

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/BP3232SF
The Operator is: AG & RJ Barber Limited
The Installation is: Maryland Farm Cheese Production
This Variation Notice number is: EPR/BP3232SF/V006

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 21/07/2022.

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

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request on 31/05/2023 regarding BAT 6, 7, 9, 12, 22, AEPLs, containment and MCPD information. A copy of further information request was placed on our public register, which was received on 14/06/2023 and 19/06/2023.

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 EMS is externally accredited to the ISO 14001 standard. The operator also participates in a Climate Change Agreement (CCA).</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 has systems in place to ensure records are kept and reviewed of waste water reaching the ETP (quantity, pH, temperature) and also records kept and reviewed of water quantities / qualities of water leaving the installation, including the monitoring of BOD/SS/ammonia and phosphate as per the previous permit requirements.</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>	FC	<p>The operator has provided information to support future compliance with BATc 4, where they are not current compliant. We have assessed the information provided and we are satisfied that the operator has demonstrated future compliance with BATc 4, where they are not currently compliant.</p>

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			<p>The current permit contains monitoring frequencies that comply with the frequencies set out in BATc 4, with future-dated requirements for COD, TN and TP.</p> <p>The operator uses a UKAS accredited laboratory to analyse all samples and has a programme in place to ensure this covers all the requirements by 04/12/2023.</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 [refer to BAT5 table in BATc] and in accordance with EN standards.</p>	CC	<p>The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 5</p> <p>The operator uses Ultra Filtration (UF) drying techniques for the whey powder. The dust levels are currently monitored 6 monthly, using monitoring method BS EN 13284-1:2004 and also continuously using monitoring method BS EN 13284-2:2004.</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 the information provided and we are satisfied that the operator has demonstrated compliance with BATc 6.</p> <p>The operator is currently using the following to manage energy efficiency:</p> <ul style="list-style-type: none"> - Energy efficient lighting employed in cheese stores - Energy efficient refrigeration employed in cheese stores - Heat recovery from refrigeration use in the packing room - Compressor management for all cheese store refrigeration compressors - New air compressor, variable speed, and energy efficient

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			<ul style="list-style-type: none"> - UF loop pumps change to inverters, removal of pressure control valves - Cold processing and enhanced heat recovery from milk to whey - Additional regeneration on whey pasteuriser saving approx. 12.5m³ gas per hour on the main boilers - Replacement of obsolete T8 light fittings with T5 + occupancy sensors - Solar energy panels (producing enough electricity to mature 2500 tonnes of cheese for 18 month) <p>These techniques and the monitoring of energy use across the site form part of the energy efficiency plan, as part of the EMS.</p>
7	<p>Water and wastewater minimisation</p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below. [for detail of each technique, refer BAT 7 table in BATc]</p> <ul style="list-style-type: none"> (a) water recycling and/or reuse (b) Optimisation of water flow (c) Optimisation of water nozzles and hoses (d) Segregation of water streams <p>Techniques related to cleaning operations:</p> <ul style="list-style-type: none"> (e) Dry cleaning (f) Pigging system for pipes (g) High-pressure cleaning (h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP) (i) Low-pressure foam and/or gel cleaning (j) Optimised design and construction of equipment and process areas (k) Cleaning of equipment as soon as possible 	CC	<p>The operator has provided information to support compliance with BATc 7. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>The operator undertakes the following techniques:</p> <ul style="list-style-type: none"> (a) water recycling and/or reuse (b) Optimisation of water flow (d) Segregation of water streams (h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP) (j) Optimised design and construction of equipment and process areas (k) Cleaning of equipment as soon as possible <p>The operator monitors the water produced by their whey plant filtration unit on a daily basis, which is sent to the ozone plant to be cleaned and reused.</p> <p>The site has CIP in place and undertake a twice a month review to identify</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			<p>improvements/reduction in quantities of water and chemical used, while still compliant on food safety.</p> <p>There is a maintenance schedule to look and fix visible leaks and regular pressure testing pipes which are underground to monitor for leaks.</p>
8	<p>Prevent or reduce the use of harmful substances</p> <p>In order to prevent or reduce the use of harmful substances, e.g. in cleaning and disinfection, BAT is to use one or a combination of the techniques given below.</p> <p>(a) Proper selection of cleaning chemicals and/or disinfectants</p> <p>(b) Reuse of cleaning chemicals in cleaning-in-place (CIP)</p> <p>(c) Dry cleaning</p> <p>(d) Optimised design and construction of equipment and process areas</p> <p>[for detail of each technique, refer BAT 8 table in BATc]</p>	CC	<p>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.</p> <p>All the substance used on site are monitored and reviewed with the principle of elimination or substitution. CIP systems are widely use on site allowing for recycling cleaning chemicals.</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 8. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8.</p> <p>An inventory of the current refrigerants was provided by the operator.</p> <p>Refrigeration gases used on site are regular monitored (daily by site operators and weekly by contractors). The operator has stated that they will ensure that they use refrigerants with the lowest GWP value when it comes to replacements, and undertake monitoring to find the chance to change refrigerants with high GWP value to a much lower equivalent.</p>
10	<p>Resource efficiency</p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <p>(a) Anaerobic digestion</p> <p>(b) Use of residues</p> <p>(c) Separation of residues</p>	CC	<p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p>

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
	(d) Recovery and reuse of residues from the pasteuriser (e) Phosphorus recovery as struvite (f) Use of waste water for land spreading		The operator has demonstrated that they have a stern resource efficiency program. Including reusing the site produced water, replacement of all the factory pumps to inverter units, cream tank cooling control saving in cooling by preventing the cream from going to cold and saving in gas in the reheating operation.
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: <ul style="list-style-type: none"> • There is 3,285m³ of storage over 3 tanks, 2 x 800m³ and 1 x 185m³ + a 1500m³ lagoon available for the winter months. • Should storage capacity be compromised an arrangement is in place with a registered waste carrier to remove material for offsite treatment. This has not been necessary previously.
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) Nitrification and/or denitrification (f) Partial nitrification - anaerobic ammonium oxidation Phosphorus recovery and/or removal	CC	The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied the operator has demonstrated compliance. The effluent treatment system comprises a balance tank and overflow lagoon, DAF plant, activated sludge and membrane tank.

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	(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 [for detail of each technique, refer BAT 12 table 1]												
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="237 762 1169 967"> <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 (°)	<p>FC</p>	<p>The operator has provided information to support future compliance with BATc 12 (BAT-AELs). We have assessed the information provided and we are satisfied that the operator has demonstrated future compliance with BATc 12 (BAT-AELs) – the future dated requirements are due to the lack of monitoring data, and links into BATc4.</p> <p>The operator has stated in their Regulation 61 response that they can achieve the emission levels by 4 December 2023, supported by monitoring data.</p> <p>The BAT-AELs for COD, TN and TP are future dated to apply from 4 December 2023.</p> <p>The extant permit limits for other parameters; TSS, BOD, Chloride, pH and FOG have been included in the varied permit.</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 (°)												
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>	<p>CC</p>	<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>										

BATC No	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	<ul style="list-style-type: none"> - a protocol 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. <p>Note: BAT13 is only applicable where a noise nuisance at sensitive receptors is expected and/or has been substantiated.</p>		The operator has developed a NMP which forms part of the on site EMS.
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 <p>[for detail of each technique, refer BAT 14 table in BATCs]</p>	CC	<p>The operator has provided information to support compliance with BATc14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc14.</p> <p>The operator has recently implemented a number of measures on site to reduce the impact of noise including relocation of noisy areas, managing contractors, improving loading and unloading processes and reducing the impact from chillers.</p>
15	<p>Odour Management</p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - 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. <p>BAT 15 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.</p>	NA	<p>We are satisfied that BATc 15 is not applicable to this installation.</p> <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>
DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)			

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																
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="248 432 1077 959"> <thead> <tr> <th>Technique</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>(a) 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) 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) 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) 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) 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) 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) Precooling of ice-water</td> <td>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>The operator is currently using the following techniques:</p> <ul style="list-style-type: none"> c) Use of continuous pasteurisers when required by production process d) Regenerative heat exchange in pasteurisation
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.																		
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Technique	Description	Applicability																					
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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="232 336 1128 560"> <thead> <tr> <th>Parameter</th> <th>Description</th> <th>BAT-AEL (average over the sampling period)</th> </tr> </thead> <tbody> <tr> <td>Dust</td> <td>Mg/Nm³</td> <td><2-10 ⁽¹⁾</td> </tr> <tr> <td colspan="3">(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.			CC	<p>The operator has given information stating that their emissions are abated to 2.7 - 3.7mg/m³. We are satisfied that BATc 23 is applicable to this installation and the operator has provided information to support compliance with BAT-AEL (10mg/m³).</p>						
Parameter	Description	BAT-AEL (average over the sampling period)																
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EPL	<p>Environmental Performance Level – Energy consumption for the dairy sector</p> <table border="1" data-bbox="232 738 1189 1066"> <thead> <tr> <th>Main product (at least 80 % of the production)</th> <th>Unit</th> <th>Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <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> </tbody> </table>	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.			NA	<p>The operator has confirmed that the cheese production facilities on the site equates to approx. 47 % of the products produced on site.</p> <p>Although an EPL does not apply, we have to ensure that the operator is demonstrating achieving an appropriate site specific benchmark and is energy efficient.</p> <p>Energy efficiency techniques are deemed to be BAT for this site, as per BATc 6.</p> <p>In addition, the operator has stated that they can achieve a EPL of 0.34MWh/t.</p>
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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										
EPL	Environmental Performance Level – Specific waste water discharge for the dairy sector	NA	<p>The operator has confirmed that the cheese production facilities on the site equates to approx. 47 % of the products produced on site.</p> <p>Although an EPL does not apply, we have to ensure that the operator is demonstrating achieving an appropriate site specific benchmark and is water efficient.</p> <p>Water efficiency techniques are deemed to be BAT for this site, as per BATc 7.</p> <p>The operator has stated that they can achieve a specific waste water discharge of 0.87m³/t</p>										
	<table border="1"> <thead> <tr> <th data-bbox="232 328 551 397">Main product (at least 80 % of the production)</th> <th data-bbox="551 328 869 397">Unit</th> <th data-bbox="869 328 1187 397">Specific waste water discharge (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="232 402 551 448">Market milk</td> <td data-bbox="551 402 869 534" rowspan="3">m³/tonne of raw materials</td> <td data-bbox="869 402 1187 448">0.3 - 3.0</td> </tr> <tr> <td data-bbox="232 448 551 491">Cheese</td> <td data-bbox="869 448 1187 491">0.75 - 2.5</td> </tr> <tr> <td data-bbox="232 491 551 534">Powder</td> <td data-bbox="869 491 1187 534">1.2 – 2.7</td> </tr> </tbody> </table>			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
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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
- 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 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.

Emissions to Air

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

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

Implementing the requirements of the Medium Combustion Plant Directive

Existing Medium Combustion Plant (1MW-50MW)

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

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

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

Boilers

1. Rated thermal input (MW) of the medium combustion plant.	Boiler 1: 6.4MWth Boiler 2: 6.4MWth Combined capacity: 12.8 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boilers
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural Gas 100%
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.	Boiler 1: 20/04/2007 Boiler 2: 19/04/2007

Generators

1. Rated thermal input (MW) of the medium combustion plant.	1.2 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Back-up diesel generator
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Diesel
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.	Pre-2018

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.

For the existing diesel generator, as it is conditioned to operate less than 500 hours per annum, the monitoring requirements apply from 1 January 2030 (as less than 5MW).

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

Particulate Emissions

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

If the operator has identified current compliance against BAT-AELs we will implement the relevant emission limit value (ELV) from the date of permit issue. This is relevant for emission point A6 against BAT 23 for dust emissions from the bag filter/cyclone.

We have added an improvement condition (IP11) 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.

Soil & groundwater risk assessment (baseline report)

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

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site’s current or approved future use. To do this, the Operator has to submit a surrender application to us, which

we will not grant unless and until we are satisfied that these requirements have been met.

The Operator submitted a site condition report during the original application in 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 and the operator developed an SPMP in April 2006.

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 provided a short risk assessment on the hazardous substances stored and used at the installation. The risk assessment was a stage 1-3 assessment as detailed within EC Commission Guidance 2014/C 136/03.

The stage 1 assessment identified the hazardous substances used / stored on site. The stage 2 assessment identified if hazardous substances are capable of causing pollution. If they are capable of causing pollution they are then termed Relevant Hazardous Substances (RHS). The Stage 3 assessment identified if pollution prevention measures are fit for purpose in areas where hazardous substances are used / stored. This includes drains as well.

The outcomes of the three stage assessment identified that pollution of soil and/or ground water to be unlikely.

Climate Change Adaptation

The operator has considered if the site is at risk of impacts from adverse weather (flooding, unavailability of land for land spreading, prolonged dry weather / drought).

The operator has stated that the installation is not likely to be or has previously not been affected by climate change.

Containment

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

The Operator provided details of all tanks;

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

We have set improvement conditions in the permit to address the deficiencies in the existing tanks and containment measures on site (IP12). See Improvement condition(s) in Annex 3 of this decision document.

Annex 3: Improvement Conditions

Previous improvement conditions deemed complete, so removed from permit:

IP1	The operator shall provide the Environment Agency with written proposals specifying measures taken to ensure that in the event of containment failure of the effluent holding tank, such as overspilling or split, the adjacent surface water drainage are protected from pollution having regard for the requirements set out in Section 2.2.5 of the Sector Guidance Note IPPC S6.13, October 2003, Version 5.	Complete
IP2	The operator shall review the secondary containment of all storage tanks on site, in particular the gas oil tanks, caustic soda tanks and the oil filled transformers, having regard to the requirements set out in Sector Guidance Note IPPC S6.13, October 2003, Version 5. A written report detailing any improvements required shall be submitted to the Environment Agency. The report shall include a timetable for the implementation of the required work	Complete
IP3	The operator shall undertake an assessment of the surfacing on site, in particular the area of milk silos and external areas of the cold store having regard for the requirements set out in Section 2.2.2 of the Environment agency Guidance IPPC S6.13 October 2003, Version 5. A written report summarising the findings shall be submitted to the Environment Agency and include a timetable for implementing improvements identified.	Complete
IP4	The operator shall implement a planned preventative maintenance schedule and inspection for al plant whose failure could impact on the environment, in particular the spray dryer abatement system, having regard to Section 2.3 of the Sector Guidance Note IPPC S6.3, October 2003, Version 5. A written report summarising the key elements of the plan shall be submitted to the Environment Agency.	Complete
IP5	The operator shall produce and incorporate the following procedures into their Environmental Management System (EMS): Inspection and maintenance of site surfacing and testing of bunds. Inspection, cleaning and maintenance of the oil interceptor. Inspection of the underground fuel pipeline from the stores to the boilers. The operator shall confirm in writing to the Environment Agency when these procedures are in place.	Complete
IP6	The operator shall review their accident management plan with regard to actions to be taken on the event of emergency spills on site, and with regard to the requirements set out in Section 2.8 of the Environment Agency technical guidance note IPPC S3.13, October 2003, Version 5 and shall submit the plan in writing to the Environment Agency.	Complete
IP7	The operator shall produce an Energy Efficiency Plan, having regard to Section 2.7.2 of the Environment Agency Guidance Note IPPC S6.10, August 2003, Version 5.	Complete

IP8	The operator shall undertake a drainage survey to colour code the foul and surface water manholes and grills to clearly identify which circuit each serves.	Complete
IP9	The operator shall submit a report to the Environment Agency, demonstrating whether XA164 used for continuous measurement of total particulates at release point A6 meets with the performance standards given in MCERTS document "MCERTS performance standards for CEMS". The report shall include an assessment of the instruments performance with the criteria given in the standard and where they are not met, provide proposals and a timescale to achieve the standard.	Complete
IP10	The operator shall develop a written site closure plan with regard to the requirements set out in Section 2.11 of the Environment Agency Guidance Note IPPC S6.13, October 2003, Version 5. Upon completion of the plan a summary shall be submitted to the Environment Agency in writing.	Complete

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):

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IP11	The Operator shall submit a written report to the Environment Agency of monitoring carried out to determine the size distribution of particulate matter in the exhaust gas emissions to air from emission point A6, 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.	12 months from permit issue (14/08/2024) which is consistent across the review.
IP12	The Operator shall undertake a comprehensive review and assessment of the primary and secondary containment at the site and review measures against relevant standard including: CIRIA Containment systems for the prevention of pollution (C736) – Secondary, tertiary and other measures for industrial and commercial premises EEMUA 159 - Above ground flat bottomed storage tanks The operator shall submit a written report to the Environment Agency approval which outlines the results of the survey and the review of standard and provide details of: current primary and secondary containment measures any deficiencies identified in comparison to relevant standards improvements proposed time scale for implementation of improvements	12 months from permit issue (14/08/2024) which is consistent across the review.

	<p>The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency, and incorporate an ongoing routine inspection and maintenance programme as part the EMS.</p>	
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