

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/NP3333UU
The Operator is: Birds Eye Limited
The Installation is: Lowestoft Food Factory
This Variation Notice number is: EPR/NP3333UU/V006

What this document is about

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

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

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

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

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

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

1. Our decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review
6. Annex 3 – Improvement Conditions

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow the Operator to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

We consider that, in reaching our decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 (a Regulation 61 Notice) on 01/08/2022 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 30/11/2022.

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 BAT 6 (a). The operator currently hasn't demonstrated compliance with the requirements of BATc 6 (a). In relation to this BAT Conclusion. In relation to this BAT Conclusion, we do not fully agree with the Operator in respect of their current stated capability as recorded in their response to the Regulation 61 Notice. We have therefore included Improvement Condition 11 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered within 3 months of the variation being issued.

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request on 13/12/2023, this was concerning BAT 6, BAT 7, BAT 11, site condition report, medium combustion plant and relevant hazardous substances information. A copy of the further information request was placed on our public register.

3 The legal framework

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

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

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

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

Annex 1: decision checklist regarding relevant BAT Conclusions

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

There are 37 BAT Conclusions.

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

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

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

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

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

NA – Not Applicable

CC – Currently Compliant

FC – Compliant in the future (within 4 years of publication of BAT Conclusions)

NC – Not Compliant

| BATC No. | Summary of BAT Conclusion requirement for Food, Drink and Milk Industries | Status NA/ CC / FC / NC | Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement |
|---|---|----------------------------|--|
| GENERAL BAT CONCLUSIONS (BAT 1-15) | | | |
| 1 | <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 EMS externally accredited to the ISO14001 standard.</p> |
| 2 | <p>EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.</p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p> | CC | <p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>The operator has an EMS externally accredited to the ISO14001 standard.</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 monitors effluent for flow and pH before it is discharged to sewer under consent of Anglian Water.</p> |
| 4 | <p>Monitoring emissions to water to the required frequencies and standards.</p> <p>BAT is to monitor emissions to water with at least the frequency given [refer to BAT 4 table in BATc] and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p> | NA | <p>We are satisfied that BATc 4 is not applicable to this Installation.</p> <p>All treated trade effluent is discharged directly to sewer under consent of Anglian Water.</p> |
| 5 | <p>Monitoring channelled emissions to air to the required frequencies and standards.</p> <p>BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p> | NA | <p>We are satisfied that BATc 5 is not applicable to this Installation.</p> <p>None of the processes and associated emissions described in BATc 5 are carried out</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 |
|----------|---|----------------------------|---|
| | | | on site and as such this BATc is not applicable. |
| 6 | <p>Energy Efficiency</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>We consider that the operator will be future compliant with BATc 6. Improvement condition 11 has been included in the permit to achieve compliance (see Annex 3).</p> <p>The operator uses a variety of techniques as described in BATc 6, this includes:</p> <ul style="list-style-type: none"> • Optimisation of steam systems • Reducing heat loss by insulation, this is surveyed regularly to ensure optimal operation. • Energy efficient motors. • Energy efficient lighting. • Reducing compressed air system leaks. <p>However, the operator does not have an energy efficiency plan in place and as such IC 11 has been included in the permit.</p> |
| 7 | <p>Water and wastewater minimisation</p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below.</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> | 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>(e) Dry cleaning</p> <p>(g) High pressure cleaning</p> <p>(h) Automatic chemical dosing is applied to several pieces of equipment across site.</p> <p>(i) low pressure foam</p> <p>(j) Optimised design and construction of equipment and process areas</p> <p>(k) Cleaning of equipment as soon as possible</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 |
|----------|--|----------------------------|---|
| | (j) Optimised design and construction of equipment and process areas (k) Cleaning of equipment as soon as possible | | Being a food processing site, water recycling is difficult due to the requirements for food hygiene. The site has implemented condensate recovery in their steam systems to recover some water for the processes. |
| 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 (b) Reuse of cleaning chemicals in cleaning-in-place (CIP) (c) Dry cleaning (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 uses a variety of techniques as described under BATc 8, this includes:</p> <p>(a) Proper selection of cleaning chemicals and/or disinfectants (c) Dry cleaning (d) Optimised design and construction of equipment and process areas</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 main refrigerants on site use ammonia, any existing refrigerants with a high GWP have been identified and a plan has been put in place to ensure lower GWP models are used to replace these as and when necessary.</p> |
| 10 | <p>Resource efficiency</p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <p>(a) Anaerobic digestion (b) Use of residues (c) Separation of residues (d) Recovery and reuse of residues from the pasteuriser</p> | CC | <p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p> <p>The operator practices resource efficiency across the site using techniques, including;</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 |
|----------|---|----------------------------|---|
| | (e) Phosphorus recovery as struvite (f) Use of waste water for land spreading | | sending waste for anaerobic digestion (a), use of residues (b) and separation of residues (c). |
| 11 | <p>Waste water buffer storage</p> <p>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 site has a significant bund on their wastewater tank with a capacity of 190%, meeting all CIRIA 736 requirements. Furthermore the site has penstock valves in place to ensure any uncontrolled emissions and/or spillages can be intercepted, these are tested and maintained regularly. In addition spill kits are located across the site in key locations to control smaller spillages.</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> <p>(i) Enhanced biological phosphorus removal</p> <p>Final solids removal</p> <p>(j) Coagulation and flocculation</p> <p>(k) Sedimentation</p> | CC | <p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 12.</p> <p>The operator treats all effluent discharge by, equalisation (a), physical separation (c) (rotary screen) and coagulation and flocculation (j) before discharge directly to foul sewer under consent from Anglian Water.</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 | | | | | | | | | | |
|--------------------------------------|--|----------------------------|---|--------------------------------------|-----------------|------------------------------|---------------|---------------------|-------------------|-----------------------|----------------|----|--|
| | (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation | | | | | | | | | | | | |
| 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="286 488 1216 687"> <thead> <tr> <th>Parameter</th> <th>BAT-AEL (1) (2) (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) (1) (2)</td> <td>25-100 mg/l (2)</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>4-50 mg/l (2)</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td>2-20 mg/l (2) (2)</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td>0,2-2 mg/l (2)</td> </tr> </tbody> </table> | Parameter | BAT-AEL (1) (2) (daily average) | Chemical oxygen demand (COD) (1) (2) | 25-100 mg/l (2) | Total suspended solids (TSS) | 4-50 mg/l (2) | Total nitrogen (TN) | 2-20 mg/l (2) (2) | Total phosphorus (TP) | 0,2-2 mg/l (2) | NA | <p>We are satisfied that BATc 12-AELs are not applicable to this Installation.</p> <p>All treated trade effluent is discharged directly to sewer under consent of Anglian Water for further treatment.</p> |
| Parameter | BAT-AEL (1) (2) (daily average) | | | | | | | | | | | | |
| Chemical oxygen demand (COD) (1) (2) | 25-100 mg/l (2) | | | | | | | | | | | | |
| Total suspended solids (TSS) | 4-50 mg/l (2) | | | | | | | | | | | | |
| Total nitrogen (TN) | 2-20 mg/l (2) (2) | | | | | | | | | | | | |
| Total phosphorus (TP) | 0,2-2 mg/l (2) | | | | | | | | | | | | |
| 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. | NA | <p>We are satisfied that BATc 13 is not applicable to this Installation.</p> <p>The site has not received any noise nuisance complaints and as such BATc 13 is not applicable.</p> | | | | | | | | | | |
| 14 | <p>Noise management</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</p> <ul style="list-style-type: none"> (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement | CC | <p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>The operator uses various techniques to manage any noise pollution that may be produced on site. This includes:</p> <ul style="list-style-type: none"> a) Appropriate location of equipment and buildings | | | | | | | | | | |

| 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"> b) Operational measures: Keeping doors closed, appropriate training of staff, limiting use of vehicles, noise assessments. c) Low-noise equipment: New equipment is selected appropriately to ensure low noise options are selected. |
| 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. | NA | <p>We are satisfied that BATc 15 is not applicable to this Installation.</p> <p>The site has not received any odour nuisance complaints and as such BATc 15 is not applicable.</p> |
| FRUIT and VEGETABLE SECTOR BAT CONCLUSIONS (BAT 27) | | | |
| 27 | <p>In order to increase energy efficiency, BAT is to use an appropriate combination of the techniques specified in BAT 6 and to cool fruit and vegetables before deep freezing.</p> | CC | <p>The operator has provided information to support compliance with BATc 27. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 27.</p> <p>Vegetables are cooled using ammonia/glycol cooling system before being placed into an ammonia freezer. This is in addition to the techniques used in BATc 6.</p> |
| Fruit and Vegetable Sector Environmental Performance Levels | | | |

| 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>Environmental Performance Level – Energy consumption for the fruit and vegetable sector</p> <p style="text-align: center;"><i>Table 12</i></p> <p style="text-align: center;">Indicative environmental performance levels for specific energy consumption</p> <table border="1" data-bbox="295 405 1227 574"> <thead> <tr> <th>Specific process</th> <th>Unit</th> <th>Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <tr> <td>Potato processing (excluding starch production)</td> <td rowspan="2">MWh/tonne of products</td> <td>1,0-2,1 ⁽¹⁾</td> </tr> <tr> <td>Tomato processing</td> <td>0,15-2,4 ⁽²⁾ ⁽³⁾</td> </tr> </tbody> </table> <p>⁽¹⁾ The specific energy consumption level may not apply to the production of potato flakes and powder. ⁽²⁾ The lower end of the range is typically associated with the production of peeled tomatoes. ⁽³⁾ The upper end of the range is typically associated with the production of tomato powder or concentrate.</p> | Specific process | Unit | Specific energy consumption (yearly average) | Potato processing (excluding starch production) | MWh/tonne of products | 1,0-2,1 ⁽¹⁾ | Tomato processing | 0,15-2,4 ⁽²⁾ ⁽³⁾ | CC | <p>The operator has provided information to support compliance with BAT-EPL for energy consumption . We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the BAT-EPL for energy consumption.</p> <p>The operator has declared a specific energy consumption of 0.91 MWth/ tonne of product. This is an inclusive result for both vegetables and meat as they are unable to split the results due to the processes being mixed. However we can deem this as acceptable as the level is well with-in the BAT limit.</p> |
| | Specific process | Unit | Specific energy consumption (yearly average) | | | | | | | | |
| Potato processing (excluding starch production) | MWh/tonne of products | 1,0-2,1 ⁽¹⁾ | | | | | | | | | |
| Tomato processing | | 0,15-2,4 ⁽²⁾ ⁽³⁾ | | | | | | | | | |
| EPL | <p>Environmental Performance Level – Specific waste water discharge for the fruit and vegetable sector</p> <p style="text-align: center;"><i>Table 13</i></p> <p style="text-align: center;">Indicative environmental performance levels for specific waste water discharge</p> <table border="1" data-bbox="295 909 1227 1098"> <thead> <tr> <th>Specific process</th> <th>Unit</th> <th>Specific waste water discharge (yearly average)</th> </tr> </thead> <tbody> <tr> <td>Potato processing (excluding starch production)</td> <td rowspan="2">m³/tonne of products</td> <td>4,0-6,0 ⁽¹⁾</td> </tr> <tr> <td>Tomato processing when water recycling is possible</td> <td>8,0-10,0 ⁽²⁾</td> </tr> </tbody> </table> <p>⁽¹⁾ The specific waste water discharge level may not apply to the production of potato flakes and powder. ⁽²⁾ The specific waste water discharge level may not apply to the production of tomato powder.</p> | Specific process | Unit | Specific waste water discharge (yearly average) | Potato processing (excluding starch production) | m ³ /tonne of products | 4,0-6,0 ⁽¹⁾ | Tomato processing when water recycling is possible | 8,0-10,0 ⁽²⁾ | CC | <p>The operator has provided information to support compliance with BAT-EPL for specific waste water discharge . We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the BAT-EPL for specific waste water discharge.</p> <p>The operator has declared a specific energy consumption of 2.47 m³/ tonne of product. This is an inclusive result for both vegetables and meat as they are unable to split the results due to the processes being mixed. However we can deem this as acceptable as the level is well with-in the BAT limit.</p> |
| | Specific process | Unit | Specific waste water discharge (yearly average) | | | | | | | | |
| Potato processing (excluding starch production) | m ³ /tonne of products | 4,0-6,0 ⁽¹⁾ | | | | | | | | | |
| Tomato processing when water recycling is possible | | 8,0-10,0 ⁽²⁾ | | | | | | | | | |
| MEAT SECTOR BAT CONCLUSIONS (BAT 29) | | | | | | | | | | | |
| 29 | In order to reduce channelled emissions of organic compounds to air from meat smoking, BAT is to use one or a combination of the techniques given below. | NA | We are satisfied that BATc 29 is not applicable to this Installation. | | | | | | | | |

| 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 | | | | | | |
|--|---|---|---|---|--|--------------------|---|-----------|---|
| | (a) Adsorption (b) Thermal oxidation (c) Wet scrubber (d) Use of purified smoke | | No meat smoking takes place on site and as such the BATc is not applicable. | | | | | | |
| AEL | <p style="text-align: center;"><i>Table 18</i></p> <p style="text-align: center;">BAT-associated emission level (BAT-AEL) for channelled TVOC emissions to air from a smoke chamber</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Parameter</th> <th style="width: 20%;">Unit</th> <th style="width: 50%;">BAT-AEL (average over the sampling period)</th> </tr> </thead> <tbody> <tr> <td>TVOC</td> <td>mg/Nm³</td> <td>3-50 ⁽¹⁾ ⁽²⁾</td> </tr> </tbody> </table> <p>⁽¹⁾ The lower end of the range is typically achieved when using adsorption or thermal oxidation. ⁽²⁾ The BAT-AEL does not apply when the TVOC emission load is below 500 g/h.</p> | Parameter | Unit | BAT-AEL (average over the sampling period) | TVOC | mg/Nm ³ | 3-50 ⁽¹⁾ ⁽²⁾ | NA | <p>We are satisfied that BATc 29 AEL is not applicable to this Installation.</p> <p>No meat smoking takes place on site and as such the BATc is not applicable.</p> |
| Parameter | Unit | BAT-AEL (average over the sampling period) | | | | | | | |
| TVOC | mg/Nm ³ | 3-50 ⁽¹⁾ ⁽²⁾ | | | | | | | |
| Meat Processing Sector Environmental Performance Levels | | | | | | | | | |
| EPL | <p>Environmental Performance Level – Energy consumption for the meat processing sector</p> <p style="text-align: center;"><i>Table 16</i></p> <p style="text-align: center;">Indicative environmental performance level for specific energy consumption</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Unit</th> <th style="width: 70%;">Specific energy consumption (yearly average)</th> </tr> </thead> <tbody> <tr> <td>MWh/tonne of raw materials</td> <td>0,25-2,6 ⁽¹⁾ ⁽²⁾</td> </tr> </tbody> </table> <p>⁽¹⁾ The specific energy consumption level does not apply to the production of ready meals and soups. ⁽²⁾ The upper end of the range may not apply in the case of a high percentage of cooked products.</p> | Unit | Specific energy consumption (yearly average) | MWh/tonne of raw materials | 0,25-2,6 ⁽¹⁾ ⁽²⁾ | CC | <p>The operator has provided information to support compliance with BAT-EPL for energy consumption . We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the BAT-EPL for energy consumption.</p> <p>The operator has declared a specific energy consumption of 0.91 MWth/ tonne of product. This is an inclusive result for both vegetables and meat as they are unable to split the results due to the processes being mixed. However we can deem this as acceptable as the level is well with-in the BAT limit.</p> | | |
| Unit | Specific energy consumption (yearly average) | | | | | | | | |
| MWh/tonne of raw materials | 0,25-2,6 ⁽¹⁾ ⁽²⁾ | | | | | | | | |

| 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>Environmental Performance Level – Specific waste water discharge for the meat processing sector</p> <p style="text-align: center;"><i>Table 17</i></p> <p style="text-align: center;">Indicative environmental performance level for specific waste water discharge</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%; text-align: center;">Unit</th> <th style="text-align: center;">Specific waste water discharge(yearly average)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">m³/tonne of raw materials</td> <td style="text-align: center;">1,5-3,0 ⁽¹⁾</td> </tr> </tbody> </table> <p>⁽¹⁾ The specific waste water discharge level does not apply to processes using direct water cooling and to the production of ready meals and soups.</p> | Unit | Specific waste water discharge(yearly average) | m ³ /tonne of raw materials | 1,5-3,0 ⁽¹⁾ | CC | <p>The operator has provided information to support compliance with BAT-EPL for specific waste water discharge . We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with the BAT-EPL for specific waste water discharge.</p> <p>The operator has declared a specific energy consumption of 2.47 m³/ tonne of product. This is an inclusive result for both vegetables and meat as they are unable to split the results due to the processes being mixed. However we can deem this as acceptable as the level is well with-in the BAT limit.</p> |
| Unit | Specific waste water discharge(yearly average) | | | | | | |
| m ³ /tonne of raw materials | 1,5-3,0 ⁽¹⁾ | | | | | | |

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

Updating permit during permit review consolidation

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

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

Capacity Threshold

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

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

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

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

Emissions to Air

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

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

Implementing the requirements of the Medium Combustion Plant Directive

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

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

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

Combined heat and power (CHP) engines

| | |
|---|------------------|
| 1. Rated thermal input (MW) of the medium combustion plant. | 8.5 MWth |
| 2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant). | CHP Engine |
| 3. Type and share of fuels used according to the fuel categories laid down in Annex II. | 100% 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. | 2013 |

Boilers

| Boiler Names | No.1 Robey Boiler | No.2 Robey Boiler | No.3 Robey Boiler | No.2 Calpac Boiler | Denes 1 Line 5 Wanson Thermal Oil Boiler | Denes 1 Line 6 Wanson Thermal Oil Boiler |
|---|-------------------|-------------------|-------------------|--------------------|--|--|
| 1. Rated thermal input (MW) of the medium combustion plant. | 2.3 MWth | 2.3 MWth | 2.9 MWth | 2.4 MWth | 1.2 MWth | 1.2 MWth |
| 2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant). | Boiler | Boiler | Boiler | Boiler | Boiler | Boiler |
| 3. Type and share of fuels used according to the fuel categories laid down in Annex II. | 100% Natural Gas | 100% Natural Gas | 100% Natural Gas | 100% Natural Gas | 100% Natural Gas | 100% 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 | 1984 | 1984 | 1994 | 1984 | 2012 | 2021 |

| | | | | | | |
|-------------------|--|--|--|--|--|--|
| 20 December 2018. | | | | | | |
|-------------------|--|--|--|--|--|--|

We have reviewed the information provided and we consider that the declared combustion plant qualify as “existing” medium combustion plant. With the exception ‘Denes 1 Line 6 Wanson Thermal Oil Boiler’, this boiler is existing and was permitted in the previous variation V005.

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

For existing MCP with a rated thermal input of less than or equal to 5 MW, the emission limit values set out in tables 1 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2030.

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.

We have removed emission points A3, A5a, A6 and A10 due to equipment being decommissioned. A19 has also been removed as the water heater is not used in the permitted activities.

Furthermore we have included the below emission points in Table S3.1. These have been in operation for many years and have been previously assessed however they were omitted from the previous variation table.

| Emission point | Source |
|-----------------------|--|
| A25, A26, A27 | Gas fired Fryers (<1 MWth) |
| A28 and A29 | UV Scrubbers |
| A30 | CO ₂ BOC (industrial grade carbon dioxide - compressed) |
| A31 | Nitrogen for refrigeration |
| A32 | CO ₂ BOC (industrial grade carbon dioxide - compressed) |
| A33 | Intergen Gas (Highly compressed mixture of gases - used only in emergencies) |

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 an updated site condition report ‘Site Condition and Baseline Report’ dated January 2014. 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 prolonged dry weather/drought, which we consider to be a severe weather event.

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

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

Containment

We asked the Operator 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. We are satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736.

Annex 3: Improvement Conditions

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

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 | The operator shall carry out an assessment of the options available for reducing Volatile Organic Carbon (VOC) emissions from the fryer unit within Denes 4. The assessment should include, but not be limited to the increased use of catalytic converters. A summary of the assessment shall be sent to the Agency in writing together with a timetable to implement any necessary changes identified. |
| IC2 | The operator shall review the refrigerants utilised at the installation. The review will take into account the potential environmental impact of the refrigerants, especially CFC's and CHFC's, and the use of alternative less environmentally hazardous materials. A written report summarising the findings shall be submitted to the Agency. Should it be concluded that the installation should continue to use refrigerants with a high global warming potential, the review is to be repeated on a biannual basis and a report of such subsequent reviews submitted every second year, unless otherwise agreed in writing with the Agency. |
| IC3 | The operator shall put in place measures and procedures to prevent or reduce fugitive emissions to air consistent with the details given the Agency Guidance Note IPPC S6.10 Section 2.2.4.1. This must include a refrigerant accounting system for all refrigerants used on the installation. A written report of the systems is to be submitted to the agency. |
| IC4 | The operator shall undertake a review of locations and methods used to monitor effluent produced on site. The review shall focus on revising methods so that effluent produced from the activities included in the PPC installation can be monitored separately from effluent arising from the unregulated activities. The results of the review shall be submitted in a report in writing to the Agency. The report shall include time-scales for implementation for any improvements identified in the review. (12 months). |
| IC5 | The operator to investigate the options to reduce the potential odour emissions from the installation. The review shall include, but not be limited to abatement techniques and operational control. A summary of the assessment shall be sent to the Agency in writing together with a timetable to implement any necessary changes identified. |

| | |
|------|---|
| IC6 | The operator shall undertake noise survey of the installation to BS7455, 1991 using suitably qualified personnel to identify potential sources of nuisance to local inhabitants, with particular reference to the PPC listed operations (Denes 1, Denes 4 and effluent treatment plant). Should this survey identify any potential sources of noise nuisances, the operator is to propose firm measures, with appropriate timetables, to eliminate these sources. A written report in the survey and any associated actions is to be forwarded to the Agency. |
| IC7 | The operator shall review the ongoing use of the underground effluent pit and any other subsurface structures present on site in relation to their potential to cause fugitive emissions to surface water and ground water. This review is to take into account the requirements of section 2.2.5 of the Agency Guidance Note IPPC S6.10. A written report summarising the findings shall be submitted to the Agency. Any timescales for implementation of any improvements shall be agreed with the Agency. Operator to consider proposals for above ground alternatives with suitable secondary containment measures, and timescales for decommissioning. |
| IC8 | The operator shall undertake a review of methods used to monitor and segregate waste. The review shall focus on revising methods so that waster arising from regulated activities can be monitored and kept separate from waste arising from unregulated activities. The results shall be submitted in writing in a report to the Agency. The report shall include timescales for implementation of improvements identified. (18 months). |
| IC9 | The operator shall implement measures to improve the unloading, storage and bunding of all above ground chemical storage areas including IBCs such that any spillage is contained and may be fully recovered. The operator shall inform the Agency in writing of the measures undertaken. |
| IC10 | The operator shall undertake a review of the point source emissions to air from the site. This shall include monitoring of emission points A1, A10, A11 and A12 in accordance with the methods listed in technical guidance M2: Monitoring of stack emissions to air and a subsequent H1 assessment. The monitoring data and revised H1 assessment shall be provided to the Agency, together with details of any appropriate measures to be taken. These measures shall be agreed in wiring with the Agency before implementation. |

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

| Improvement programme requirements | | |
|---|--|---|
| Reference | Reason for inclusion | Justification of deadline |
| IC11 | The operator shall submit, for approval by the Environment Agency, a report demonstrating achievement of the 'Narrative' BAT conclusions as identified in the Food, Drink and Milk Bref published on 4 December 2019 where BAT is currently not demonstrated or achieved. The report shall include, but not be limited to, the following: • Methodology applied for achieving BAT | 3 months from date of issue or as agreed in writing by the Environment Agency |

| | | |
|--|---|--|
| | <ul style="list-style-type: none">• Demonstrating that BAT has been achieved. <p>The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to BATc 6(a) Refer to BAT Conclusions for a full description of the BAT requirement.</p> | |
|--|---|--|