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/KP3437PG
The Operator is:	Meadow Foods Limited
The Installation is:	Station Lane Dairy
This Variation Notice number is:	EPR/KP3437PG/V003

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 25/03/2022 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 24/07/2022.

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 4, 6, 9, and BAT-AELs for water discharge. The operator does not currently comply with the requirements of BAT-AELs. In relation to this/these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Condition IC10 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 02/10/2023 concerning BATcs 1, 6(a), 9, 11, Boiler 3, cooling towers, updated site plan. A copy of the further information request was placed on our public register.

3 The legal framework

The Consolidated Variation Notice will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Annex 1: decision checklist regarding relevant BAT Conclusions

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

There are 37 BAT Conclusions.

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

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

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

This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

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

NA – Not Applicable
CC – Currently Compliant
FC – Compliant in the future (within 4 years of publication of BAT Conclusions)
NC – Not Compliant

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
GENERAL BAT CONCLUSIONS (BAT 1-15)			
1	**Environmental Management System - Improve overall environmental performance.** Implement an EMS that incorporates all the features as described within BATc 1.	**CC**	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 a EMS externally accredited to the ISO14001 standard.
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.	**CC**	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 declared having the following: • A system for reviewing raw materials usage, energy, and water consumption as well as waste gases monitoring procedure. • A simplified process flow diagram and a description of process-integrated techniques. • Information about water consumption and wastewater generation • Wastewater chemical composition • Information about waste gases characteristics. • Information regarding energy consumption, raw materials usage, and waste sources. • Use of automated monitoring system through the Atlas platform.
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	**CC**	The operator has provided information to support compliance with BATc 3. 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
	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).		satisfied that the operator has demonstrated compliance with BATc 3. The Operator declared that: • Takes daily monitoring of wastewater via the automated system, Atlas. • Effluent parameters monitored Biochemical Oxygen Demand (BOD), Suspended Solids (SS), ammoniacal nitrogen, pH, discharge rate, heavy metals.
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.	**FC**	The operator has provided information to support compliance with BATc 4. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 4. The Operator declared that is monitoring the following parameters: • **BOD – ISO 5815:1989** (daily) • **SS – ISO 11929:1997 EN872** (daily) • **COD – monitored but not reported** • **Total nitrogen (TN)– not monitored** • **Total phosphorous (TP) – not monitored** **We have taken this opportunity to update the consolidated permit with monitoring requirements and new parameters, as per this BATc, shown below:** • **BOD – ISO 5815:1989 (retained)** • **COD – As agreed in writing with the Environment Agency (daily)** • **TN - EN 12260, EN ISO 11905-1 – daily**

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			• **TP - EN ISO 6878, EN ISO 15681-1 and -2, EN ISO 11885 – daily** • **TSS - EN 872 – Daily (frequency retained)** Other parameters existent in the current permit variation will be retained in their current form including: • ammoniacal nitrogen - BS 6068: Section 2.11:1987 – daily • pH - calibrated pH probe - daily • discharge rate – 60 m^3/h and 1140 m^3/d We consider that the operator will be future compliant with BATc 4. Improvement condition IC8 has been included in the permit to achieve compliance (see Annex 3).
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.	**NA**	We are satisfied that BATc 5 is not applicable to this installation. This BATc is concerned with dust emissions from drying and cooling processes associated with cheese manufacturing. This installation does not manufacture cheese therefore, this BATc is not applicable.
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 the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 6. **The Operator declared that in partnership with a 3rd party started the development of an energy management plan, based on iterative KPIs, aimed at becoming carbon neutral by 2030. However, this plan was not submitted as part of the Reg.61 or RFI response but only a screenshot of the**

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
			improvement opportunities list that contained only the name of considered actions and a short description. We do not consider this evidence as a being sufficient to satisfy the requirement of BATc 6(a), and a stand-alone Energy Efficiency Plan is required for this installation. The Operator declared that it is using the following energy efficiency techniques: • Burner regulation and control • Energy efficient motors • Heat recovery with heat exchangers • Efficient lighting • Minimising blowdown from boilers • Optimised steam distribution system • Preheating feed water (including the use of economisers) • Process control systems • Reduced compressed air leaks • Reduced heat losses by insulation • Variable speed drives • Multiple-effect evaporation. We consider that the operator will be future compliant with BATc 6(a). Improvement condition IC8 has been included in the permit to achieve compliance (see Annex 3).
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	**CC**	The operator has provided information to support compliance with BATc 7. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 7. The Operator declared that is using the following techniques:

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	(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		• Water recycling by reusing condensate in hosepipes and CIP. • MCERT certified water flow optimisation system reviewed every 5 years. • Optimisation of chemical dosing and water use in cleaning in place is used to clean all silos and lines. • High-pressure cleaning to clean the evaporator tubes performed annually. • Cleaning of equipment as soon as possible. • Low-pressured foam used in process departments.
8	**Prevent or reduce the use of harmful substances** In order to prevent or reduce the use of harmful substances, e.g. in cleaning and disinfection, BAT is to use one or a combination of the techniques given below. (a) Proper selection of cleaning chemicals and/or disinfectants (b) Reuse of cleaning chemicals in cleaning-in-place (CIP) (c) Dry cleaning (d) Optimised design and construction of equipment and process areas	**CC**	The operator has provided information to support compliance with BATc 8. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8. The Operator declared that is using the following techniques: • Chemicals selected and implemented and monitored by the technical team. Cleaning standards verified. • Recovery of CIP detergents in from multiple CIP systems. Cultured department CIP circulates detergent round the system from the header tank so recovers also. • Automated CIP systems to reduce water by operator misuse.
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.

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			Although the installation uses ammonia in four chilled water compressors, several assets are using refrigerants with high GWP potential, as shown below: • **R134A – 2 X fridges in Cultured room** • **R404A – Modular fridge 3** • **R407A – Modular fridge 4** • **R424A – F&R Cooler** • **R508B – Low temperature freezers 1, 2, 3, and 4.** We consider that the operator will be future compliant with BATc 9. Improvement condition IC9 has been included in the permit to achieve compliance (see Annex 3).
10	**Resource efficiency** In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below: (a) Anaerobic digestion (b) Use of residues (c) Separation of residues (d) Recovery and reuse of residues from the pasteuriser (e) Phosphorus recovery as struvite (f) Use of waste water for land spreading	**CC**	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. The Operator declared that is using off-site anaerobic digestion of the sludge resulted from the on-site effluent treatment plant (ETP) where the installation's process water is treated.
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. The Operator declared that it has sufficient wastewater buffer capacity in the form of a

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			divert tank of 6,500 m^3 volume. The ETP is constantly monitored through the SCADA automated system. In case of accidental spillages, the ETP will receive and treat it prior to discharge to River Foulness. A sluice gate is located downstream of the water discharge release points which, in the event of an emergency, can be closed, in addition of having a penstock valve. Complimentary, there is an in-situ submersible pump in the dyke for pumping any contaminated surface water to the main drains system for treatment in the ETP.
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 (i) Enhanced biological phosphorus removal Final solids removal (j) Coagulation and flocculation (k) Sedimentation (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation	**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 declared that is using the following techniques: • Equalisation • Physical separation • Aerobic and anaerobic treatment • Nitrification and denitrification • Filtration • Coagulation and flocculation, prior to discharge to River Foulness via emission point W1. Emission points W2 to W8 discharge to the municipal drainage system of uncontaminated surface wate run-off from blue surface water/storm water drains.

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12	**Emissions to water – treatment** **BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body** Parameter | BAT-AEL (1) (2) (daily average) Chemical oxygen demand (COD) (3) (4) | 25-100 mg/l (5) Total suspended solids (TSS) | 4-50 mg/l (6) Total nitrogen (TN) | 2-20 mg/l (7) (8) Total phosphorus (TP) | 0,2-2 mg/l (9)	**FC**	The operator has provided information to support compliance with BAT-AELs. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BAT-AELs. The Operator declared the following data: • TSS – 33 mg/l **We have taken this opportunity to include ELVs, in line with this BAT-AELs, and update existing ELVs as shown below:** • **COD – 125 mg/l** • **TSS – 50 mg/l** • **TN – 20 mg/l** • **TP – 4 mg/l** Ammoniacal nitrogen will be retained at 6 mg/l value shown in the extant permit. We consider that the operator will be future compliant with BAT-AELs. Improvement condition IC10 has been included in the permit to achieve compliance (see Annex 3).
13	**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: - 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.	**NA**	We are satisfied that BATc 13 is not applicable to this Installation. 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 nuisances from the site therefore an NMP is not a requirement for this site.
14	**Noise management**	**CC**	The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are

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	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		satisfied that the operator has demonstrated compliance with BATc 14. The Operator declared using the following noise management measures: • Appropriate location of buildings and equipment • Operational measures such as no deliveries after 10pm. • Enclosing of noise generating equipment.
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. - 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.	**CC**	The operator has provided information to support compliance with BATc 15. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 15. The Operator submitted an Odour Management Plan (OMP) containing the following sections: • Scope and Objective of the OMP • Background and site description • Identification of odour sources, pathways, and receptors • Odour generation mechanisms • Control measures • Monitoring provisions • Complaints handling • Odour complaints investigation protocol • Independent 3rd party advice • OMP amendments and timescales Because this OMP has been voluntarily developed by the Operator, we consider it as being part of the EMS.
	DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)		

<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>21</td><td>Energy efficiency – Dairy 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></tr>
<tr><td>(a)</td><td>Partial milk homogenisation</td><td>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>(b)</td><td>Energy-efficient homogeniser</td><td>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>(c)</td><td>Use of continuous pasteurisers</td><td>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>(d)</td><td>Regenerative heat exchange in pasteurisation</td><td>The incoming milk is preheated by the hot milk leaving the pasteurisation section.</td></tr>
<tr><td>(e)</td><td>Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation</td><td>UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.</td></tr>
<tr><td>(f)</td><td>Multi-stage drying in powder production</td><td>A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.</td></tr>
<tr><td>(g)</td><td>Precooling of ice-water</td><td>When ice-water is used, the returning ice-water is precooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.</td></tr>
</table>

Applicable in addition to BAT6</td><td>CC</td><td>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.

The Operator declared suing the following techniques:
• Use of energy efficient homogenisers
• Regenerative heat exchange in all mil pasteurisers.</td></tr>
</table>

<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>22</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.

<table>
<tr><th colspan="2">Technique</th><th>Description</th></tr>
<tr><td colspan="3">Techniques related to the use of centrifuges</td></tr>
<tr><td>(a)</td><td>Optimised operation of centrifuges</td><td>Operation of centrifuges according to their specifications to minimise the rejection of product.</td></tr>
<tr><td colspan="3">Techniques related to butter production</td></tr>
<tr><td>(b)</td><td>Rinsing of the cream heater with skimmed milk or water</td><td>Rinsing of the cream heater with skimmed milk or water which is then recovered and reused, before the cleaning operations.</td></tr>
<tr><td colspan="3">Techniques related to ice cream production</td></tr>
<tr><td>(c)</td><td>Continuous freezing of ice cream</td><td>Continuous freezing of ice cream using optimised start-up procedures and control loops that reduce the frequency of stoppages.</td></tr>
<tr><td colspan="3">Techniques related to cheese production</td></tr>
<tr><td>(d)</td><td>Minimisation of the generation of acid whey</td><td>Whey from the manufacture of acid-type cheeses (e.g. cottage cheese, quark and mozzarella) is processed as quickly as possible to reduce the formation of lactic acid.</td></tr>
<tr><td>(e)</td><td>Recovery and use of whey</td><td>Whey is recovered (if necessary using techniques such as evaporation or membrane filtration) and used, e.g. to produce whey powder, demineralised whey powder, whey protein concentrates or lactose. Whey and whey concentrates can also be used as animal feed or as a carbon source in a biogas plant.</td></tr>
</table></td><td>CC</td><td>The operator has provided information to support compliance with BATc 22. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 22.

The Operator declared that ‘optimised operation of centrifuges’ techniques is currently used at this installation.</td></tr>
<tr><td>23</td><td>In order to reduce channelled dust emissions to air from drying, BAT is to use one or a combination of the techniques given below.

<table>
<tr><th colspan="2">Technique</th><th>Description</th><th>Applicability</th></tr>
<tr><td>(a)</td><td>Bag filter</td><td rowspan="3">See Section 14.2 Page 34 of the Bref</td><td>May not be applicable to the abatement of sticky dust.</td></tr>
<tr><td>(b)</td><td>Cyclone</td><td rowspan="2">Generally applicable.</td></tr>
<tr><td>(c)</td><td>Wet scrubber</td></tr>
</table>
The associated monitoring is given in BAT 5.</td><td>NA</td><td>We are satisfied that BATc 23 is not applicable to this installation.

This BATc is concerned with the mitigation of dust laden gases emitted during drying and/or cooling of cheese/whey. This installation does not manufacture these products therefore, this BATc is not applicable.

There is an unnamed air emission point shown in the Reg.61 Response associated with chocolate milling using a bag filter. This process is not pertinent to the BATc 23.</td></tr>
</table>

<table>
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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>23</td><td>BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from drying
<table><tr><td>Parameter</td><td>Description</td><td>BAT-AEL (average over the sampling period)</td></tr><tr><td>Dust</td><td>Mg/Nm^3</td><td><2-10 (1)</td></tr><tr><td colspan="3">(1) The upper end of the range is 20 mg/Nm^3 for drying of demineralised whey powder, casein and lactose.</td></tr></table></td><td>NA</td><td>We are satisfied that BAT-AEL is not applicable to this installation.

This site does not have direct dust emissions to air from drying processes therefore, this BAT-AEL is not applicable.</td></tr>
<tr><td colspan="2">Dairy Sector Environmental Performance Levels</td><td></td><td></td></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Energy consumption for the dairy sector
<table><tr><td>Main product (at least 80 % of the production)</td><td>Unit</td><td>Specific energy consumption (yearly average)</td></tr><tr><td>Market milk</td><td rowspan="4">MWh/tonne of raw materials</td><td>0.1-0.6</td></tr><tr><td>Cheese</td><td>0.10-0.22 (1)</td></tr><tr><td>Powder</td><td>0.2-0.5</td></tr><tr><td>Fermented milk</td><td>0.2-1.6</td></tr><tr><td colspan="3">(1) The specific energy consumption level may not apply when raw materials other than milk are used.</td></tr></table></td><td>NA</td><td>We are satisfied that BAT-EPL for energy consumption is not applicable to this installation.

The Operator declared that its main product, market milk, does not amount to 80% of the total finished foodstuff volume, the threshold of this EPL, but only 76% therefore, this BAT-EPL is not applicable.

However, the Operator declared an energy consumption for 2021 of 0.7 MWh/t.</td></tr>
</table>

<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>EPL</td><td>Environmental Performance Level – Specific waste water discharge for the dairy sector
<table>
<tr><td>Main product (at least 80 % of the production)</td><td>Unit</td><td>Specific waste water discharge (yearly average)</td></tr>
<tr><td>Market milk</td><td rowspan="3">m^3/tonne of raw materials</td><td>0.3 - 3.0</td></tr>
<tr><td>Cheese</td><td>0.75 - 2.5</td></tr>
<tr><td>Powder</td><td>1.2 – 2.7</td></tr>
</table></td><td>NA</td><td>We are satisfied that BAT-EPL for energy consumption is not applicable to this installation.

The Operator declared that its main product, market milk, does not amount to 80% of the total finished foodstuff volume, the threshold of this EPL, but only 76% therefore, this BAT-EPL is not applicable.

However, the Operator declared for 2021 a volume of wastewater discharged of approximately 4.3 m^3/t.</td></tr>
</table>

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

Updating permit during permit review consolidation

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

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

Production/Capacity Threshold

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

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

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

The existing H1 assessment of particulate emissions to air remains valid for the revised capacity threshold now placed within table S1.1 of the permit.

Emissions to Air

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

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

Implementing the requirements of the Medium Combustion Plant Directive

Existing Medium Combustion Plant (1MW-50MW)

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

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

The Operator provided the information in the table below:

Boilers

1. Rated thermal input (MW) of the medium combustion plant.	18.4 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler 1 – 9.2 MWth Boiler 2 – 9.2 MWth
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural gas 100% and light fuel oil (no data)
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.	2014

The Operator declared in the RFI reply dated 20/10/2023 that, although Boilers 1 and 2 are dual fuel, these have been used solely on natural gas for more than 5 years. We will include this reference in the consolidated permit, but we will not be adding supplementary ELVs and monitoring requirements for the use of fuel oil as the MCPD Annex II has the same requirements for both natural gas and fuel oil.

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

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

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

The Reg.61 Response contains a third Boiler of 9.2 MWth input named ‘Ruston Thermax No 3’ that is not currently used, and the Operator declared in the RFI reply dated 20/10/2023 that there is no need for the use of this boiler. Because this MCP does not appear in the extant variation, V002 issued on 18/02/2014,

and have found no evidence of a permit variation to include this asset, we will not be including Boiler 3 in the consolidated permit. To commission this boiler for future use, the Operator will be required to apply for a permit variation and follow the Environment Agency's permitting steps.

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

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

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

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

Soil & groundwater risk assessment (baseline report)

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

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

The Operator submitted a site condition report [Doc. Ref. BHM04/ASR06 from October 2004] during the original application received on 18/03/2005. The site condition report included a report on the baseline conditions as required by Article 22. We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time.

In addition, The Operator is currently using a Site Protection and Monitoring Plan (SPMP) that is updated and reviewed periodically. A copy of the SPMP has been submitted as part of the Reg.61 Response.

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 with the original permit application on 18/03/2005. 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 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 (IC11) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

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 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.

We reviewed the information provided by the operator and their findings. We are not satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736.

The Operator provided supporting information in relation to existing containment measures on this site. From studying the Reg. 61 Response submitted on 24/07/2022 we have concluded that none of the ETP tanks meet the CIRIA C736 standards in that these are not bunded individually nor share a bund with other tanks. Because of high concentration of BOD, TSS, TN, TP, ammoniacal nitrogen, and chemicals from CIP present in the effluent produced at this installation, we consider the lack of bunding to represent a significant risk to the environmental and human receptors if an accident such as a spillage or catastrophic loss of containment would take place.

We have set improvement conditions in the permit to address the deficiencies in the existing tanks and containment measures on site (IC12). See Improvement Conditions in Annex 3 of this decision document.

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 develop and implement a formalised Environmental Management System, having regard to Section 2.3 of the Agency Sector Guidance Note IPPC S6.10.
IC2	The Operator shall develop a written Site Closure Plan having regard to Section 2.11 of the Agency Sector Guidance Note IPPC S6.13 and shall submit a copy to the Agency for approval.
IC3	The Operator shall undertake an assessment of the surfacing and containment measures on site (including the condition of site drains). The assessment will take into account the requirements of section 2.2.5 of Agency Sector Guidance Note IPPC S6.13, Issue 1, October 2003. A written report summarising the findings, along with proposals for improvements and a proposed timetable for implementation, shall be submitted to the Agency.
IC4	The Operator shall develop and maintain an Accident Management Plan having regard to Section 2.8 of the Agency Sector Guidance Note IPPC S6.13, Issue 1, October 2003. The Operator shall ensure, in particular, that the Plan includes risk assessments and the development of suitable measures and procedures with the purpose of minimising the potential for environmental impacts arising from the following scenarios: • flooding; • catastrophic failure of unbounded raw material and ETP storage tanks / silos; • a major fire (with subsequent firewater run-off). The Accident Management Plan and any proposals for improvements, with timetable for implementation, shall be submitted to the Agency.
IC5	The Operator shall implement a planned preventative maintenance schedule for all plant infrastructure, including the Installation's boilers, whose failure could lead to an environmental impact, having regard to the Section 2.3 of the Agency Sector Guidance Note IPPC S6.13, Issue 1, October 2003. A written report summarising the key elements of the plan shall be submitted to the Agency.
IC6	The Operator shall develop and implement revised procedures for the storage of materials (including wastes) at the installation. The procedures shall be developed having regard to Section 2.2.5 of the Agency Sector Guidance Note IPPC S6.13, Issue 1, October 2003 and shall specifically include the requirement for storage areas to be clearly labelled with storage capacity, material identity and the maximum storage duration. A written report shall be submitted to the

	Agency detailing the procedures that are developed and implemented at the installation.
IC7	The operator shall provide the Agency with written proposals for a programme of monitoring for particulate releases from emission point A5. Monitoring shall be carried out to an appropriate recognised standard. The proposals shall include a justification for the frequency and method of monitoring and a proposed timetable for implementation.

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**
IC8	The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved but will be achieved before 4 December 2023. The report shall include, but not be limited to, the following: 1) Methodology for achieving BAT 2) Associated targets/timelines for reaching compliance by 4 December 2023. The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 4 and 6. Refer to BAT Conclusions for a full description of the BAT requirement.	04/12/2023
IC9	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 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.	04/12/2023
IC10	The operator shall submit, for approval by the Environment Agency, a report demonstrating achievement of the Best Available Techniques	04/12/2023

	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: Methodology applied for reaching the BAT-AELs. Performance against the BAT-AELs. The report shall address the BAT Conclusions for Food, Drink and Milk industries with respect to the following: • BAT 12 Table 1 (compliance with BAT-AELs for direct discharges to a receiving water body). Refer to BAT Conclusions for a full description of the BAT requirement.	
IC11	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 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.	12 months from permit issue or other date as agreed in writing with the Environment Agency.
IC12	The Operator shall undertake a survey of the primary, secondary and tertiary containment 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 or other date as agreed in writing with the Environment Agency.