

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/LP3734FJ
The Operator is: Mondelez UK Confectionery Production Limited
The Installation is: Bournville Chocolate Works
This Variation Notice number is: EPR/LP3734FJ/V007

What this document is about

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on best available techniques (BAT) Conclusions.

We have reviewed the permit for this installation against the BAT Conclusions for the Food, Drink and Milk Industries published on 4th December 2019 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to Installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document, we therefore address only our determination of substantive issues relating to the new BAT Conclusions and any changes to the operation of the installation.

Such as, in this case, there was a variation application (V005) and partial surrender application (S006) made by the operator at around the same time that the Regulation 61 notice was submitted. On that basis, this variation (V007) incorporates both the earlier variation and surrender applications together with the permit review.

Summary of changes introduced by V005 and S006

Variation V005 adds a new listed activity - S5.4 A(1) (a)(ii) Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day involving physico-chemical treatment. This is for the installation of a new Effluent Treatment Plant (ETP) to provide continuous monitoring of flow and pH with chemicals dosed to adjust the pH prior to discharge to sewer under Trade Effluent Consent. The facility

comprises a 250m³ capacity balancing tank and reaction tank for pH correction. Acid and caustic chemicals are stored within bunded chemical storage tanks (10m³ and 25m³ respectively). Each has continuous level monitoring provided by ultrasonic level sensor. The ETP is fully bunded with at least 110% capacity of the largest single tank and 25% of combined contents.

Previously process effluent was discharged via three separate points. These streams have now been rerouted through the common tanks described above with effluent directed to a new single discharge point S1. The original three discharge points S590, S591 and S630 have been retained as a back-up disposal route in case of breakdown of the ETP and renumbered S2, S3 and S4. These would only be used in case of breakdown at the ETP and retain the Trade Effluent Discharge Conditions imposed by Severn Trent Water.

These changes do not impact the total volume or organic loading of the discharge to sewer. The effluent balance tanks and pH adjustment ensure a more consistent flow in terms of loading and pH.

This variation also amends the site boundary to remove an area of land and office block. Parts of which have previously been used as a finished goods store. The operator confirmed the building is no longer in use for this purpose and is now associated with the Cadbury World visitor attraction. This has been agreed as a partial low risk surrender.

There have also been manufacturing process changes including changes to refrigeration plant with the addition of a new ammonia based chiller and separate R1234ze refrigerant gas chiller on the roof of U Block. A new R1234ze refrigerant gas chiller on the roof of M2 building and a further R1234ze refrigerant gas chiller on the choc block.

As a result of improvements in site energy efficiency and other production changes since the steam raising boilers on site were installed steam demand and steam generation capacity were mismatched. This variation therefore also derates the existing 3 boilers thermal input to approximately 6.25 MWth each (from 12.2 MWth each). As a result of this change the Part B activity relating to the combustion plant (Section 1.1 B(a)) is removed from the permit as the aggregated thermal input now falls below 20 MWth.

The boilers retain the same burners and equipment and are considered existing plant. There is no impact on the Medium Combustion Plant Directive (MCPD) status of the plant which required permitting as such by the 01/01/2025. However the MCPD requirements are included from permit issue as the extant permit already required the boilers to be monitored annually with a NO_x Emission Limit Value (ELV) of 200mg/m³ in line with the requirements of MCPD. In addition the permit included an ELV of 150mg/m³ of CO which is also retained. The monitoring frequency has been reduced to every three years in line with the MCPD requirements for plant less than 20MWth.

There are also a number of infrastructure and process changes including relocation of the flavour store and expansion of the research and development lab which adds a number of additional air emission points which serve the pilot plant cocoa roasters. There is also a revised and updated technical description and inventory of point source emissions to air, water and sewer.

The process discharge point to Bourn (Griffins) Brook (W21) is removed from the permit as this is no longer used. Site investigations however showed 19 discharge points of uncontaminated surface water from roofs and roadways to Bourn (Griffins) Brook. These are not new but have not previously been listed in the permit. These have been added for completeness.

Emissions points to air are being added as part of the variation. These are associated with the research and development facility in the basement of M1 building. 4 new air emissions points are added associated with 3 pilot plant scale roasters. These are not associated with permitted production and have not been considered further.

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 04/10/2023 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 03/02/2023.

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 further information requests on 04/05/2023 to clarify BATc 7 wastewater minimisation, BATc 9 refrigeration, BATc 11 waste water buffer storage. A copy of each further information request was placed on our public register.

2.4 Our assessment of variation application V005

As part of the permit review process, we have decided to grant the concurrent permit variation application.

The scope of the changes are detailed above.

2.4.1 Decision Considerations for V005 and S006

Key issues of the decision

Effluent treatment

Historically three separate effluent streams were discharged to foul sewer. This variation permits the installation of an on-site pre-treatment Effluent Treatment Plant (ETP) which partially treats the effluent streams prior to discharge to sewer. Effluent flows by gravity to below ground concrete transfer sumps where it is automatically pumped to a glass lined 250m³ capacity steel balance tank.

Effluent within the tank is continuously monitored by a low level mounted hydrostatic pressure sensor. When effluent reaches a certain depth the effluent is aerated and transferred to a 6m³ reaction tank where chemicals are added to balance the pH.

Acid and caustic chemicals are stored within bunded chemical storage tanks (10m³ and 25m³ respectively) each has continuous level monitoring provided by an ultrasonic sensor. Independent level gauges are provided outside the bund and high level alarms are provided by the control system.

pH controlled effluent flows to sewer via inline magnetic flowmeter and automatic sampling unit.

The original discharge points are retained in order to retain a back up disposal route in the event of maintenance or disposal issues.

These changes do not impact the total volume or organic loading of the discharge to sewer. The effluent balance tanks and pH adjustment ensure a more consistent flow in terms of loading and pH. However we queried the retention of the three discharge points and whether there was adequate effluent buffer storage capacity on site as required by BATc 11.

The operator provided supporting documentation which we have assessed and consider adequately addresses the retention of the 3 original effluent discharge points for emergency operation. This included a characterisation of the effluent and Effluent Management Strategy. In addition a risk assessment was provided considering the operational response to spills and site infrastructure.

Boiler de rating

In order to consider the boiler de rating the boilers must be fitted with physical or technical restriction limiting capacity which cannot be reversed later.

The operator confirmed the derating will be achieved by mechanical changes to the burners with the remaining achieved by complex software changes which are protected to restrict access and cannot be easily removed without significant work and cost. The changes include:

- mechanical input limitations in both the gas and oil fuel supply trains on each boiler (reducing the gas train size and orifices in the oil train) so that fuel supply rate is substantially physically reduced.
- The rating plates of the boilers will be changed to state the new capacity. Therefore if a future change of management wishes to increase the thermal input they would need to call the Original Equipment Manufacturer (OEM) to increase the boiler above the input capacity on the boiler plate. This would give two layers of protection against inadvertent increases in the capacity of the boilers. Mondelez would then be required to consideration any legislative implications of such a change.
- The thermal input would be reduced by rewriting and resetting the firmware to change the combustion characteristics to lock out the top points of the commissioning curve by preventing the burner firing above the stated new maximum rate.
- The works require substantial upgrades, including rewriting of programme logic, associated performance mapping and testing. This is undertaken by the OEM. These changes involve firmware upgrades physically implemented at site in the boiler control system (not remotely).
- The firmware changes will be digitally locked (protected) by a unique 6 six figure commissioning code which will be retained by the OEM and not issued to Mondelez. This being a proprietary boiler control system, customers are not given administrator system access for reasons of safety, operational control and intellectual property. Reversal (uprating) of the burner cannot happen in error and has to be a deliberate, pre-planned, approved act.
- The OEM will issue a written statement to Mondelez and the Environment Agency confirming that the burner has been derated to the new required output and also make a declaration that they will not uprate the boilers unless instructed in writing with evidence that the regulatory authorities are aware and have approved the change.

Noise Impact Assessment and Noise Management Plan

A Noise Impact Assessment (NIA) and Noise Management Plan (NMP) were submitted as part of the variation, both documents were dated July 2022. The NIA considered the impact from new noise sources such as the new chiller plant which were covered by the scope of the permit variation as well as noise from pre-existing sources. The NIA did not consider the new ETP.

The NIA concluded noise impact from the site to be low during the day however adverse night-time impacts were noted. We were unable to fully assess or verify the NIA due to omissions within the data. We also noted the documents did not consider the impacts from all new noise sources or consider noise abatement measures recently installed on site. These include a large noise abatement shield having been installed in front of the Air Handling Units (AHU), barriers in front of the ammonia chillers and the identification of the Stadco compressors as a significant source of noise at the north of the site – and consequent abatement shield installation.

In addition the NIA identified additional mitigation measures of which only a few have been addressed.

We requested additional information in order for us to verify the assessment findings however the operator confirmed they could not address all of our questions due to personnel changes at the noise consultant and “complexities of a retrospective application”. Considering this a revised Noise Impact Assessment and Management Plan are required. These new assessment must fully consider both the new equipment for which the operator is applying to retrospectively permit under V005 and the existing noise sources.

We have therefore included Improvement Conditions IC 19 and IC 20 requiring the operator to undertake a revised Noise Impact Assessment and Management Plan and submit the results to the Environment Agency for approval.

Changes to permitted boundary

The operator submitted a Site Condition Report based on a desk study and on site observations in support of the partial surrender application. We agree a “low risk” surrender is appropriate based on evidence that activities with the potential to cause pollution were not undertaken in the area over the lifetime of the permit. The SCR concluded:

- The site has been a chocolate factory since the 1880s with the area proposed for surrender having been developed with a single building since the early 1900s
- The entire area of land to be surrendered had been covered in impermeable surfacing throughout the lifetime of the permit.
- No polluting substances were stored or used in the area.
- No records of accidents or incidents which may have resulted in contamination to land.
- The underlying geology is designated as a secondary aquifer with limited resource value. The site does not lie within a groundwater source protection zone.

We are satisfied that the necessary measures have been taken to avoid any pollution risk and to return the site to a satisfactory state. We consider in reaching this decision that we have taken into account all relevant considerations and legal requirements.

The operator has provided a plan showing the extent of the site of the facility that is to be surrendered.

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidelines on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority Environmental Protection
- Local Sewerage Undertaker (Severn Trent Water)
- UK Health Security Agency.

No responses were received.

The regulated facility

The permitted regulated facilities have changed as a result of the partial surrender.

The site

The extent of the facility has changed as a result of the partial surrender.

The operator has provided a plan which we consider to be satisfactory.

These show the extent of the site of the facility

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports [and baseline reporting under the Industrial Emissions Directive].

Extent of the surrender application

The operator has provided a plan showing the extent of the site of the facility that is to be surrendered.

We consider this plan to be satisfactory.

Pollution risk

We are satisfied that the necessary measures have been taken to avoid a pollution risk resulting from the operation of the regulated facility.

Satisfactory state

We are satisfied that the necessary measures have been taken to return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

A number of Local Wildlife Sites lie within 2km of the site, the nearest being the Worcester and Birmingham canal to the east. There however are no European sites or SSSIs within the statutory screening distance. The nearest SSSI is Edgbaston Pool 2.6km to the North.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Noise and vibration management

We consider that the activities carried out at the site have the potential to cause noise that might cause pollution outside the site and consider it appropriate to include specific measures.

We have included Improvement Conditions within the permit requiring the operator to submit a revised Noise Impact Assessment and Management Plan.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

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 an established EMS aligned to the principles of ISO14001 (but not signed up to). The document comprises corporate level standards common across Mondelez sites and site specific procedures forming part of the integrated Health, Safety and Environmental Management System (HSEMS)</p>
2	<p>EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.</p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p>	CC	<p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>The operator tracks water, energy, and raw material consumption, waste water generation and air emissions. The HSEMS document identifies the requirements.</p>
3	<p>Monitoring key process parameters at key locations for emissions to water.</p> <p>For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (e.g. continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</p>	CC	<p>The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 3.</p> <p>The operator undertakes continuous monitoring of pH and flow at the inlet and outlet of the effluent pre-treatment plant prior to discharge to sewer.</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
4	<p>Monitoring emissions to water to the required frequencies and standards. BAT is to monitor emissions to water with at least the frequency given [refer to BAT 4 table in BATc] and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p>	N/A	<p>BATc 4 applies in the case of direct discharge of effluent to a water body. All process effluent from Bournville Chocolate Works is discharged to sewer.</p> <p>We are therefore satisfied that BATc 4 is not applicable for this site</p>
5	<p>Monitoring channelled emissions to air to the required frequencies and standards. BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p>	N/A	<p>BATc 5 sets out air emissions monitoring requirements applicable to specific FDM sub-sectors. None of these monitoring requirements are applicable to Bournville Chocolate Works as the activities undertaken at Bournville Chocolate Works are not specified in the sector and specific processes set out in BATc 5.</p> <p>We are therefore satisfied that BATc 5 is not applicable to this site.</p>
6	<p>Energy Efficiency In order to increase energy efficiency, BAT is to use an energy efficiency plan (BAT 6a) and an appropriate combination of the common techniques listed in technique 6b within the table in the BATc.</p>	CC	<p>The operator has provided information to support compliance with BATc 6. We have assessed this information and are satisfied that the operator has demonstrated compliance with BATc 6.</p> <p>The site has ISO 50001 accreditation and the certificate has been provided.</p> <p>The operator has confirmed they are implementing the following energy efficiency techniques:</p> <ul style="list-style-type: none"> • Burner regulation and control • Energy efficient motors • Programme of work to upgrade to LED lighting. As new fittings are installed, low energy fittings are selected

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"> • Recovered steam condensate is returned to the boiler • Optimising steam distribution systems • Process control systems • Reduce compressed air system leaks • Insulation • Variable speed drives
7	<p>Water and wastewater minimisation</p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below.</p> <p>(a) water recycling and/or reuse</p> <p>(b) Optimisation of water flow</p> <p>(c) Optimisation of water nozzles and hoses</p> <p>(d) Segregation of water streams</p> <p>Techniques related to cleaning operations:</p> <p>(e) Dry cleaning</p> <p>(f) Pigging system for pipes</p> <p>(g) High-pressure cleaning</p> <p>(h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP)</p> <p>(i) Low-pressure foam and/or gel cleaning</p> <p>(j) Optimised design and construction of equipment and process areas</p> <p>(k) Cleaning of equipment as soon as possible</p>	CC	<p>The operator has provided information to support compliance with BATc 7. We have assessed this information and are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>The operator has confirmed they are implementing the following water and waste water minimisation techniques;</p> <ul style="list-style-type: none"> • Water reuse – CIP systems incorporate water recycling • Optimisation of water nozzles and hoses • Segregation of waste streams • Dry cleaning is primary technique used • High pressure cleaning • Optimisation of chemical dosing • Low pressure cleaning • Cleaning of equipment as soon as possible
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>	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 provided a list of cleaning chemicals used on site as part of their Hazardous Substance Stage 1-3 assessment.</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>The chemicals used on site are appropriate for the cleaning undertaken and the operator confirmed industry standard low mercury caustic is used on site. Triclosan is not contained within any product used.</p> <p>The CIP processes are optimised and incorporate chemical recovery/reuse to ensure efficient use of cleaning chemicals.</p> <p>The operator confirmed when selecting new cleaning chemicals for use potential environmental impacts are considered by conducting a COSHH risk assessment.</p>
9	<p>Refrigerants</p> <p>In order to prevent emissions of ozone-depleting substances and of substances with a high global warming potential from cooling and freezing, BAT is to use refrigerants without ozone depletion potential and with a low global warming potential.</p>	CC	<p>The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 9.</p> <p>The operator stated they are eliminating the use of CFC refrigerants and R22 and provided an inventory of refrigerants currently in use on site. They confirmed all new refrigeration installations will be low GDP. Existing systems will run to the end of useful life as no steady of excessive leaks are observed.</p> <p>New refrigeration plant installed as part of the permit variation are ammonia or ultra-low GWP R1234ze.</p>
10	<p>Resource efficiency</p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> (a) Anaerobic digestion (b) Use of residues (c) Separation of residues 	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		<p>The operator confirms there are procedures on site to prevent spillage and wastage of materials which include:</p> <ul style="list-style-type: none"> • Automatic level detection and PLC control, interlocks, alarms and over pressurisation. • Transfer of raw and intermediate ingredients within enclosed systems • Materials recovered for internal rework wherever possible. This is held within a vessel with temperature controlled jacket to minimise wastage. <p>Where waste is generated, waste product is reused as animal feed.</p> <p>The operator commented that waste treatment on site such as anaerobic digestion is not possible due to the location and limited space available.</p>
11	<p>Waste water buffer storage In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	CC	<p>The operator has provided information to support compliance with BATc 11. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 11.</p> <p>The operator has confirmed the Effluent Treatment system incorporates the following features:</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"> • 250m³ capacity balance tank with level prove with a normal operating capacity of 50% • 3 new pumping stations upstream of the ETP with capacities of 7.5m³, 7.5m³ and 10.4m³ respectively. <p>We are satisfied that should the effluent treatment plant be offline and the site revert to discharging unbuffered effluent there is no risk to the downstream Waste Water Treatment Works (Minworth, operated by Severn Trent water) and no risk to the environment.</p> <p>Trade Effluent Consent is in place with monitoring requirements imposed by Severn Trent Water. Minworth is the second largest Sewage Treatment Works in Europe and has accepted site effluent under these conditions for many years.</p>
12	<p>Emissions to water – treatment</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>	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 prior to discharge to sewer to Minworth Waste Water Treatment Works operated by Severn Trent.</p> <p>The on-site effluent treatment plant incorporates pH adjustment prior to discharge.</p> <p>The operator commented there is a lack of space on site for full effluent treatment with a</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										
	(i) Enhanced biological phosphorus removal Final solids removal (j) Coagulation and flocculation (k) Sedimentation (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation		significant proportion of the site classed as either medium or high risk of flooding.										
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="280 651 1211 850"> <thead> <tr> <th>Parameter</th> <th>BAT-AEL (°) (°) (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) (°) (°)</td> <td>25-100 mg/l (°)</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>4-50 mg/l (°)</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td>2-20 mg/l (°) (°)</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td>0,2-2 mg/l (°)</td> </tr> </tbody> </table> <p>Note: 125mg/l COD for dairy sites Note: 4mg/l TP for dairy sites</p>	Parameter	BAT-AEL (°) (°) (daily average)	Chemical oxygen demand (COD) (°) (°)	25-100 mg/l (°)	Total suspended solids (TSS)	4-50 mg/l (°)	Total nitrogen (TN)	2-20 mg/l (°) (°)	Total phosphorus (TP)	0,2-2 mg/l (°)	N/A	<p>The site discharges process effluent to the foul sewer, there are no direct discharges to the water course, as such BAT-AELs do not apply.</p> <p>We are therefore satisfied that BAT AELs associated with BATc 12 is not applicable for this site.</p>
Parameter	BAT-AEL (°) (°) (daily average)												
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> <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. 	FC	<p>The operator has provided information to support compliance with BATc 13. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 13</p> <p>The operator has a Noise Management Plan in place. The Plan and supporting Noise Impact Assessment were submitted as part of the substantial variation application. The Impact Assessment identified impacts at night above acceptable levels and since the documents publication further noise mitigation measures have been installed at the site. It is therefore considered a revised noise Impact</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>Assessment and Management Plan are required. The operator are working with the EAs local regulatory team directly to address the site specific issues and undertake a new Noise Impact Assessment and produce a revised Noise Management Plan.</p> <p>We have included IC 19 and IC 20 requiring the operator to submit a revised Noise Impact Assessment and Management Plan.</p>
14	<p>Noise management</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</p> <p>(a) Appropriate location of equipment and buildings</p> <p>(b) Operational measures</p> <p>(c) Low-noise equipment</p> <p>(d) Noise control equipment</p> <p>(e) Noise abatement</p>	FC	<p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>Noise mitigation measures are in place at the site. These include:</p> <ul style="list-style-type: none"> • Minimising noise at source and preventative generation by good design and maintenance. • Locate equipment away from receptors. • Use barriers and noise mitigation techniques • Appropriately time maintenance works. <p>The site however has undergone rapid changes including the installation of new chillers which have caused increased noise complaints. Mitigation measures have also been reviewed however their efficacy requires further assessment.</p> <p>As detailed above the operator is required to further review the noise profile from the site including monitoring, Impact Assessment and revision of the Noise Management Plan. This</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
			requires ongoing work which is being coordinated and reviewed by our local team and is conditioned through Improvement Conditions 19 and 20.
15	<p>Odour Management</p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting odour monitoring. - a protocol for response to identified odour incidents eg complaints; - an odour prevention and reduction programme designed to identify the source(s); to measure/estimate odour exposure: to characterise the contributions of the sources; and to implement prevention and/or reduction measures. 	N/A	<p>An odour management plan is only required where odour nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated odour nuisance from the site therefore an OMP is not a requirement for this site.</p> <p>We are therefore satisfied that BATc 15 is not applicable for this site.</p>

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

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

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

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

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.

Existing Medium Combustion Plant (1MW-50MW)

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

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

The Operator provided the information in the table below:

Boilers

	Boiler 1	Boiler 2	Boiler 3
1. Rated thermal input (MW) of the medium combustion plant.	6.3	6.3	6.3
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler	Boiler	Boiler
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural gas 99.5% Ultra low sulphur gas oil 0.5%	Natural gas 99.5% Ultra low sulphur gas oil 0.5%	Natural gas 99.5% Ultra low sulphur gas oil 0.5%
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 2004	April 2004	April 2004

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. However as detailed within the introductory section of the Decision Document the extant permit required boiler emissions to be annually monitored and included ELVs. Due to the boiler derating the monitoring frequency requirements have changed and the MCPD requirements included from permit issue.

We have included the appropriate emission limit values for existing medium combustion plant as part of this permit review. The ELVs do not change as a result of the MCPD requirements however we have retained the existing CO ELV of 150mg/m³ to ensure regulatory requirements are not weakened. 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.

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.

The process discharge point to Bourn (Griffins) Brook (W21) is removed from the permit as this is no longer used. The operator however identified 19 discharge points of uncontaminated surface water from roofs and roadways to Bourn (Griffins) Brook. These are now new but have not previously been listed in the permit. These have been added for completeness.

As detailed within the introductory section of the Decision Document an additional foul sewer discharge point (S1) has been added to the permit and will be the main discharge to sewer. The three existing discharge points are retained and renamed - S2, S3 and S4.

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.

Prior to the Reg 61 permit review process the operator applied to amend the permit site boundary by applying to partially surrender an area to the north of the site. This included a 7 storey building known as Cocoa Block East. The operator provided a Surrender Site Condition Report (SCR) in support of the partial surrender which comprised a desk based review of historical information and observations made from site visit. Records of the site were also reviewed in order to describe the condition and identify and substance, in, on, or under land which may constitute a pollution risk as a result of the permitted activities.

The Site Protection and Monitoring Programme (SPMP) submitted in June 2005 included a plan showing the location of potentially contaminative substances stored at the installation. The operator reproduced this plan within the SCR and evidenced there were no potentially contaminative substances located within Cocoa Block East at permit issue. They further confirmed no such substances have been used at this location in the intervening period.

We are satisfied that the necessary measures have been taken to avoid a pollution risk resulting from the operation of the regulated facility.

We are satisfied that the necessary measures have been taken to return the site of the regulated facility to a satisfactory state, having regard to the state of the site before the facility was put into operation.

The extent of the facility has changed as a result of the partial surrender and the operator has provided a plan showing the extent of the site of the facility that is to be surrendered. The operator has provided a plan which we consider to be satisfactory.

The Operator submitted a site condition report Phase 1A Initial Baseline Site Report during the original application received in 2004. This was followed by the Site protection and Monitoring Plan 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.

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 flooding which we consider to be a severe weather event.

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

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 (IC17) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

Containment

We asked the Operator via the Regulation 61 Notice to provide details of the each above ground tanks which contain potentially polluting liquids at the site, including tanks associated with the effluent treatment process where 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 (IC21). 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).

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT conclusions. The justifications for these are provided in Annex 5 of this decision document.

Previous improvement conditions marked as complete in the previous permit.

Superseded Improvement Conditions – Removed from permit as marked as “complete”	
Reference	Improvement Condition
IC1	<p>The Operator shall undertake air emission monitoring (method as specified in table 2.2.2 of the permit) of oxides of nitrogen and carbon monoxide from emission point PPB, as defined in table 2.2.1. This monitoring will be for the duration of one day shift and shall be repeated for two such shifts, and shall include measurement of concentration and efflux velocity.</p> <p>The Operator shall submit a written report to the Agency detailing the monitoring undertaken and results obtained, and contain a comparison with, and justification for, the data used in the Operators original H1 assessment of this emission point.</p>
IC2	<p>The Operator shall complete a survey of the routing of all drains within the installation.</p> <p>The Operator shall provide a written report and summary of this survey to the Agency.</p>
IC3	<p>The Operator shall confirm in writing the cessation of discharges from discharge point W1A, as defined in table 2.2.4. and provide details of the location, and sampling arrangements, for the redirected discharge point , to be specified as W1B.</p>
IC4	<p>The Operator shall develop a written Site Closure Plan with regard to the requirements set out in Section 2.11 of the Agency Guidance Note IPPC S6.10 (dated 25 October 2003). Upon completion of the plan a written summary of the document shall be submitted to the Agency.</p>
IC5	<p>The Operator shall notify the agency in writing on completion of each of the proposed improvements identified in section B9 of the application document.</p>
IC6	<p>The operator shall investigate options for preventing or minimising noise emitted from the following items of plant having regard to Section 2.9 of the Agency Guidance Note IPPC S6.10 (dated 25 October 2003):</p> <ul style="list-style-type: none"> • The condenser fan close to tower 91 on the roof of building:U5; • The banks of fans on roof of buildings Moulded 1 & 2; • Vent 22 on ‘V’ Block; • The cooling tower opposite staff shop <p>The Operator shall also investigate noise abatement options for compressors and refrigeration units associated with;</p> <ul style="list-style-type: none"> • ‘U’ Block; • ‘L’ Block; • The cocoa block. <p>A written report shall be submitted to the Agency for approval detailing the options available, the preferred option and timetable for implementation of any work.</p>
IC7	<p>The Operator shall investigate the cause of elevated free cyanide concentration in the water discharged from points W5, W27 and W30. The investigation shall include, but not be limited to; analysis of discharge water at various times of day and comparison to free cyanide levels in the abstracted water; identification of potential sources of free cyanide for each discharge point</p>

	A written report detailing the findings of the investigation, a summary of test results and outcome of corrective action taken, shall be submitted to the Agency.
IC8	The operator shall submit a written report to the Agency on the feasibility of installing primary effluent treatment , which shall include, but not be limited to; <ul style="list-style-type: none"> • A feasibility study of the use of membrane technology to remove waste • Reduction of COD load in effluent discharged • A review of treatment options available along with their associated benefits, having regard to Sections 2.2 and 2.4.3 of the Agency Guidance Note IPPC S6.10 (dated 25 October 2003).
IC9	The Operator shall submit a written report to the Agency detailing proposed improvements to their Environmental Management System (EMS) as follows; <ul style="list-style-type: none"> • Implement procedures within their EMS to regularly review new developments in raw materials and for the implementation of any suitable ones of improved environmental profile. • Implement a formal procedure for inspection and maintenance of site surfacing and testing of bunds • Implement a noise management plan, having referred to Agency Horizontal guidance Note IPPC H3, for management of noise from those areas identified in improvement condition 6 and for receptors identified in section B2.9 of the Operator's application The Operator shall confirm in writing to the Agency when these procedures are in place.
IC10	The Operator shall review the provision of protection of surface water drains from fugitive emissions throughout the installation, and in particular in areas of waste storage. A written report shall be provided to the Agency detailing any deficiencies identified, the improvements proposed and the time scale for implementation.
IC11	The Operator shall review the adequacy and suitability of existing bund provision and unloading points in the installation, with reference to section 2.2.5 of the Agency Guidance Note IPPC S6.10 (dated 25 October 2003).. A written report shall be provided to the Agency to include details of bunds, any deficiencies identified, the improvements proposed and the time scale for implementation.
IC12	The Operator shall implement an inspection program for abated emission points M1 028, CHB 0040, CHB 0041, CHB 0042, CHB 0046, CHB 0047, CHB 0050 and CHB 0051 which utilise reverse jet bag filters or in-line filters. This shall include provision for cleaning, maintenance or replacement of filters to ensure continued effective operation of the abatement. The Operator shall confirm in writing to the Agency the details of this program and the time scale for phasing in the inspections.
IC13	The Operator shall review the provision of MCERTS certification (or where this is not applicable, UKAS accreditation) for the organisations or methods employed to sample and analyse samples taken to fulfil the conditions of this permit. A report shall be submitted that details a timetable for achieving this standard for all parameters identified by the review as not meeting the required certification/ accreditation.
IC14	The Operator shall provide the Agency with a report on the substitution of R22 Refrigerant with less hazardous alternatives, and

	provide justification where this is not feasible. This report shall include a timescale for the implementation of any improvements that have been identified
IC15	The Operator shall provide continuous temperature and flow monitoring on discharge points W5, W27 and W30 to Griffin's Brook. The flow monitoring methods shall include continuous and integrated daily flow rate and shall meet with the monitoring standard requirements of MCERTS, as set out in Agency guidance "Minimum Requirements for the Self-Monitoring of Effluent Flow" and in accordance with permit condition 2.10.7. The Operator shall inform the Agency in writing the details of the systems installed and the date of installation.
IC16	The Operator shall review the environmental risk from the raw materials and chemicals used within the installation boundary and assess the protective measures in place for their storage. This review shall also include identifying where substitute materials of lower environmental impact could be used. Particular consideration shall be given to the chemicals connected with maintenance, cleaning, refrigeration and supporting site utilities. A written report shall be provided to the Agency giving details of the review, the improvements proposed and the time scale for implementation of the improvements.

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

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IC17	The operator shall produce a climate change adaptation plan. The approved plan will form part of the EMS. The plan shall include, but not be limited to: <ul style="list-style-type: none"> • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the operations within the installation; • An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation. The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	03/12/2023 or other date as agreed in writing with the Environment Agency
IC18	The operator shall provide a written statement from the Original Equipment Manufacturer (OEM) of the boilers confirming the equipment has been derated to the stated new thermal capacity.	Within 6 months of permit issue
IC19	The operator shall provide a revised noise impact assessment including all the proposed mitigation measures on site. The assessment shall be carried out in accordance with BS 4142. The noise impacts assessment must consider all the noise resulting	30 November 2023 or other date as agreed in writing with the

	from both existing noise sources and those newly installed.	Environment Agency
IC20	<p>The Operator shall submit a revised Noise Management Plan to the Environment Agency for technical assessment and approval, demonstrating compliance against BAT 13 for the FDM industries. Further guidance on NMPs can be found on our website Noise and vibration management: environmental permits - GOV.UK (www.gov.uk)</p> <p>The updated plan must include the following elements:</p> <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>The noise management plan should be reviewed at least annually to ensure continued compliance against BAT 13 as described above.</p> <p>You must implement the plan as agreed, and from the date stipulated by the Environment Agency.</p>	30 November 2023 or other date as agreed in writing with the Environment Agency
IC21	<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"> • 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 <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"> • current containment measures • any deficiencies identified in comparison to relevant standards, • improvements proposed • time scale for implementation of improvements. <p>The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.</p>	3 months form permit issue