

# **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/QP3930JL  
The Operator is:                         Arla Foods Ltd  
The Installation is:                     Westbury Dairies  
This Variation Notice number is:   EPR/QP3930JL/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 4<sup>th</sup> 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 24/03/2022 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that:

- describes the techniques that will be implemented before 4 December 2023, which will then ensure that operations meet the revised standards, or
- justifies why standards will not be met by 4 December 2023, and confirmation of the date when the operation of those processes will cease within the Installation or an explanation of why the revised BAT standards are not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised BAT standards described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61 Notice required that the Operator make a formal request for derogation from compliance with that BAT-AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 61 Notice response from the Operator was received on 22/07/2022.

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 BATc 6 Energy Efficiency Plan and BATc 9 refrigerants. The operator does not currently comply with the requirements of BATc 6 and BATc 9. In relation to these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions IC 6 and IC 7 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 4 December 2023.

### 2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued further information requests on 01/11/2023 and 10/10/2023. We required additional information on how the operator could meet BATc 6, 9, EPLs for energy and water. In addition to information on how the operator proposed to monitor and meet the new BAT-AELs for surface water discharges. A copy of each 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
<b>GENERAL BAT CONCLUSIONS (BAT 1-15)</b>			
1	<p><b>Environmental Management System - Improve overall environmental performance.</b></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 confirmed the site is covered by the Arla Group Global Supply Chain EMS which is externally accredited to the ISO14001 standard.</p>
2	<p><b>EMS Inventory of inputs &amp; outputs. Increase resource efficiency and reduce emissions.</b></p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p>	CC	<p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>The operator confirmed the site has implemented a monitoring and tracking plan for energy consumption, raw materials, food residues and waste streams. The data is monitored at departmental and site level through KPIs set against budget and improvement targets that are reviewed daily, weekly and monthly at the appropriate function and level at site and across divisions.</p>
3	<p><b>Monitoring key process parameters at key locations for emissions to water.</b></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 site continuously monitors the flow, pH, temperature, suspended solids and COD at the final outfall to sewer from the ETP. In addition Wessex Water sample the effluent to</p>

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			<p>ensure consent with the Trade Effluent Consent (TEC).</p> <p>Evaporative condensate is discharged to Biss Brook at W1. The discharge is monitored continuously for flow, pH, temperature and Chlorine. In addition BOD, TSS, Ammonia and fats and oils are also monitored.</p> <p>The operator has confirmed the additional BAT monitoring requirements for COD, Phosphorus and Total Nitrogen along with increased monitoring frequency will be in place by the 4<sup>th</sup> December 2023.</p>
4	<p><b>Monitoring emissions to water to the required frequencies and standards.</b>            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>	CC	<p>The operator has provided information to support compliance with BATc 4. We have assessed the information provided and we are satisfied that the operator will be compliant with BATc 4 by the 4<sup>th</sup> Dec.</p> <p>The operators Reg 61 response did not consider the evaporative condensate discharge to the Biss Brook. When questioned they confirmed it was still in place and required. The operator confirmed they would carry out the additional monitoring as required by BAT and were confident the discharged could meet the BAT-AEL's.</p> <p>Monitoring to EN standards in line with BATc 4 has therefore been included within the permit along with the retention of the existing monitoring requirements.</p>
5	<p><b>Monitoring channelled emissions to air to the required frequencies and standards.</b>            BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p>	CC	<p>The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 5.</p>

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			<p>The site operates a spray drier. Emission points are abated with both bag filters and cyclones.</p> <p>Particulate release from the drier is currently monitored annually by an external MCERTS accredited specialist contractor to EN 13284-1. In addition, PCME continuous monitoring equipment is also installed which is calibrated and function tested periodically by an external contractor. Hourly average trend data is recorded by site and visualised by plant operators via SCADA feed. In the event of an exceedance alarms sound and set procedures followed. Increasing dust emissions would result in plant shutdown.</p>
6	<p><b>Energy Efficiency</b></p> <p>In order to increase energy efficiency, BAT is to use an energy efficiency plan (BAT 6a) and an appropriate combination of the common techniques listed in technique 6b within the table in the BATc.</p>	FC	<p>The operator has provided information to support compliance with BATc 6. We have assessed the information provided and we are satisfied that the operator will be compliant with BATc 6 by the 4<sup>th</sup> Dec.</p> <p>The site tracks energy use and reports that energy efficiency improvements are embedded within onsite activities. They state KPI and utility budgets are set annually in consultation with the Arla Group and that their governance process provides the framework for the identification and delivery of specific improvement measures that take account of BAT techniques for the dairy sector as a minimum.</p> <p>The site however doesn't have an Energy Efficiency Plan as described in BAT and a plan should be adapted to the specific installation. From the description provided this doesn't</p>



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			appear to be in place. We have therefore included IC 6 to demonstrate compliance with BATc 6
7	<p><b>Water and wastewater minimisation</b></p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below.</p> <p>(a) water recycling and/or reuse  (b) Optimisation of water flow  (c) Optimisation of water nozzles and hoses  (d) Segregation of water streams</p> <p>Techniques related to cleaning operations:</p> <p>(e) Dry cleaning  (f) Pigging system for pipes  (g) High-pressure cleaning  (h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP)  (i) Low-pressure foam and/or gel cleaning  (j) Optimised design and construction of equipment and process areas  (k) Cleaning of equipment as soon as possible</p>	CC	<p>The operator has provided information to support compliance with BATc 7. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>The operator has confirmed the following water saving techniques are used on site:</p> <ul style="list-style-type: none"> <li>• Recover and reuse rinse water within CIP systems, A reverse osmosis system in place that recycles water generated from the process which is then topped up and used for cleaning. Boiler condensate returns to the hotwell, minimising water consumption/discharge.</li> <li>• The manufacturing processes are automated and controlled by a PLC system. The design of the installation incorporates flow meters, VSD and timers for flushes to reduce consumption and minimise discharge.</li> <li>• trigger controlled hose guns and regulated pressure delivery systems</li> <li>• segregation of water streams..</li> <li>• The site operates a Clean As You Go policy and dry cleaning techniques used with infrequent wet cleaning of drier and bagging processing areas.</li> <li>• All CIP systems are automated and optimised to minimise use of water and detergent through the monitoring of conductivity to detect product/water mix.</li> </ul>

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			<ul style="list-style-type: none"> <li>• Chemical and water consumption is monitored and savings driven with reference to budget and expected uses</li> <li>• Fixed foaming systems used to allow more controlled dosing of chemicals and reduce rinse water.</li> </ul>
8	<p><b>Prevent or reduce the use of harmful substances</b></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>	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>The operator has provided an inventory of the cleaning chemicals used on site and confirmed these are selected with a third party specialist supplier across the Arla Group. The Group procured Service Level Agreement requires the provider to identify, agree and only deploy chemicals that have been selected for their efficacy and safety from a technical, health and safety and environmental harm perspective. The SLA requires that they undertake a rolling review and assessment of chemical usage to ensure appropriate stocks of chemicals and usage is in line with budget/production levels.</p> <p>Any changes to the chemical inventory are assessed through the site's change management procedure before use to consider their use and disposal will not impact the site's effluent treatment process and Trade Effluent Consent (TEC).</p> <p>As above, CIP systems are optimised and dry cleaning is used where applicable across the site.</p> <p>Equipment, process design and implementation takes account of hygiene</p>

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			requirements of the process and ensure efficient cleaning. New equipment installations go through HAZOP and HACCP process to identify potential issues and opportunities. Existing optimisation opportunities are identified periodically in partnership with the operators and hygiene chemical supplier.
9	<p><b>Refrigerants</b></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>	<b>FC</b>	<p>The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator will be compliant with BATc 9 by the 4<sup>th</sup> Dec.</p> <p>The operator has provided an inventory of refrigeration systems on site. Ammonia systems provide the majority of cooling however 2 small units associated with the manufacturing process are also in use. These use high GWP refrigerant R404A.</p> <p>BATc 9 requires a formal plan to be in place for the end of life replacement of these systems. We have therefore included IC7 into the permit in order to demonstrate compliance.</p>
10	<p><b>Resource efficiency</b></p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> <li>(a) Anaerobic digestion</li> <li>(b) Use of residues</li> <li>(c) Separation of residues</li> <li>(d) Recovery and reuse of residues from the pasteuriser</li> <li>(e) Phosphorus recovery as struvite</li> <li>(f) Use of waste water for land spreading</li> </ul>	<b>CC</b>	<p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p> <p>The operator has confirmed effluent sludge and other solid residues such as effluent fat balls and powder not fit for human consumption are sent off site for anaerobic digestion.</p> <p>They also confirmed the site operates mainly enclosed systems with little manual</p>

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			<p>intervention which means there is little in the way of residues such as floor/conveyor waste generated.</p> <p>Concentrates are recovered and re-introduced back into the process which avoids disposal via the effluent plant.</p>
11	<p><b>Waste water buffer storage</b> In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	CC	<p>The operator has provided information to support compliance with BATc 11. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 11.</p> <p>The operator has confirmed that in addition to effluent balance tanks the site has a 60m<sup>3</sup> divert dump tank that can be used to intercept high strength/high COD/high salt loaded waste water from different parts of the site.</p> <p>Abnormal wastewater can then either be bled in to the effluent plant under controlled conditions to minimise the potential for shock to the plant and maintain compliance or transfer it offsite via tanker for third party treatment.</p> <p>Additionally, in the event of worst-case catastrophic loss of a volume of material the site can divert waste water to the catastrophe ditch. This has a capacity of 1200m<sup>3</sup> and is designed to contain a large spillage to prevent off site surface water contamination. The contents of the ditch can be pumped back and processed through the site effluent plant or pumped and tankered off site.</p> <p>It can be used to route the following materials;</p> <ul style="list-style-type: none"> <li>All roof water is routinely sent to the ditch as this could contain milk powder particles that have been entrained within the structure</li> </ul>

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			<ul style="list-style-type: none"> <li>• Crude (pre treated effluent) in the event it cannot be handled by the ETP (contingency only in the event of effluent plant break down)</li> <li>• Treated effluent in the event that it cannot be sent forward to Wessex Water (contingency only)</li> <li>• Surface water in the event of any potential contamination can be diverted to the ditch</li> <li>• Condensate via automatic penstock in the event it cannot be sent forward to Biss Brook (automatic inline detection)</li> </ul>
12	<p><b>Emissions to water – treatment</b></p> <p>In order to reduce emissions to water, BAT is to use an appropriate combination of the techniques given below.</p> <p>Preliminary, primary and general treatment</p> <p>(a) Equalisation</p> <p>(b) Neutralisation</p> <p>(c) Physical separate (eg screens, sieves, primary settlement tanks etc)</p> <p>Aerobic and/or anaerobic treatment (secondary treatment)</p> <p>(d) Aerobic and/or anaerobic treatment (eg activated sludge, aerobic lagoon etc)</p> <p>(e) Nitrification and/or denitrification</p> <p>(f) Partial nitrification - anaerobic ammonium oxidation</p> <p>Phosphorus recovery and/or removal</p> <p>(g) Phosphorus recovery as struvite</p> <p>(h) Precipitation</p> <p>(i) Enhanced biological phosphorus removal</p> <p>Final solids removal</p> <p>(j) Coagulation and flocculation</p> <p>(k) Sedimentation</p> <p>(l) Filtration (eg sand filtration, microfiltration, ultrafiltration)</p> <p>(m) Flotation</p>	CC	<p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 12.</p> <p>The operator treats process effluent on site within the permitted Effluent Treatment Plant. Treatment consist of physical separation using strainers before equalization using balancing tanks and pH correction by acid and alkaline dosing.</p> <p>Coagulation and flocculation are used in combination (successive steps) as part of the DAF plant operation.</p> <p>Sludge is removed from the DAF and directed to dedicated sludge storage facilities. Excess water carried over with the sludge settles out within the tanks and is returned to the head of the treatment process.</p> <p>Evaporative condensate is treated through a reverse osmosis plant prior to reuse in</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										
			cleaning operations on site. The excess is discharged to Biss Brook via a de-chlorination system.										
12	<p><b>Emissions to water – treatment</b>  <b>BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body</b></p> <table border="1" data-bbox="282 507 1211 708"> <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><b>Note: 125mg/l COD for dairy sites</b>  <b>Note: 4mg/l TP for dairy sites</b></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 (°)	CC	<p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator will be future compliant with BATc 12.</p> <p>The operator had not considered the surface water discharge to the Biss Brook in their Reg 61 response. They however have confirmed they will undertake monitoring in line with the BAT requirements and consider they will be able to meet the BAT-AELs. The following additional requirements have been added the permit:</p> <p>Daily monitoring COD – 100mg/l  Daily monitoring of TSS – 25mg/l (limit remains the same)  Daily monitoring of TN – 20 mg/l (weekly ammonia N limit is also retained)  Daily monitoring of TP – 2 mg/l</p>
Parameter	BAT-AEL (°) (°) (daily average)												
Chemical oxygen demand (COD) (°) (°)	25-100 mg/l (°)												
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13	<p><b>Noise management plan</b></p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> <li>- a protocol containing actions and timelines;</li> <li>- a protocol for conducting noise emissions monitoring;</li> <li>- a protocol for response to identified noise events, eg complaints;</li> <li>- 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.</li> </ul>	CC	<p>The operator has provided information to support compliance with BATc 13. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 13.</p> <p>There are no indications of noise complaints resulting from operations on the site and no requirement for formal noise management plan however the operator confirms that within the site governance systems elements of a noise management plan are in place.</p>										

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14	<p><b>Noise management</b></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> <p>(a) Appropriate location of equipment and buildings  (b) Operational measures  (c) Low-noise equipment  (d) Noise control equipment  (e) Noise abatement</p>	CC	<p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>The operator has confirmed the following noise mitigation measures are employed on site:</p> <ul style="list-style-type: none"> <li>• plant or equipment with the greatest potential to create excessive noise is internal or enclosed (e.g. compressors, boilers and all main processing equipment with the exception of the effluent plant).</li> <li>• Plant and equipment is subject to planned preventative maintenance</li> <li>• The site operates a closed-door policy with respect to all areas of production (loading operations excepted).</li> <li>• All areas of the site are subject to inspection and process confirmation audits that would identify abnormal operations/activities that may give rise to noise nuisance potential</li> <li>• Consideration of noise is part of equipment specification, which would identify opportunities to include the requirement for low noise equipment such as fans, pumps and compressors.</li> </ul>
15	<p><b>Odour Management</b></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>	CC	<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>

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	<ul style="list-style-type: none"> <li>- a protocol containing actions and timelines;</li> <li>- a protocol for conducting odour monitoring.</li> <li>- a protocol for response to identified odour incidents eg complaints;</li> <li>- 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.</li> </ul>		We are therefore satisfied that BATc 15 is not applicable for this site.																
<b>DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)</b>																			
21	<p><b>Energy efficiency – Dairy Sector</b></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="293 639 1122 1171"> <thead> <tr> <th data-bbox="293 639 528 679">Technique</th> <th data-bbox="528 639 1122 679">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="293 679 528 735">(a) Partial milk homogenisation</td> <td data-bbox="528 679 1122 735">The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.</td> </tr> <tr> <td data-bbox="293 735 528 791">(b) Energy-efficient homogeniser</td> <td data-bbox="528 735 1122 791">The homogeniser's working pressure is reduced through optimised design and thus the associated electrical energy needed to drive the system is also reduced.</td> </tr> <tr> <td data-bbox="293 791 528 847">(c) Use of continuous pasteurisers</td> <td data-bbox="528 791 1122 847">Flow-through heat exchangers are used (e.g. tubular, plate and frame). The pasteurisation time is much shorter than that of batch systems.</td> </tr> <tr> <td data-bbox="293 847 528 935">(d) Regenerative heat exchange in pasteurisation</td> <td data-bbox="528 847 1122 935">The incoming milk is preheated by the hot milk leaving the pasteurisation section.</td> </tr> <tr> <td data-bbox="293 935 528 1023">(e) Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation</td> <td data-bbox="528 935 1122 1023">UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.</td> </tr> <tr> <td data-bbox="293 1023 528 1094">(f) Multi-stage drying in powder production</td> <td data-bbox="528 1023 1122 1094">A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.</td> </tr> <tr> <td data-bbox="293 1094 528 1171">(g) Precooling of ice-water</td> <td data-bbox="528 1094 1122 1171">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.	<b>CC</b>	<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 has confirmed the following techniques are used on site:</p> <ul style="list-style-type: none"> <li>(a) Not required as part of the process.</li> <li>(b) Not required as part of the process.</li> <li>(c) The evaporator design incorporates continuous tubular heat exchanger technology and the cream line plate packs are operated as a semi-continuous batch process both of which allow for maximum efficiency of their operation.</li> <li>(d) Regenerative heat exchanges are employed with incoming milk preheated by the hot milk leaving the pasteurisation.</li> <li>(e) Not Applicable – not required as part of the process</li> <li>(f) The driers have integral static fluidised bed to optimise energy efficiency of the process.</li> <li>(g) Chilled water passes through a plate pack heat exchanger to obtain thermal benefit from the pasteuriser for the cream silos.</li> </ul>
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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																				
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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									
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Parameter	Description	BAT-AEL (average over the sampling period)										
Dust	Mg/Nm <sup>3</sup>	<2-10 <sup>(1)</sup>										
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<b>Dairy Sector Environmental Performance Levels</b>												

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	<p><b>Environmental Performance Level – Energy consumption for the dairy sector</b></p> <table border="1" data-bbox="275 336 1232 663"> <thead> <tr> <th data-bbox="275 336 595 437">Main product (at least 80 % of the production)</th> <th data-bbox="595 336 913 437">Unit</th> <th data-bbox="913 336 1232 437">Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="275 437 595 485">Market milk</td> <td data-bbox="595 437 913 619" rowspan="4">MWh/tonne of raw materials</td> <td data-bbox="913 437 1232 485">0.1-0.6</td> </tr> <tr> <td data-bbox="275 485 595 533">Cheese</td> <td data-bbox="913 485 1232 533">0.10-0.22 <sup>(1)</sup></td> </tr> <tr> <td data-bbox="275 533 595 580">Powder</td> <td data-bbox="913 533 1232 580">0.2-0.5</td> </tr> <tr> <td data-bbox="275 580 595 628">Fermented milk</td> <td data-bbox="913 580 1232 628">0.2-1.6</td> </tr> <tr> <td colspan="3" data-bbox="275 628 1232 663">(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 <sup>(1)</sup>	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.			N/A	<p>The operator has stated that the site produces approx. 48% butter with no category exceeding 80% of production. We are therefore satisfied that the EPL for energy consumption is not applicable to the installation.</p> <p>The operator provided the following production figures for the year 2022:</p> <ul style="list-style-type: none"> <li>- Skimmed milk powder production (tonnes dry matter) 32,582</li> <li>- Butter milk powder production (tonnes dry matter) 5,265</li> <li>- Butter milk production (tonnes - wet mass) 48,501</li> <li>- Spread production (tonnes - wet mass) 14,588</li> </ul>
	Main product (at least 80 % of the production)	Unit	Specific energy consumption (yearly average)															
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EPL	<p><b>Environmental Performance Level – Specific waste water discharge for the dairy sector</b></p> <table border="1" data-bbox="275 890 1232 1099"> <thead> <tr> <th data-bbox="275 890 595 963">Main product (at least 80 % of the production)</th> <th data-bbox="595 890 913 963">Unit</th> <th data-bbox="913 890 1232 963">Specific waste water discharge (yearly average)</th> </tr> </thead> <tbody> <tr> <td data-bbox="275 963 595 1011">Market milk</td> <td data-bbox="595 963 913 1099" rowspan="3">m<sup>3</sup>/tonne of raw materials</td> <td data-bbox="913 963 1232 1011">0.3 - 3.0</td> </tr> <tr> <td data-bbox="275 1011 595 1059">Cheese</td> <td data-bbox="913 1011 1232 1059">0.75 - 2.5</td> </tr> <tr> <td data-bbox="275 1059 595 1099">Powder</td> <td data-bbox="913 1059 1232 1099">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 <sup>3</sup> /tonne of raw materials	0.3 - 3.0	Cheese	0.75 - 2.5	Powder	1.2 – 2.7	N/A	<p>As above, the operator states no one category exceeds 80% production and therefore the EPL for waste water discharge does not apply.</p>					
	Main product (at least 80 % of the production)	Unit	Specific waste water discharge (yearly average)															
	Market milk	m <sup>3</sup> /tonne of raw materials	0.3 - 3.0															
	Cheese		0.75 - 2.5															
Powder	1.2 – 2.7																	

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

### **Updating permit during permit review consolidation**

- Activity name
- Introductory note
- 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 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**

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

	Steam Boiler 1	Steam Boiler 2	Steam Boiler 3	Air heater 1	Air heater 2
1. Rated thermal input (MW) of the medium combustion plant.	11.8MWth	11.8MWth	12.3MWth	6.082MWth	6.08MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler	Boiler	Boiler	Air heater	Air heater
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	April 02	April 02	June 2018	Feb 2022	Feb 2022
	Share a windshield and cannot be monitored separately. Included individual ELVs in permit. Operator needs to sort out compliance by appropriate date.				

We have reviewed the information provided and we consider that the declared combustion plant qualify as “existing” medium combustion plant with the exception of Air Heaters 1 and 2 which were permitted as new under variation V002 issued in 2022. The existing monitoring requirements and ELVs have been retained.

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.

### **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 points A2a and A2b (extractive monitoring) against BAT 23 for dust emissions from the bag filter/ cyclone.

### **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 [John Poole & Bloomer Report reference AC088-79/NJW 20<sup>th</sup> April 2021] during the original application. The site condition report included a report on the baseline conditions as required by Article 22.

We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time.

### **Hazardous Substances**

Hazardous substances are those defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures

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

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

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

### **Climate Change Adaptation**

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

The operator has identified the installation as likely to be or has been affected by unavailability of land for land spreading of waste, 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 (IC8) 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 each of the above ground tanks which contain potentially polluting liquids at the site, including tanks associated with the effluent treatment process where applicable.

The Operator provided details of all tanks;

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

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

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

We reviewed the information provided by the operator 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 (IC9). See Improvement condition(s) 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.

<b>Superseded Improvement Conditions – Removed from permit as marked as “complete”</b>	
<b>Reference</b>	<b>Improvement Condition</b>
IC1	A report shall be sent to the Agency which assesses the effectiveness of the dispersions into the atmosphere of particulates from the spray dryers having regard to the positioning and design of the stack vents. The report shall include proposals for measures to prevent the build-up of particulates from the spray dryer exhausts on the roof and other surfaces of the installation.
IC2	A report shall be sent to the Agency which assesses and presents proposals of measures to be introduced to prevent contamination of the surface water discharge at emission point W2.
IC3	A written plan shall be submitted to the Agency for approval detailing the results of a review of potential sources of contamination of the surface water system. The plan shall consider but shall not be limited to the categorization of the sources of contamination and methods to reduce any pollution. Where appropriate the plan shall contain dates for the implementation of measures to reduce any contamination of the surface water system. The notification requirements of this condition shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval in writing given by the Agency.
IC4	The Operator shall undertake a noise assessment following completion of the development, and shall submit a written report to the Environment Agency which shall evaluate the impact of noise from the date of approval in writing given by the Agency.
IC5	The Operator shall supply a written post commissioning report to the Environment Agency, which shall identify and justify any deviations in operating techniques from those proposed in the permit variation application reference EPR/BW2706IU/V005.

The following improvement conditions have added to the permit as a result of the variation.

<b>Improvement programme requirements</b>		
<b>Reference</b>	<b>Reason for inclusion</b>	<b>Justification of deadline</b>
IC6	The Operator shall confirm in writing to the Environment Agency that the Narrative BAT requirements for the BAT Conclusions for Food, Drink	1 month from permit issue

	and Milk Industries with respect to BAT 6 and 9 were in place on or before 4 December 2023. Refer to BAT Conclusions for a full description of the BAT requirement.	
IC7	<p>The operator shall use refrigerants without ozone depletion potential and with a low global warming potential (GWP) in accordance with BAT 9 from the Food, Drink and Milk Industries BATCs.</p> <p>To demonstrate compliance against BAT 9, the operator shall develop a replacement plan for the refrigerant system(s) at the installation. This shall be incorporated within the existing environmental management system by the specified date.</p> <p>The plan should include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>• Where practicable, retro filling systems containing high GWP refrigerants e.g. R-404A with lower GWP alternatives as soon as possible.</li> <li>• An action log with timescales, for replacement of end-of-life equipment using refrigerants with the lowest practicable GWP.</li> </ul>	1 month from permit issue
IC8	<p>The operator shall produce a climate change adaptation plan, which will form part of the EMS.</p> <p>The plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Details of how the installation has or could be affected by severe weather;</li> <li>• The scale of the impact of severe weather on the operations within the installation;</li> <li>• An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation.</li> </ul> <p>The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.</p>	12 Months from permit issue or other date as agreed in writing with the Environment Agency
IC9	<p>The Operator shall undertake a survey of the primary, secondary and tertiary containment at the site and review measures against relevant standard including:</p> <ul style="list-style-type: none"> <li>• CIRIA Containment systems for the prevention of pollution (C736) – Secondary, tertiary and other measures for industrial and commercial premises,</li> <li>• EEMUA 159 - Above ground flat bottomed storage tanks</li> </ul> <p>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</p> <ul style="list-style-type: none"> <li>• current containment measures</li> <li>• any deficiencies identified in comparison to relevant standards,</li> <li>• improvements proposed</li> <li>• time scale for implementation of improvements.</li> </ul>	12 Months from permit issue or other date as agreed in writing with the Environment Agency

	The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.	
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