Landmark House
20 Broomgrove Road
Sheffield
S10 2LR

Tel: 0114 263 1824
ehsprojects.co.uk
Registered no. 04845638

Brioche Pasquier UK Ltd Environmental Permit Application

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Prepared for:	Brioche Pasquier UK Limited
Prepared by:	Sarah Hornby
Reviewed by:	Steve Power
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Contents

1 Non-Technical Summary 1
2 What activities are you applying for? 3
2.1 Background 3
3 Emissions to Air, Water and Land 5
4 Operating Techniques 6
4.1 Technical Standards 6
4.2 Process Description 6
4.2.1 Raw Materials Intake and Storage 7
4.2.2 Raw Materials Preparation 7
4.2.3 Production lines 7
4.2.4 Packing, palletisation & dispatch 8
4.2.5 Hygiene & Cleaning Operations 8
4.2.6 Process Heat 8
4.2.7 Process Cooling 9
4.2.8 Maintenance Systems 9
5 General Requirements 9
5.1 Fugitive Emissions to Sewer, Surface Water and Groundwater 9
5.1.1 Fugitive Emissions to Air 10
5.1.2 Odour 10
5.1.3 Noise 10
5.1.4 Pests 10
5.2 Raw Materials 11
5.3 Management Systems 13
5.4 BAT Assessment 13
5.5 Accident Management Plan 14
6 Monitoring 16
6.1 Describe the measures you use for monitoring emissions 16
6.2 Point source emissions to air only 16
7 Environmental Impact Assessment 16
7.1 Have your proposals been the subject of an EIA under Council Directive 85/337/EEC? 16
8 Resource Efficiency and Climate Change 16
8.1 Electricity and Gas 17
8.2 Water 17
8.3 Ingredients 17
9 Installations that include a combustion plant (excluding waste incinerators) 17
10 Environmental Risk Assessment 17

10.1 Sensitive Receptors 17
10.2 Impact of Emissions to Air 19
10.3 Point Source Emissions to Sewer, Surface Water and Groundwater 20
10.4 Odour 20
10.5 Noise 20
10.6 Environmental Risk Assessment 22
11 Appendices 24
11.1 Appendix A – Site Plans 24
11.2 Appendix B – Odour Management Plan 24
11.3 Appendix C – Materials Inventory 24
11.4 Appendix D – BAT Assessment 24
11.5 Appendix E – Surface Water Risk Assessment 24
11.6 Appendix F – Air Quality Assessment 24
11.7 Appendix G – Site Condition Report 24
11.8 Appendix H – Relevant Persons 24

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1 Non-Technical Summary

Brioche Pasquiers Milton Keynes facility, hereafter the 'Site', produces baked brioche products for both the Pasquier brand and other major retailers. The Site comprises an approximate 4.05ha plot residing in Milton Keynes, Buckinghamshire, within the Wymbush industrial estate and employs approximately 300 people. On Site, processes involve raw materials delivery, ingredient preparation and mixing, fermentation, baking, packaging and distribution. Products are distributed across the United Kingdom.

The site is operational 24 hours a day, 7 days a week, 363 days a year and has a current capacity to run three production lines: Line 06 – Brioche Rolls, Line 09 – Chocolate Chip Rolls, and Line 03 – Chocolate Chip and Filled Pitch Rolls.

There are currently two further lines under construction and due to be in production from autumn 2026. The 4th line will produce Pain au Chocolate with a maximum potential capacity of 10,000 tonnes per annum. The fifth line which will be commissioned after the 4th will have an estimated maximum capacity of 8,500 tonne per annum, the product is yet to be confirmed. Upon the completion of works, when five lines will be in production, the operator has concluded that the facility will be obligated under the Environmental Permitting (England and Wales) Regulations (EPR) 2016, as amended, in relation to the following activities:

Section 6.8 A (1) (d)(iii)

Treatment and processing of animal and vegetable raw materials (other than milk only), both in combined and separate products, with a finished product production capacity in tonnes per day greater than—

(aa)75 if A is equal to 10 or more.

(bb) 300-(22.5 x A) in any other case,

Where 'A' is the proportion of animal material in percent of weight of the finished product production capacity.

There are a number of directly associated activities on the site which support the obligated activity, including:

- Storage of raw materials in bulk tanks
- IBC and drum storage
- Steam raising boilers
- Cooling towers
- Storage of waste prior to disposal off-site
- Treatment of effluent prior to discharge
- Odour abatement/ waste exemptions

The operator is therefore now making an application for an Environmental Permit to cover its entire footprint of operations at the facility for its design capacity.

Emissions to air from the site are from the process ovens. These have been assessed and found to have an insignificant impact on surrounding ecological and human receptors.

The operator has measures in place to protect drainage systems from spills of raw materials or wastes, including secondary containment of bulk tanks, level sensors for tanks, spill procedures and spill kits, and an interceptor at the critical surface water outflow point. All potential accident scenarios, mitigation measures and response actions are summarised in the Accident Management Plan (table 9) within this application. A full tank inventory, containment measures and containment risk assessment are provided with this application, refer to the appendices for these document references.

Due to the design of the facility, control measures in place, and location within an industrial estate there is considered to be no significant risk of fugitive emissions to air, odour or noise and vibration from the site.

The process is operated in accordance with the site Hazard Analysis and Critical Control Point (HACCP) plan, with operating procedures and risk assessments in place for all manufacturing operations. The process is operated in such a way as to maximise yield and minimise wastage. The operator has a rolling Continuous Improvement (CI) plan in place with opportunities regularly identified and tracked to completion.

The operator is has implemented and regularly reviews an Environmental Management System (EMS) which incorporates all the requirements of BAT and the forthcoming Environmental Permit.

Raw materials are delivered via bulk tanker, in drums, IBC's, sacks, bags and smaller containers and stored internally within the warehouse and internal raw material tank farm. A full materials inventory is provided within the application.

Energy use, water use, raw materials use, and waste arisings are all measured and monitored. The operator holds a Climate Change Agreement for the food and drink sector.

Sensitive ecological and human receptors around the site have been identified and a risk assessment carried out on the potential for the site to impact upon these receptors. Air emissions screening/ modelling was carried out to assess the impact of emissions to air from the boilers. This concluded that emissions are within guideline levels and will not have a significant impact on human or ecological receptors.

The risk assessment concludes that while there is minimal risk of pollution of the surface water drainage system, containment and mitigation measures in place and proposed are sufficient to manage the risk to an acceptable level.

2 What activities are you applying for?

Table 1: Types of Activities

Schedule 1 listed activities						
Installation Name	**Schedule 1 References**	**Description of the activity**	**Activity capacity**	**Annex IIA or IIB (Disposal and recovery) codes**	**Hazardous waste treatment capacity**	**Non-hazardous waste treatment capacity**
Brioche Pasquier	Section 6.8(A)(d) (ii)	Treatment and processing of animal and vegetable raw materials with a capacity over 75 tonnes per day.	>75t day 90 t/day (at full design capacity)	N/A	N/A	N/A
Directly associated activities						
Name of DAA	Description of the DAA (please identify the schedule 1 activity it serves)					
Receipt, storage and handling raw materials	Ingredients, cooking oils and packaging.					
Materials Storage	Storage of raw materials in bulk tanks, IBC and drums					
Site Utilities	Operation of site utilities for services, hot water and steam raising, cooking of products, cooling, refrigeration systems, HVAC					
Packaging	Packaging and dispatch of products					
Cleaning and sanitation	In all areas related to preparation of the product and tray and bowl washings					
Waste storage and handling	Production, storage, compacting and handling of wastes for off-site disposal/recovery					
Waste exemption activities	None					
For installations that take waste	**Total storage capacity**	N/A				
	Annual throughput (tonnes each year)	N/A				

2.1 Background

Brioche Pasquier's Milton Keynes facility produces baked goods for the Brioche Pasquier brand alongside for a wide range of major UK retailers. The site's footprint covers over 40,000 m^3 and employs approximately 175 people. The on-site processes include preparation, baking, packaging and distribution of brioche and pastry goods. Products are distributed across the United Kingdom.

The site is operational 24 hours a day, 7 days a week, 363 days a year and, at the point of the permit determination, will have the capacity to run five lines; Line 06 – Brioche Rolls, Line 09 – Chocolate Chip Rolls, Line 03 – Chocolate Chip and Filled Pitch Rolls, Line 04 – Pain Au Chocolate and Line 05 - TBC. The weekly maximum product output, based on five lines in operation is 625 tonnes, which is equivalent to an average of 90 tonnes per day. There are currently no plans to install any further lines.



Figure 1: General layout of the site

3 Emissions to Air, Water and Land

Table 2: Point source emissions to air

Emission Point Ref	Parameter	*Limit*	Description
A06a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L06 oven chimney 1
A06b	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L06 oven chimney 2
A09a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L09 oven chimney 1
A09b	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L09 oven chimney 2
A03a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L03 oven chimney 1
A03b	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from L03 oven chimney 2
A00a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Products of combustion from R&D lab oven chimney
B01a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Fumes from Factory boiler 1
B02a	Oxides of Nitrogen (NOx) Carbon Monoxide (CO)	No Limit Set	Fumes from Office boiler 1
C00a	-	No Limit Set	Leaven Prod AHU extraction
C00b	-	No Limit Set	Prep room AHU extraction
C06a	-	No Limit Set	L06 S&P area extraction 1
C06b	-	No Limit Set	L06 S&P area AHU extraction 2
C06c	-	No Limit Set	L06 Glazing extraction
C06d	-	No Limit Set	L06 Cooler AHU extraction
C06e	-	No Limit Set	L06 Cooler AHU extraction 2
C06f	-	No Limit Set	L06 Grey Room AHU extraction
C09a	-	No Limit Set	L09 Glazing extraction
C09b	-	No Limit Set	L09 Cooler AHU extraction 1
C09c	-	No Limit Set	L09 Cooler AHU extraction 2
C09d	-	No Limit Set	L09 Grey Room AHU extraction
D06a	-	No Limit Set	L06 RMD product transfer exhaust vent
D09a	-	No Limit Set	L09 RMD product transfer exhaust vent
D03a	-	No Limit Set	L03 RMD product transfer exhaust vent
S01a	Particulates	No Limit Set	Sprinkler diesel pump exhaust vent
TBC	Particulates	No Limit Set	45 x smoke vents

Table 3: Point source emissions to water (other than sewers)

Emission Point Ref	Parameter	*Limit*	Description
W1	Clean surface water run-off	No limit set	Clean surface water run-off

Table 4: Point source emissions to sewers, ETP's or other transfers off site

Emission Point Ref	Parameter	*Limit*	Description
S1	Chemical oxygen demand (after one-hour quiescent settlement) Fat, oil & grease Suspended solids Temperature (maximum) pH Volume - Per 24hrs - Per second	5000mg/L 250mg/L 1500mg/L 43^{o}C 6.0 – 10.0 60m^{3} 4.0L	Used water from the production of BPUK products. Anglian Water Consent Ref: TEDI-0136-2025)

Table 5: Point source emissions to land

Emission Point Ref	Parameter	*Limit*	Description
N/A	-	-	-

4 Operating Techniques

4.1 Technical Standards

Table 6: Technical Standards

Description of the Schedule 1 Activity or DAA	Relevant Technical Guidance Note	Document Reference
6.8 A (1) (d)(ii) Treatment and processing of animal and vegetable raw materials with a capacity over 75 tonnes per day.	Food, Drink and Milk Industries BREF, 2018	See below and appendix D

4.2 Process Description

The production is split into three lines; Line 06 – Brioche Rolls, Line 09 – Chocolate Chip Rolls, Line 03 – Chocolate Chip and Filled Pitch Rolls. There are two further lines under construction Line 04 and Line 05, due to be in production from late 2026, at which point the EPR qualification threshold as a Schedule 1 6.8 A (1) (d)(ii) activity for the treatment of vegetable matter with a finished production capacity of over 75 tonnes per day will be met.

The raw material preparation is shared for all the lines. These are served by a common goods inwards area from which the raw materials are transferred to their relevant storage units; chilled, ambient or warm. Raw materials are prepared separately before being mixed, kneaded, fermented and proven as per the product specification, baked, and packaged for distribution. The packaging is not manufactured on site, although the date coding of each product is marked up prior to boxing.

4.2.1 Raw Materials Intake and Storage

Upon delivery, raw materials are transferred to their applicable ambient, chilled, or warm ingredient storage area. Each area is temperature controlled depending on the function of the area and entry of personnel and delivery of materials is strictly controlled.

There are a number of bulk storage units which hold flour, sugar, and rapeseed oil – these raw materials are transferred to the storage tanks directly via a road tanker. All bulk tanks are contained within an enclosed tank farm that is part of the main factory unit. The indoor setting provides robust containment measures for all tanks in this area. Receipt of all materials is controlled, and spill kits are stored near points of receipt. All other ingredients, consisting mainly of butter, milk, eggs and flavourings, are stored internally within their storage area on IBC's or pallets, many are also bunded as an additional precaution. Liquid chocolate is stored in tanks and silos in the warm storage room.

4.2.2 Raw Materials Preparation

There are six steps (A – F) of raw materials preparation, each of which has a dedicated process.

- Step A: Pre-mix preparation
    - Ingredients are prepared and powders stored in Kardex; raw materials are prepared in a bag splitter before all being transferred to a hopper, being mixed, transferred back to a hopper and dispensed into premix boxes. The mix is stored in premix boxes until the next stage of production.
- Step B: Egg powder preparation
    - Egg powder is sieved before being placed in a storage area ahead of the next stage of production.
- Step C: Ice production
    - Towns water is frozen and stored in the freezer.
- Step D: Chocolate chip preparation
    - Chocolate chips are transferred to a hopper, weighed and transferred to an intermediate hopper ahead of distributing to the production lines.
- Step E: Levain preparation
    - Salt and Mother Levain are mixed with water and kneaded before being transferred to a hopper and divided. The divided dough is weighed and stored for fermentation prior to the next stage of production.
- Step F: Glaze preparation
    - Ingredients are mixed with water and stored prior to the next stage of production.

For all steps, raw materials are removed from their packaging and weighed as per the product specification into buckets or hoppers and held until mixing. The buckets are segregated and marked up for traceability and allergen purposes. Any packaging is removed from the area for segregation, baling and disposal via a third-party licensed waste disposal contractor.

4.2.3 Production lines

All lines (Line 06: Brioche Rolls, Line 09: Chocolate Chip Rolls and Line 09: Filled Rolls, Line 04 Pain Au Chocolate, Line 05 TBC) all follow the same production process. Firstly, the ingredients are mixed into a dough as per the product specification, the dough is then kneaded and fermented for a set time period. The fermented dough is then divided, rounded and proven in line with the specific product specification before being glazed, scored and baked. The baked goods are cooled and demoulded before packaging.

4.2.4 Packing, palletisation & dispatch

The packaging used for all finished products is manufactured elsewhere, delivered to site and stored in a separate area to all food storage and production areas.

The packaging and distribution process consists of sealing and clipping each product group, checking the weight is within specification and date marking the packaging. Products are then boxed, palletised and stored ahead of dispatch.

4.2.5 Hygiene & Cleaning Operations

The cleaning chemicals used on site have been selected considering efficiency and suitability for intended use. Spill kits are placed on the site on location where potential spillage could occur. Chemicals are delivered to site either ready to use or requiring dilution. SOPs are in place to ensure appropriate usage of each cleaning product and internal concentration verification is done on a monthly basis. Cleaning chemicals are kept on drip trays in a locked internal store within the factory building and controlled accordingly.

For internal and external site cleaning, a 'Clean as You Go' instruction is in place for all operators and clearing of bins is undertaken at the end of each shift. Operators are trained on cleaning activities by a trainer; procedures and instructions are also in place to ensure cleaning standards are met. The efficiency of cleaning is being verified on a day-to-day basis and recorded weekly as an overall cleanliness score. Any flour dust is hoovered rather than dusted away to prevent harm to the health of the operators or discharge externally.

4.2.5.1 CIP

There are two cleaning windows per week, each lasting a minimum of 11hours, 30minutes. Each CIP programme is divided into three phases:

- Pre-wash: remove as much filling as possible
- Wash: to destroy any micro-organisms, this can be detergent only or detergent and acid depending on the cycle
- Rinse: remove the cleaning product residue

The cleaning circuit is conducted with either and alkaline or and acid. The alkaline CIP is done at a temperature 72°C and 88°C (target 80°C) with a chemical concentration of 1-2%. The acid CIP is run less frequently and follows an alkaline wash. The acid CIP is run cold with a concentration of 1-2%. The final rinse following an acid wash is pH tested to ensure it is within 6-8 pH.

4.2.6 Process Heat

There are currently three ovens on site and one process boiler. The boiler is a 0.7MWth natural gas boiler commissioned in November 2014. There is one oven per line, Oven 3 is a 1MWth direct fire oven and serves Line 03 and was commissioned in February 2019, Oven 06 (Line 06) and Oven 09 (Line 09) are both 0.5 MWth direct fire ovens commissioned in October 2015 and September 2016 respectively.

There will be two additional ovens installed to serve Line 04 and Line 05. Line 04 oven will be a 1MWth direct fire oven due for installation in August 2026. Line 05's oven will be installed in July 2028; it is expected that this oven will be a maximum size of 1 MWth. Both will be 100% natural gas fired.

As the one process boiler on site is 0.7 MWth and all the ovens are direct fire, the site has no medium combustion plant obligations. The site has undertaken an Air Quality Assessment in which detailed air dispersion modelling was undertaken, which concluded that there will be no significant impact on surrounding ecological and human receptors.

4.2.7 Process Cooling

Process chillers are FGas charged units used on site to facilitate the cooling of ingredients and products that require refrigeration. The site plants are managed by the Facilities department and any works on the units are undertaken by qualified external contractors. There are also a number of comfort cooling units that service office spaces, as with the process chillers, upkeep and maintenance of these units is completed by qualified external contractors. Brioche is aware of the phase out of F-gas use; systems are under maintenance contracts and only compliant gases are used where top-up is required and for system replacement.

4.2.8 Maintenance Systems

The site utilises a computerised maintenance management system managed by the onsite Engineering and Facilities departments. The software package maintains a computer database of information about all key maintenance operations, notifies of PPM's, and allows for efficient management of systems.

5 General Requirements

Table 7: General Requirements

Are fugitive emissions an important issue?	No
Is odour an important issue?	See Appendix B – Odour Management Plan
Are noise and vibration an important issue?	No

5.1 Fugitive Emissions to Sewer, Surface Water and Groundwater

Raw materials and ingredients are all stored internally. All bulk tanks are contained within an enclosed tank farm that is part of the main factory unit, non-bulk ingredients are contained within their storage area on IBC's or pallets, many are also bunded as an additional precaution. Liquid chocolate is stored in tanks and silos in the warm storage room. The indoor setting provides robust containment measures for all tanks in this area. The yard is all hardstanding, and all structural concrete is suitable for use for heavy duty and industrial settings. There are sealed joints to all concrete slabs. All pipes are clay or stainless steel, with chemically resistant collars and stainless-steel manhole covers, bedded in concrete.

Surface water and foul drainage is separate. A petrochemical interceptor is shown on the site surface water drainage drawing which serves the main yard. Surface water from the hardstanding area outfalls on the southeastern boundary, from here is connects to a wider drainage network, the final outfall to stream is not known. There is a slam shut valve to shut off the surface water in the event of a major spillage in the yard. In the event of a spill, spill kit materials would be deployed with the aim of preventing the spill reaching the surface water drainage system. Spill response measures are provided in the yard to prevent pollution from leaks and spills

Discharges to sewer are managed under the Sites Consent to Discharge held with Anglian Water (TEDI-0136-2025). Although there is not any continuous monitoring in place for the discharge, the site is routinely compliant with the limits stated in the Consent to Discharge. Composite sampling of final effluent was undertaken in October 2025 which demonstrated compliance with discharge consent limits for fats, oils and greases, total suspended solids, and COD.

Delivery points to all bulk tanks are located internally. Procedures for receipt of all ingredients and chemicals are in place as part of the site's Environmental Management System. Spill kits and drain covers are in place in the yard for use in the event of a leak or spill; operatives are trained in the use of spill kits.

Waste compactors and containers are labelled and located within a designated area of the yard. The waste containers are fully covered and regularly removed from site.

Regular Health and Safety walks and audits take place which include internal space and external yard areas, these would include visual inspection of storage facilities and associated infrastructure, bunds, housekeeping and the tertiary hard standing.

5.1.1 Fugitive Emissions to Air

There are no external sources of dust. Dust from flour is controlled via LEV systems, any waste generated is stored in enclosed hoppers prior to periodic disposal. Any dusty wastes are stored in enclosed IBC's or barrels in designated internal waste storage areas pending collection.

There is the potential for fugitive emissions to air from refrigeration plant leaks. All refrigeration plant is subject to ongoing planned preventative maintenance and checks in accordance with manufacturers recommendations, under a service contract. This minimises any possibility of fugitive leaks of refrigerant gas.

5.1.2 Odour

The processing operations are all located internally within enclosed buildings and as such there is a low risk of odour from normal operations. All raw materials arrive in enclosed containers and are unloaded directly into internal bays. No odour complaints have been received in since the commissioning of the facility.

Processing buildings also operate air handling systems which vent from the building. In addition, there are potential sources of fugitive release of odour:

- Raw materials receipt and unloading
- Waste Storage
- Site Drains
- Building entrances and exits

The emphasis in the management of odour from the site is on prevention, and as such preventative maintenance, management, monitoring and inspection of all potential sources of odour are the main control measures. The site holds an Odour Management Plan (OMP) as a document within their Environmental Management System, which is issued in accordance with the EA Guidance on Odour (Appendix B).

5.1.3 Noise

The main sources of noise are vehicle movements on and off site for deliveries and product distribution. There is also potential for noise during offloading and loading of raw materials and products, operation of compressors and process machinery. To manage the noise impacts tanker engines are switched off during loading and offloading, for both safety reasons and to minimise noise and delivery times are scheduled to minimise impact on surrounding receptors. All compressors and process equipment is enclosed within the main factory building to reduce impact on neighbouring areas. The site has never received any complaints of noise nuisance.

5.1.4 Pests

The operator has an ongoing pest control contract in place with a third-party provider.

5.2 Raw Materials

Raw materials and other consumables are monitored and tracked alongside utilities and waste. The information collected is used to generate recommendations for improvement projects, which are taken forward for business case/capex where feasible. The site monitors and reports it's absolute and relative performance at a group level on a monthly basis; this drives continual improvement and allows changes to be flagged and investigated. The framework of the EMS provides the governance for the setting, reporting and reviewing of objectives and targets with respect to consumption and usage.

A breakdown of the materials inventory is included at Appendix C – Materials Inventory.

Table 8: Bulk Storage Vessel Inventory

Tank/container name or reference	Location	Contents	Tank / container capacity (litres)	Material of Tank/Container Construction	Year tank installed	Condition	Overfill protection	Is tank/container bunded?	Is bund shared with other tanks/containers?	Overfill protection measures in place.
Diesel Fuel Tank	External - Rear of site	Diesel Fuel	2,000	Stainless steel	2025	Good	No	No	No	By Procedure
Sugar silo 1-2	Internal bulk tank farm	Sugar	35,000	Stainless steel	2015	Good	By Procedure	Yes	Yes	By Procedure
Canola oil (huile raffinée de colza) silo 1	Internal bulk tank farm	Canola oil	32,000	Stainless steel	2025	Good	By Procedure	Yes	Yes	By Procedure
Canola oil (huile raffinée de colza) silo 2	Internal bulk tank farm	Canola oil	32,000	Stainless steel	2025	Good	By Procedure	Yes	Yes	By Procedure
Wheat & flour Silo 3-4	Internal bulk tank farm	Wheat & flour	35,000	Stainless steel	2015	Good	By Procedure	Yes	Yes	By Procedure
Wheat & flour Silo 5-6	Internal bulk tank farm	Wheat & flour	35,000	Stainless steel	2017	Good	By Procedure	Yes	Yes	By Procedure
Wheat & flour Silo 7-10	Internal bulk tank farm	Liquid chocolate	35,000	Stainless steel	2025	Good	By Procedure	Yes	Yes	By Procedure
Liquid chocolate silo	Internal bulk tank farm	Liquid chocolate	35,000	Stainless steel	2025	Good	By Procedure	Yes	Yes	By Procedure

5.3 Management Systems

The site has an Environment Management System which incorporates the following:

- Documented Environmental Policy setting out the businesses vision and values in relation to environmental management.
- A documented Aspects Register identifying all activities on site with an assessment of environmental impact.
- A Climate Change Risk Assessment and Adaptation Plan
- Documented structure and responsibilities for environmental management within the system manual and procedures.
- Identification of all applicable environmental legal requirements and the compliance status of the business.
- Documented operating procedures for environmental operations that may have an adverse impact on the environment.
- A planned preventative maintenance regime and routine inspections of key plant and equipment.
- Routine documented monitoring of key parameters including effluent discharge, energy and water use, waste arisings and raw materials use.
- Training programmes to ensure all staff and contractors are suitably inducted and trained in relevant environmental procedures.
- Procedures for the investigation of any potential complaints.
- Contingency plans to be used in the event of breakdowns of key plant and equipment or unplanned events such as extreme weather.
- An accident plan is present on site which includes any emergency procedures for environmental matters e.g. spillage.
- Regular review of environmental performance by the management team against set KPI's and improvement targets.
- Procedures are in place for all key operations including receipt and processing of raw materials.
- Audits of compliance against relevant procedures and all legal requirements are carried out periodically.
- Non-conformances are documented and appropriate corrective and preventive actions are taken.
- Records are kept demonstrating compliance with applicable legislation, as well as other relevant records including training, monitoring and maintenance.
- Documented procedures for change management including assessment of potential environmental impacts of any planned changes to the site.

5.4 BAT Assessment

A full summary of BAT requirements from Food, Drink and Milk Industries BREF, 2018 can be found in Appendix D.

5.5 Accident Management Plan

Table 9: Accident Management Plan

Incident/Abnormal Circumstance	Likelihood	Consequence	Prevention Measures	Mitigation Measures
Equipment breakdowns	Medium	Oven/refrigeration plant malfunction – inability to operate process.	Planned Preventative Maintenance of all equipment; condition-based monitoring. Service contracts for ovens, refrigeration plant, compressors, HVAC.	Service contracts/agreed response times in place for ovens, refrigeration plant, compressors, HVAC.
Tank Farm - bulk vessel overfilling	Low	Spillage of raw materials from vessel with potential to enter surface water course.	Tank level checking prior to off-loading. Tank high level alarms; containment offered by internal bunded tank farm.	Internal tank farm, bunding, spill kits; spill procedures, surface water drainage isolation.
Spillage during tanker loading/ offloading	Low	Spillage of raw materials (ingredients and or/ chemicals). Risk for liquid inventory to reach surface water or foul drainage	Operators trained in delivery procedures. Site vehicle management e.g. speed limits, designated routes	Spill kits & procedures. If catastrophic spillage occurs from tanker slam shut valve on surface water discharge to provide tertiary containment.
Spill from IBC, container or drum	Low	Spillage of liquid/ food waste with potential to enter surface water course.	All IBC's, containers, drums are stored internally, some on individual bunds. Likelihood of escape to drainage is remote.	Internal storage, bunding, spill kits & procedures
Fire	Medium	Emission of smoke/dust to air	Site fire risk assessment, fire detection systems, Planned Preventative Maintenance of all equipment, site permit to work system (hot works)	Fire response plan;
Contaminated Firewater	Low	Release of contaminated water to sewer/surface water/ground	Site fire risk assessment, Planned Preventative Maintenance of all equipment, site permit to work system (hot works)	Slam shut valve on surface water drainage – contaminated water to be pumped out via tanker. No measure on foul drainage – notification to Anglian Water of incident.
Release of out of specification effluent	Low	Potential impact at WWTW Breach of effluent consent	Planned Preventative Maintenance of all equipment; condition-based monitoring. Specialist service contracts in place.	No measure on foul drainage – notification to Anglian Water of incident.

Blocked Drains	Low	Odour nuisance	Planned Preventative Maintenance of drainage system;	Contractor call-out
Flooding	Low – site is not within a flood zone. There are no records to show the site has ever flooded.	Mobilisation of pollutants on site with potential to migrate to drainage system/ ground.	Dedicated internal storage areas; secondary and tertiary containment measures.	Crisis Manual, isolation of utilities, lock off all vessel valves
Vandalism	Low	Spills/litter/damage to property/nuisance	24-hour site security; CCTV; full perimeter fencing	Crisis Manual, Spill procedures
Extreme weather event	Low/Medium	Suppliers unable to deliver, workforce unable to get to work;	Risk Register and Crisis Manual for response to loss of suppliers, localised workforce.	Risk Register and Crisis Manual for response to loss of suppliers or difficulties with workforce getting to work.

6 Monitoring

6.1 Describe the measures you use for monitoring emissions

Routine environmental monitoring is undertaken on a regular basis. Training is provided to operators who conduct the daily site walkovers to ensure that all sensitive environmental infrastructure is checked, including for potential dark smoke emissions, surface water discharges and waste management. As part of the EMS, the site undertakes at least annual audits which cover a number of different areas including waste and emergency procedures such as spill response. Although the EMS is not accredited, it has been developed in accordance with the ISO14001 standard. In addition to environmental monitoring, there is a routine inspection programme of all relevant infrastructure managed by Engineering PPMs.

The sites Anglian Water consent to discharge contains a number of concentration limits on constituents including chemical oxygen demand, fats, oils and grease, and suspended solids, as well as a volume limit on all effluent being discharged from the site. The site does not have active monitoring of their discharge, however occasional testing of the final discharge is undertaken, and results have never shown a breach in any of the consented limits.

As the site operates natural gas-powered direct fire ovens for the process heat, there are no medium combustion plants located within the facility. The site operates strictly to controls in place for the safe and efficient operation of the ovens, which are treated as environmentally critical infrastructure and subject to planned inspection, maintenance and calibration in line with the supplier's recommendations.

Oven emissions are not subject to extractive testing for compliance; however, a monitoring exercise was undertaken on the ovens ahead of the permit application to determine the emission concentrations and a dispersion profile for the site. The MCERTS accredited testing showed that stack emissions of both carbon monoxide and oxides of nitrogen (monitored to the EN15058:2017 and EN14792:2017 standards respectively) had low overall concentrations of the gases in the air releases. Following these results, the dispersion rates were modelled using a detailed air dispersion model, which can be seen in Appendix F, this showed that based on the measured emissions profile and maximum potential loading of oven capabilities on site, that rates of dispersion can be considered not significant to all sensitive receptors in the surrounding area.

6.2 Point source emissions to air only

As above.

7 Environmental Impact Assessment

7.1 Have your proposals been the subject of an EIA under Council Directive 85/337/EEC?

No

8 Resource Efficiency and Climate Change

Utility use is reviewed daily and progress against targets is assessed on a period basis both on site and corporately via utility and efficiency forums. Energy consumption is reviewed weekly alongside other key performance metrics and can be visualised via various dashboards which are available to relevant site personnel. These and other systems are also used by site team to monitor energy and other utility meters on site.

The corporate targeting setting and KPI reporting requirements define how energy is reported and tracked against a benchmark SEC across the business. KPI and utility budgets are set annually in consultation with Group, and the Continuous Improvement governance process provides the framework for the identification and delivery of specific improvement measures. The site maintains records of completed, ongoing, and planned energy efficiency improvement projects. These opportunities and progress are

reviewed monthly. Periodic energy/sustainability surveys have been completed at site which contribute to the opportunities database.

Continuous improvement in energy efficiency is embedded within all onsite activities and fundamental to the monitoring and targeting of site utility performance, the sites EMS demonstrates the weekly, monthly and annual review of utilities and KPI's that are undertaken between the responsible persons on site. The site encompasses all applicable techniques identified in BATc 6 alongside others in cooperation with specialist utility champions within the business (See Appendix D).

8.1 Electricity and Gas

Energy is supplied to the Installation in the form of electricity from the National Grid and natural gas. Energy usage at the site is subject to detailed monitoring and reporting to an automated monitoring system. The site has recently entered into a Climate Change Agreement (CCA) via their sector association, The Food & Drink Federation. Their Target Unit identifier is FDF1-T01187, energy efficiency targets will be monitored and reported in line with the CCA requirements on an annual basis.

8.2 Water

Water is mainly used for hygiene and other associated cleaning activities; water is not routinely used as a raw material or ingredient in any of the products made on site. Water is metered into the site and volume of discharge to sewer is monitored and reported on a period basis.

8.3 Ingredients

Raw materials/ingredients are selected on the basis of the recipe requirements; operator can minimise waste by ordering correct pack sizes and scheduling production to ensure all ingredients are utilised efficiently. The operator continually analyses the inventory levels of raw materials to ensure alignment with production planning and efficient use of ingredients. Any significant trending would be addressed through continual improvement projects. This in turn addresses behavioural improvements to ensure efficient production and reduction in waste, including unnecessary hygiene cleaning and keeping water and chemical usage on an 'as required' basis.

As described above, detailed SOPs and HACCP procedures are in place for every stage of the process and each piece of equipment to minimise losses and maximise product yield. Product loss is tracked against targets, and areas of high loss investigated.

No waste is disposed of to landfill. Where waste cannot be recycled it is disposed of via energy recovery.

9 Installations that include a combustion plant (excluding waste incinerators)

As stated above, as the site operates direct fire ovens - there are no medium combustion plants within the installation.

10 Environmental Risk Assessment

The following section addresses the potential impact of the proposed changes on the surrounding area.

10.1 Sensitive Receptors

The following sensitive receptors have been identified as being potentially affected by operations at the site. Statutory and non-statutory ecological receptors have been identified within a 10km radius, using magic.gov.uk. Human receptors immediately surrounding the site which may be sensitive to nuisance from odour or noise from the site have also been identified. These are also shown in Figures 2 and 3.

Table 10: Sensitive receptors

Sensitive Human Receptor Locations Receptor		**NGR (m)**		**Emission which may impact on the receptor and their relevant pathways**
		X	**Y**	
R1	*Residential – Bercham*	*482327*	*238949*	*Odour, Noise, Air Emissions*
R2	*Residential – Haldene*	*482243*	*239003*	
R3	*Residential – Haslow Court*	*482153*	*239065*	
R4	*Residential – Langton Drive*	*482086*	*239142*	
R5	*Residential – Pyke Hayes*	*482059*	*239238*	
R6	*Residential – Calvie Croft*	*481963*	*239661*	
R7	*Residential – Bradwell Abbey*	*482680*	*239445*	
Ecological Receptor Locations Receptor				
E1	*Oxley Mead SSSI*	*481895*	*234854*	*Air Emissions, (No direct connection via surface/ground water*
E2	*Howe Park Wood SSSI*	*483300*	*234400*	
E3	*Whittlewood Forest SSSI*	*472100*	*243000*	
E4	*Mill Crook SSSI*	*477300*	*246300*	

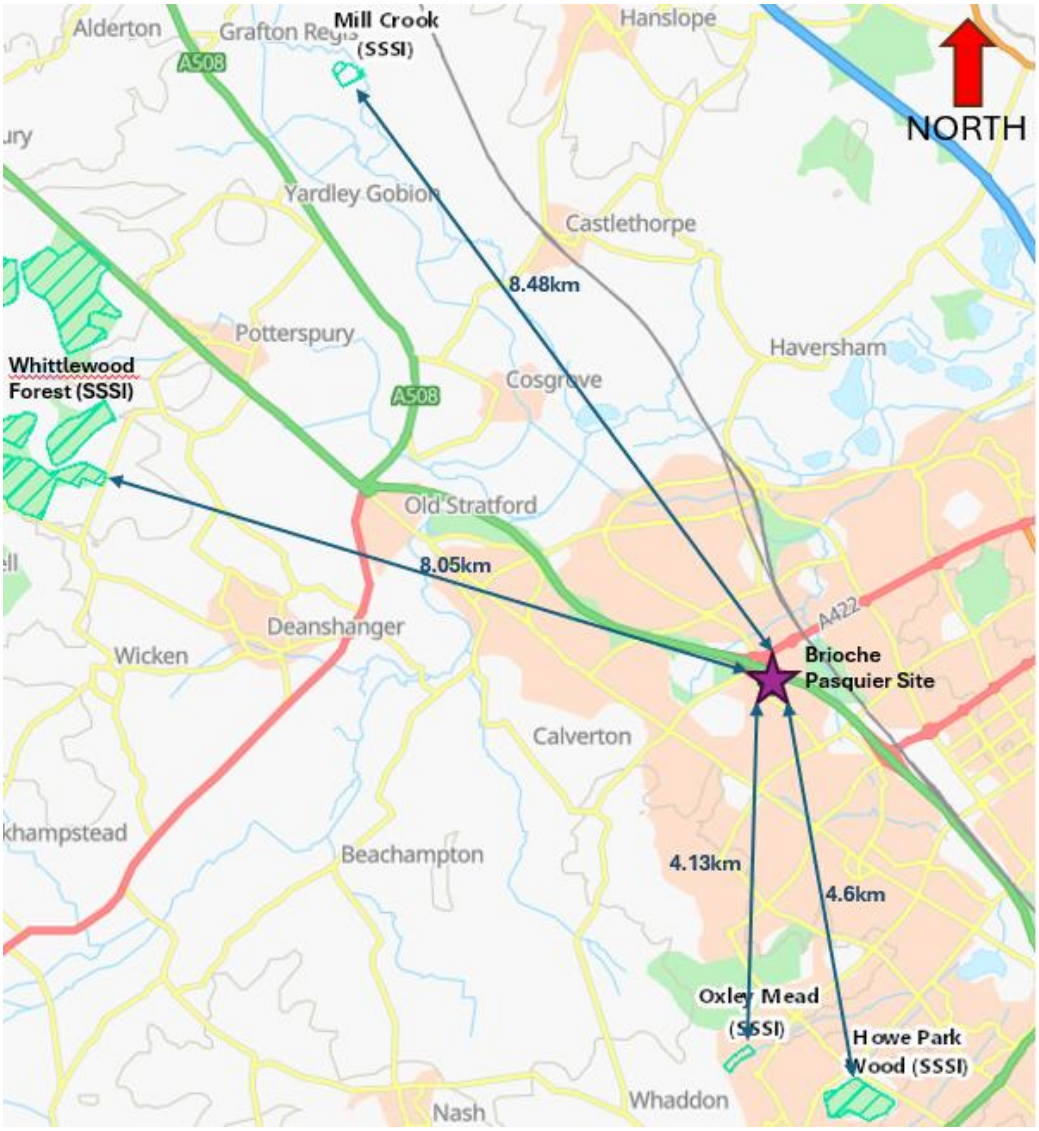


Figure 2: Sensitive environmental receptors

10.2 Impact of Emissions to Air

The principal emissions to atmosphere from the installation are identified in Table 2. This section presents the approach to the assessment of the impact of the emissions on the local receiving environment.

A H1 Assessment was undertaken to determine the impact of emissions of combustion gases from the installation. Emissions monitoring was carried out on the three process ovens plus the two new incoming ovens serving the additional lines. At full capacity, depending on production schedules and customer demand, the ovens may be required operate concurrently for up to 363 days a year. A blanket operational percentage of 100% was applied to all ovens for the assessment.

The emissions were not screened out for NOx when the background concentration is factored in, and emissions modelling was therefore required. Based on the above results, emissions modelling was commissioned, which can be seen in Appendix F.

Dispersion modelling of NOx emissions was undertaken using ADMS-6. Impacts at sensitive receptors were quantified and the results compared with the relevant Environmental Quality Standard (EQSs) and significance criteria. Predicted concentrations of all pollutants were below the relevant EQSs at all locations for all meteorological data sets modelled. Resultant impacts were classified as not significant. Impacts were also predicted at relevant ecological sites including acid deposition. The results indicated

that emissions from the plant were not predicted to significantly affect existing conditions at any designation.

The modelling results were based on a worst-case assessment scenario of the ovens constantly operating throughout an entire year. As such, predicted pollutant concentrations are likely to overestimate actual impacts. The report concludes that emissions are within guideline levels and will not have a significant impact on human or ecological receptors.

10.3 Point Source Emissions to Sewer, Surface Water and Groundwater

Sections 5.1.1. Fugitive Emissions and 5.5. Accident Management Plan have described the sites approach to managing the risk posed by storage of potential pollutants on the site. This is summarised in the risk assessment in Table 11. The operator has identified that the control measures in place across the site ensure that the risk posed by a major spillage is acceptable.

A Surface Water Risk Assessment was conducted to screen the persistence of potential pollutants to freshwater as a result of activities conducted at the site. Identified potential pollutants were all successfully screened out through qualitative assessment as there are no priority hazardous substances used at the site. As a result of this, the environmental risk to sewer and surface water is deemed to be low.

In terms of point source emissions to groundwater, the site is placed in an area of low-moderate environmental sensitivity, the nearest SSSI, Oxley Mead, is over 4km away and there are no RAMSAR sites or Local Nature Reserves within 10km of the site. The site does overly a Secondary A Aquifer, which increases the overall risk however based on the inherently low environmental risk posed by the site's activities and the mitigation measures in place, the overall risk is deemed to be low.

10.4 Odour

Processing buildings also operate air handling systems which vent from the building which have the potential to be odorous, in addition the delivery/ dispatch of raw materials and waste storage area are minor potential sources of odour on site.

The emphasis in the management of odour from the site is on prevention, and as such preventative maintenance, management, monitoring and inspection of all potential sources of odour are the main control measures. Whilst no odour complaints have been received at the installation the operator has in place and Odour Management Plan (OMP) that describes the likely sources of odour arising from processes at the facility, sets out the procedures followed at the site in order to prevent or minimise odour emissions during normal operating scenarios, the corrective actions and remedial measures utilised to prevent or minimise odour emissions during abnormal and emergency events, and details the procedures for dealing with any odour complaints. The OMP has been prepared with reference to Odour management: comply with your environmental permit (2025) and takes account of BAT 15 (Odour), in, Best Available Techniques (BAT) Reference Document for the Food, Drink and Milk Industries. Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control). Joint Research Centre, 2019. The OMP can be seen in Appendix B.

10.5 Noise

The design concept of the facility is a 'box in box' primarily for food hygiene reasons which also results in there being minimal noise break out potential. The internal, fully enclosed location of the production plant, refrigeration systems and storage areas ensure that the site related noise emissions are very low in the external yard areas. The main sources of noise likely to impact the local human receptors are from vehicle movements on and off-site including deliveries and product distribution which also give potential for noise during offloading and loading of raw materials and products. To mitigate this, the site restricts delivery hours to daylight hours only as much as reasonably possible, the procedures and SOPs around deliveries are also optimised to ensure maximum efficiency and minimal impact on the surrounding areas. The nearest human receptor is less than 100m away from the site boundary, however this space is filled with

trees and shrubbery which act as a buffer to any noise, there is also a busy road, the V5 Great Monks Street, from which will further buffer further noise emissions from the Site. Finally, since the sites operations began, they have not received any noise related complaints from residents in the area. Based on the inherent low risk posed by the sites operations to noise emissions, plus the operational measures in place it is determined that no additional measures are considered necessary. Should operational changes that impact the site occur, or a noise complaint is received, this will be investigated as deemed appropriate for the level of impact.

10.6 Environmental Risk Assessment

Table 11: Environmental Risk Assessment

Hazard	Receptor	Pathway	Risk Management Technique	Probability of Exposure	Consequence (Severity)	Overall Residual Risk
Emissions to air – Ovens	See Table 10	Air dispersion	Combustion plant burner controls	High	Low – low concentrations of CO and NO_x emissions measured.	Low - See Air Dispersion Model.
Emissions of trade effluent to sewer from discharge point S1	Cotton Valley Wastewater Treatment Works	Sewerage drainage system	Compliance with trade effluent discharge consent.	High	Low – compliant with consent	Low – site operates within existing consent levels. See Surface Water Risk Assessment
Odour – processing activity	See Table 10 – Human Receptors	Air dispersion	Odour Management Plan- Appendix B	Medium	Low	Low – controls in place adequate to minimise potential for odour nuisance complaints.
Odour – waste storage	See Table 10 – Human Receptors	Air dispersion	Covered/enclosed containers; regular uplifts – See Odour Management Plan	Medium	Low	Low – controls in place adequate to minimise potential for odour nuisance complaints.
Noise – processing activity	See Table 10 – Human Receptors	Airborne	PPM for all equipment. Housing for noisy equipment;	Medium	Low	Low – Noise rarely extends outside of site building. No complaints received.
Pests	See Table 10 – Human Receptors	Airborne; overground	Pest Control Programme	Medium	Low	Low – no complaints received.
Fugitive Emissions to Air – dust, litter etc.	See Table 10	Air dispersion	Yard inspections	Low – no dusty wastes	Low	Low – no complaints received.
Fugitive emissions to air – processing e.g. refrigerants	See Table 10	Air dispersion	Contracted maintenance programme.	Low - Potential for emissions during maintenance or in the event of a breakdown	Low – No impact	Low – records show no significant refrigerant losses.
Fugitive Emissions to surface water, sewer and groundwater – accidental minor leaks and spills – bulk oil tanks	Controlled water: River/ ground Waste: Cotton Valley Wastewater Treatment Works	Drainage system; overground flow;	Tanks internal; Tank integrity checks; High level alarms; Delivery procedures; Spill procedures and training;	Low – no records of reported non-conformances	Medium – minor impacts with no pollution occurring	Medium – minor leaks and spills routinely cleared up with no impact.

	Ecological area: Oxley Mead SSSI					
Fugitive Emissions to surface water, sewer and groundwater – accidental minor leaks and spills – hygiene Chemicals	Controlled water: River/ ground Waste: Cotton Valley Wastewater Treatment Works Ecological area: Oxley Mead SSSI	Drainage system; overground flow;	IBC storage on mobile bunds; Delivery procedures; Spill procedures;	Low – regular deliveries but no incidents reported	Low – minor impacts with no pollution occurring	Low – minor leaks and spills routinely cleared up with no impact.
Fugitive Emissions to surface water, sewer and groundwater – accidental minor leaks and spills – Waste storage	Controlled water: River/ ground Waste: Cotton Valley Wastewater Treatment Works Ecological area: Oxley Mead SSSI	Drainage system; overground flow;	Delivery procedures; Spill procedures;	Low – regular uplifts but no incidents reported	Low – minor impacts with no pollution occurring	Low – minor leaks and spills routinely cleared up with no impact.
Fugitive Emissions to surface water, sewer and groundwater – catastrophic failure – bulk tanks	Controlled water: River/ ground Waste: Cotton Valley Wastewater Treatment Works Ecological area: Oxley Mead SSSI	Drainage system; overground flow;	Tanks situated internally Tank integrity checks; Bunding and bund inspections; High level alarms; Delivery procedures; traffic management; Spill procedures and training;	Low	Low – even a catastrophic failure would result in a small amount of emissions to external areas/ drainage.	Low - risk considered unlikely due to mitigation measures in place by site.

11 Appendices

11.1 Appendix A – Site Plans

- Appendix A(i) - Installation Location and Boundary
- Appendix A(ii) – Air Emission Points
- Appendix A(iii) – Foul Water Drainage Plan
- Appendix A(iv) – Process Water Drainage Plan
- Appendix A(v) – Surface Water Drainage Plan

11.2 Appendix B – Odour Management Plan

11.3 Appendix C – Materials Inventory

11.4 Appendix D – BAT Assessment

11.5 Appendix E – Surface Water Risk Assessment

- Appendix E(i) – Surface Water Risk Assessment
- Appendix E(ii) – SWRA Tool – Compounds of Concern

11.6 Appendix F – Air Quality Assessment

- Appendix F(ii) – Air Quality Modelling Files

11.7 Appendix G – Site Condition Report

11.8 Appendix H – Relevant Persons