers are used (e.g. tubular, plate and frame). The pasteurisation time is much shorter than that of batch systems.</td> </tr> <tr> <td data-bbox="280 718 517 799">(d) Regenerative heat exchange in pasteurisation</td> <td data-bbox="517 718 1126 799">The incoming milk is preheated by the hot milk leaving the pasteurisation section.</td> </tr> <tr> <td data-bbox="280 799 517 900">(e) Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation</td> <td data-bbox="517 799 1126 900">UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.</td> </tr> <tr> <td data-bbox="280 900 517 960">(f) Multi-stage drying in powder production</td> <td data-bbox="517 900 1126 960">A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.</td> </tr> <tr> <td data-bbox="280 960 517 1038">(g) Precooling of ice-water</td> <td data-bbox="517 960 1126 1038">When ice-water is used, the returning ice-water is pre-cooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.</td> </tr> </tbody> </table> <p>Applicable in addition to BAT6</p>	Technique	Description	(a) Partial milk homogenisation	The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.	(b) Energy-efficient homogeniser	The homogeniser's working pressure is reduced through optimised design and thus the associated electrical energy needed to drive the system is also reduced.	(c) Use of continuous pasteurisers	Flow-through heat exchangers are used (e.g. tubular, plate and frame). The pasteurisation time is much shorter than that of batch systems.	(d) Regenerative heat exchange in pasteurisation	The incoming milk is preheated by the hot milk leaving the pasteurisation section.	(e) Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation	UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.	(f) Multi-stage drying in powder production	A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.	(g) Precooling of ice-water	When ice-water is used, the returning ice-water is pre-cooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.	CC	<p>The operator has provided information to support compliance with BATc 21. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 21.</p> <p>In order to increase energy efficiency the Operator has stated they use;</p> <ul style="list-style-type: none"> • a continuous pasteurisation process • multi-stage drying
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(g) Precooling of ice-water	When ice-water is used, the returning ice-water is pre-cooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.																		

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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									
23	<p>BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from drying</p> <table border="1" data-bbox="259 333 1155 557"> <thead> <tr> <th data-bbox="259 333 474 424">Parameter</th> <th data-bbox="474 333 714 424">Description</th> <th data-bbox="714 333 1155 424">BAT-AEL (average over the sampling period)</th> </tr> </thead> <tbody> <tr> <td data-bbox="259 424 474 480">Dust</td> <td data-bbox="474 424 714 480">Mg/Nm³</td> <td data-bbox="714 424 1155 480"><2-10 ⁽¹⁾</td> </tr> <tr> <td colspan="3" data-bbox="259 480 1155 557">(1) The upper end of the range is 20 mg/Nm³ for drying of demineralised whey powder, casein and lactose.</td> </tr> </tbody> </table>	Parameter	Description	BAT-AEL (average over the sampling period)	Dust	Mg/Nm ³	<2-10 ⁽¹⁾	(1) The upper end of the range is 20 mg/Nm ³ for drying of demineralised whey powder, casein and lactose.			FC	<p>The operator has provided information to support compliance with BATc 23 BAT-AELs. We have assessed the information provided and we are not satisfied the operator has demonstrated compliance with BATc 23 BAT-AELs.</p> <p>Bag filters are used to filter emissions from the spray drier at points A4 and A5. Continuous monitoring is undertaken and should powder content exceed 16mg/m³ the process shuts down. The operator has provided monitoring data for Jan - Sept 2022 which shows a maximum emission limit of 9mg/m³ for Egron 1 (A4) and a maximum emission limit of 19mg/m³ for Egron 2 (A5).</p> <p>The overall trend appeared to show Egron 2 emissions spiking several times over the measurement period above 10mg/m³.</p> <p>As detailed above the after drier has previously been replaced with a larger design requiring the relocation of emission point A8. This is served by cyclones. This is currently unmonitored and the operator has confirmed the new drier was installed with a design capacity to achieve an emission limit of 20mg/m³ but we have included a future dated limit. This plant has previously been unpermitted and is therefore classed as “new plant”. The plant should be BAT compliant from permit issue however we have given consideration to the design, retrofit and procurement of parts and given an extended compliance date.</p> <p>Improvement Condition IC8 has been added to</p>
Parameter	Description	BAT-AEL (average over the sampling period)										
Dust	Mg/Nm ³	<2-10 ⁽¹⁾										
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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 permit requiring the operator to set out how they will achieve compliance by Dec 4 th 2025		
Dairy Sector Environmental Performance Levels					
EPL	Environmental Performance Level – Energy consumption for the dairy sector		N/A	<p>The operator provided information confirming their total energy use for 01/08/2021 - 31/07/2022 was 83,193 MWh. The total raw material used to produce the finished goods was 92,917 tonnes. Total Energy Use / Tonne Total Raw Material = 0.895 MWh/T</p> <p>This is outside the target range of 0.2 – 0.5 MWh/tonne of raw materials however the applicant confirmed that only 61.3% of the total raw material ingredients used in the finished goods are milk. We are therefore satisfied that EPL for energy consumption is not applicable to this installation, the proportion of milk produced at the site is significantly less than 80% over the overall production.</p>	
	Main product (at least 80 % of the production)	Unit			Specific energy consumption (yearly average)
	Market milk	MWh/tonne of raw materials			0.1-0.6
	Cheese				0.10-0.22 ⁽¹⁾
	Powder				0.2-0.5
Fermented milk	0.2-1.6				
(1) The specific energy consumption level may not apply when raw materials other than milk are used.					

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 dairy sector	N/A	<p>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 the waste water discharge for the dairy sector.</p> <p>The powder figure of 1.2 – 2.7 m³/tonne of specific waste water discharge of raw materials is appropriate for this installation. The Operator has stated that the site achieved a specific waste water discharge of 1.8 m³/tonne of raw material as an average over one years (2021-2022) which is well within the target, reflecting good management at this installation.</p> <p>As above, the EPL however does not apply as the proportion of milk produced is less than 80% of the overall production.</p>		
	Main product (at least 80 % of the production)			Unit	Specific waste water discharge (yearly average)
	Market milk			m ³ /tonne of raw materials	0.3 - 3.0
	Cheese				0.75 - 2.5
Powder	1.2 – 2.7				

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

Updating permit during permit review consolidation

- Activity name
- Introductory note (updated)
- Site plan
- Change the location of emission point A8. This reflects the replacement of an existing after drier to a larger machine positioned on the ground floor. The cyclone emission point is moved to the roof of the tote building.
- Table S1.1 overhaul
 - Change the listed activity reference to S6.8 Part A1 (d)(iii)(aa) to more accurately reflect activities on site
 - 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.

Production/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.

Whilst the volume of raw milk permitted at the site has increased since the previous variation we are satisfied that the associated risks have not changed, due to the effluent treatment plant capacity being assessed when originally permitted.

Changes were made to the effluent treatment plant in years 2019/2020 including the addition of a homogenisation tank, removal of membranes within the MBR process and addition of an additional DAF plant. These work were completed with the agreement of the EA outside the permit variation process. The inputs and outputs were considered to remain the same.

Emissions to Air

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

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

Implementing the requirements of the Medium Combustion Plant Directive

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

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

The Operator provided the information in the table(s) below:

Boilers

	Boiler 1	Boiler 2
1. Rated thermal input (MW) of the medium combustion plant.	8.1	12.7
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler	Boiler
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	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.	1991	1991

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

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

Particulate Emissions

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

If the operator has identified current compliance against BAT-AELs we will implement the relevant emission limit value (ELV) from the date of permit issue. This is relevant for emission point A4 against BAT 23 for dust emissions from the bag filter.

For emission points noted to be future complaint we would incorporate an interim ELV and monitoring requirements from the date of permit issue. This is relevant for emission points A5 and A8.

We have incorporated an improvement condition (IC8) to ensure the monitoring is carried out as soon as reasonably practical prior to December 2023 for these emission points

We have added an improvement condition (IC9) 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 eg 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 eg 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.

Sewer discharge S2 has been added into the permit. This is where effluent leaves the site and monitoring is now undertaken. Previously monitoring was undertaken at Point S1 where the effluent entered the United Utilities Dalston WWTW. For clarity and to indicate the effluent pipe route both points are included in table S3.3 and the site plan.

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 Dalston Site Report Nov 2004 during the original application received on 30/05/2006. 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.

The Operator submitted a summary report which referenced the site condition report and baseline report. We have reviewed the information and we consider that it adequately describes the current condition of the soil and groundwater. Consequently, we are satisfied that the baseline conditions have not changed.

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 confirmed there has been no change in the hazardous substances used, their capability of causing pollution and/or the pollution prevention measures at the installation since the risk assessment was submitted on 04/06/2018.

Consequently, we are satisfied there has been no change to the assessment of risk for hazardous substances.

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 which we consider to be a severe weather event.

The operator has submitted a climate change adaptation plan, which considers, as a minimum the impact of severe weather on the operations within the installation.

We consider the climate change adaptation plan to be appropriate for the installation.

Containment

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

The Operator provided details of all tanks;

- Tank reference/name
- Contents
- Capacity (litres)
- Location
- Construction material(s) of each tank
- The bunding specification including
 - Whether the tank is bunded

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

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

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

Annex 3: Improvement Conditions

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

Previous improvement conditions marked as complete in the previous permit.

Superseded Improvement Conditions – Removed from permit as marked as “complete”	
Reference	Improvement Condition
IC1	<p>The operator shall install appropriate monitoring systems, in accordance with SGN 6.13, Agency Guidance note M18, to monitor emissions from discharge points W1 and S1. Systems should ensure that all parameters specified in Tables S.4.2 and S.4.3 can be measured.</p> <p>Monitoring systems shall have either MCERTS certification or as otherwise agreed in accordance with condition 3.6.3.</p>
IC2	<p>The operator shall review emissions and the techniques used to control particulate release from points A2 and A4.</p> <p>A BAT assessment shall be undertaken, and a written report submitted to the Agency.</p> <p>Where the assessment identifies an option that is BAT, then the operator shall submit a plan for implementation</p> <p>Detailed monitoring and dispersion modelling of particulate emissions from the site will then be undertaken. A detailed impact assessment of these particulate emissions, and their impact on local receptors and the River Eden SAC will be completed. A written summary of the monitoring and modelling shall be submitted to the Agency.</p> <p>A timetable to ensure emissions from particulate arrestment plant should be continuously indicatively monitored for particulate matter shall be submitted to the Environment Agency. (By continuous indicative monitoring is meant monitoring to indicate the relative performance and/or process variation.) The indicative monitor should be fitted with a visual and audible alarm, which activates at a reference level, agreed with the regulator.</p>
IC3	<p>A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or as otherwise agreed in accordance with condition 3.6.3.</p>
IC4	<p>An assessment of the secondary containment measures all areas should be undertaken.</p> <p>The assessment should include, but not be limited to, current bunding, process milk silos, tanker delivery areas, creamer storage tank, corn syrup, and effluent areas. The assessment should also consider the installation of</p>

	<p>an emergency cut off on the surface water drainage system.</p> <p>A summary of the assessment, and a plan for improvements, if necessary, shall be forwarded to the Environment Agency.</p>
IC5	<p>The operator should undertake a study of the feasibility of reusing cooling water abstracted from the River Caldeu.</p> <p>A written report detailing the findings shall be forwarded to the Environment Agency. Where the review identifies an option that is BAT, then the operator shall propose a timescale for implementation.</p> <p>Following submission of the report, the operator shall implement the option approved in writing to the timescale agreed.</p>
IC6	<p>An Investigation into the potential for recirculating exhaust air from the spray driers to heat the inlet air will be undertaken.</p> <p>A written report detailing the findings shall be forwarded to the Environment Agency.</p> <p>Where the assessment identifies an option that is BAT, then the operator shall submit a plan for implementation</p>
IC7	<p>Submit a written review of the environmental impact on the River Caldeu from the discharge of process cooling waters from discharge point W3 to the Environment Agency for approval. The review must demonstrate that thermal discharges are fully compliant with the requirements of the Water Framework Directive (2000/60/EC) for the protection of salmonid waters, and in particular demonstrate that the current monitoring point W4 (Table S4.2) located 50m downstream from the discharge point defines the edge of the mixing zone for the thermal plume. A suitable temperature sampling procedure including the depth in the water column that the sample is taken should also be provided. The plan must contain dates for the implementation of individual measures where necessary.</p> <p>The notification requirements of condition 1.4.1 will be deemed to have been complied with on submission of the plan.</p> <p>You must implement the plan as approved, and from the date stipulated by the Environment Agency.</p>

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IC8	<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. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Current performance against the BAT-AELs. 2) Methodology for reaching the BAT-AELs. 3) Associated targets /timelines for reaching compliance by 4 December 2023. 4) Any alterations to the initial plan (in progress reports). <p>The report shall address the BAT Conclusions for Food, Drink and Milk industries with respect to the following:</p> <ul style="list-style-type: none"> • BAT 5 and BAT 23 Table 10 (compliance with BAT-AELs for channelled dust emissions to air from drying) <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	<p>04 Dec 2023</p> <p>Date at which existing plant must be compliant</p>

IC9	<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 (emission point A8) but will be achieved before 4 December 2025. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Current performance against the BAT-AELs. 2) Methodology for reaching the BAT-AELs. 3) Associated targets /timelines for reaching compliance by 4 December 2023. 4) Any alterations to the initial plan (in progress reports). <p>The report shall address the BAT Conclusions for Food, Drink and Milk industries with respect to the following:</p> <ul style="list-style-type: none"> • BAT 23 Table 10 (compliance with BAT-AELs for channelled dust emissions to air from drying) <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	04 Dec 2025. Agreed with operator. Date at which new plant can achieve compliance.
IC10	<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 A4, A5 and A8, 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>	12 Months from permit issue. Date agreed with operator.