1 Non-Technical Summary

1.1 Introduction

Meals Central Spalding site is located on West Marsh Road in Spalding, Lincolnshire. The site is located across from the River Welland and has a dyke running at the back of the property. There are about 1700 employees across all shifts. The site is 24/7 with operational days at 364. The site supply various supermarkets (Tesco, Sainsburys, M&S, etc.) with soups, sauces, dips and wraps and produces 193 million units per year (2020 figures).

The Spalding facility operates three distinct factories, located across three separate buildings:

- Delicatessen – this is situated in Building A and products include wraps and pasta salads;
- Soups and Sauces – Situated in Building B and products include soups, sauces and custard;
- Cerberus – this is situated in Building G and products include single and multi-pack dips.

The facility is not currently permitted. Historically, a PPC permit application was made, in 2005, when the site was operated under the name of Geest Foods (Spalding). A permit was issued (reference XP3438SB) on 27 July 2005 however the operator then closed part of its facility, bringing the facility under the production capacity thresholds in the PPC Regulations. An application was therefore made to surrender the PPC permit and this was approved by surrender notice (ref. XP3438SB/2/1) dated 11th December 2006. Bakkavor Foods purchased the site in 2005. Production has increased over the years and the facility is once again capable of processing raw vegetable and animal materials within the capacity that requires an installation environmental permit.

Online pre-application advice was sought from the Environment Agency. A copy of the response document, and results of the habitat screening, are provided (doc references: BSPB202 Basic Pre-app response letter Bakkavor Foods Ltd and BSPB211 Habitat Screening Tool). A flood risk map has also been produced which shows that the site is located in Flood Zone 3 (doc reference: BSPB206j Flood Map).

1.2 Activities

The facility manufactures chilled food products. All of the food is chilled; there is no frozen food manufactured at the site.

An overview of site operations and activities can be found in document BSPB205i Site Layout.

The site used to operate Factory 1 for the processing of salads. Factory 1 shut in November 2020. Data that has been submitted as part of the permit application and as part of the H1 risk assessment and will include Factory 1 data (i.e. gas, electricity, water and raw material consumption for product).

1.4.1 Building A - Deli

Building A comprises a single storey, steel framed, brick building with an asbestos cement sheet roof. Two storey offices are present on the eastern side of the building and this includes a development kitchen. The product range comprises primarily ready to eat snack pot salads (e.g. pasta, cous cous), bulk containers for retail delicatessen counters, and wraps. The process involves working in both 'low care' and 'high care' environments, with the latter requiring stricter hygiene controls. High care is where the product is being mixed and prepared; low care applies once the product has been contained (e.g. lidded). The definitions relate to product safety.

All products, materials and equipment are washed as they pass into the high care environment. The fresh ingredients are washed in machines and then placed in cutting equipment that reduces their size. The prepared ingredients are then placed in a holding room pending use. The carbohydrate ingredients (rice, pasta, potato etc.) are weighed and cooked in a steam heated vessel. Once cooked, the ingredients are cooled quickly in a series of chilled water vessels. Other cooked ingredients (e.g. roasted peppers) are cooked in an oven and then cooled via blasting with chilled air. Any other ingredients such as spices are passed to the high care environment as required. Final preparation often involves the use of mayonnaise which is prepared in Building B and moved in either a food tanker or intermediate bulk container (IBC). All the prepared ingredients are placed in mixing areas and then either manually or automatically mixed. The finished product is placed in a chilled holding room prior to being filled into a variety of containers, again either manually or automatically depending on the product range. After filling, the containers are weight checked, run through a metal detector, and labelled. They are packed into a cardboard outer case, on to pallets, and then sent to the dispatch warehouse (Building F).

Water from the floors of Building A, and effluent from the ingredient washers, passes via underground drainage to sumps outside the building and from there it is pumped to the on-site effluent treatment plant (ETP). Solid waste is transferred to the waste compound.

Also refer to document reference BSPB205k Process Flow Chart Deli.

1.4.2 Building B –Soups and Sauces

Building B comprises a single storey, steel framed, brick building with a metal sheet roof. Two storey offices are present on the south-eastern side of the building. The building also houses a canteen, dry storage, analytical laboratories, and development kitchens. This building houses the manufacturing soups and sauces and it is also the location for the custard production plant.

Soups and sauces finished products are presented in a variety of packaging formats such as pots and ‘doy’ bags (flexible containers with a rigid base). The basic process outline in Soups is essentially the same as for the Deli. The filled containers are then priced, bulked and cased, chilled, and sent for dispatch to Building F. Wash water passes via underground drainage to sumps outside the building and from there it is pumped to the on-site effluent treatment plant (ETP). Solid waste is transferred to the waste compound.

Also refer to document reference: BSPB205l Process Flow Chart Soups and Sauces.

1.4.3 Buildings C, D, E and F

Building C historically housed World Wide Fruit, a fruit packing factory. This is no longer used for production processes and is instead used for the storage of incoming production raw materials. Research and development kitchens are also located in Building C.

Building D is used for offices, storage of redundant machinery, workshops, and part of it is rented to a print company (outside the permit boundary).

Building E historically housed Eden which used to produce dips. This is no longer used for production processes but instead houses offices, redundant machinery storage, and is used for the storage of incoming production raw materials and packaging.

Building F is the Spalding Distribution Centre (SDC). All produce is stored here pending dispatch off site. The SDC operates as a separate business and unit and is also used by other Bakkavor sites, where finished products are sent to the SDC to be temporarily stored and then dispatched to the end client.

These buildings have been included in the EP boundary (apart from the print company), however no production processes take place within them.

1.4.4 Building G – Cerberus

Building G comprises a single storey, steel framed warehouse with steel clad sides and roof.

The product range within this business is a variety of chilled mayonnaise based dips and salad dressing, produced in a range of packaging formats from single 200 g pots and multi-flavour selections. The process is entirely 'cold' therefore no cooking of ingredients takes place. Mayonnaise and other ingredients (spices and vegetables) are mixed and decanted into stainless steel containers and transported to any one of 4 filling lines. The filled containers are priced, bulked and cased, chilled and sent for dispatch to Building F. Wash water passes via underground drainage to sumps outside the building and from there it is pumped to the on-site effluent treatment plant (ETP). Solid waste is transferred to the waste compound.

Also refer to document reference BSPB205j Process Flow Chart Cerberus.

1.4.5 ETP

Wash water and cleaning water from inside the factory buildings passes to one of seven primary sumps and from there is pumped to the ETP. The effluent passes through a physical screen which separates the solids from it. These solids are collected in a trailer and are transferred off site for treatment at an aerobic digestion plant. The screened effluent is pumped to one of six above ground balance tanks located adjacent to the ETP building. The contents of these balance tanks are pumped into the ETP building and into the dissolved air flotation (DAF) plant. Within the DAF plant, a flocculent is added to separate the oils and fats from the liquid effluent. The resultant foamy material floats and is mechanically skimmed off and into a sludge storage tank. This sludge is removed from the site by an appropriate authorised waste contractor for anaerobic digestion. The treated liquid is discharged to a public foul sewer under a discharge consent with Anglian Water (doc ref: BSPB204 AW Discharge Consent). A drainage plan is also available which highlights the effluent drainage on site (doc ref: BSPB205g Site Drainage Plan – Effluent).

A process flow chart is also available for the ETP (doc ref: BSPB205m Process Flow for ETP)

The ETP has the capability of treating up to 2280m^3 per day (95m^3 an hour), but has never reached this volume and actually only processes 900m^3 a day (40 m^3 an hour).

Surface Water Run Off

Uncontaminated surface water is collected from around the site and discharged to Cemetery Drain, via the following routes:

- Surface water from Cerberus (Building G) is directed via a holding pond to the west, then discharged to the drain via point W3;
- Surface water from the majority of Building A and B is directed via the large lagoon in the western corner of the site, then discharged to the drain via point W4;
- Surface water from the majority of Building C, D and E is directed via a 3-stage oil/water interceptor located in the car park to the north of the site, then discharged to the drain at point W1;
- Surface water from Building F is directed straight to the drain via point W2.

No consents are required for the surface water discharges. The applicant does however regularly check the water held in the two lagoons for volume and any indication of contamination. Should possible contamination be evident, the discharge from either lagoon can be prevented through the use of manual shut-off valves. Contaminated contents can be pumped out and directed to the ETP for treatment.

Also refer to document reference: BSPB205e Site Drainage Plan - Surface Water.

1.4.6 Waste Compound

General waste, organic vegetable waste, cardboard, metal, plastic, fluorescent tubes, waste oil, waste ink, and other waste drums are stored in this area, in dedicated locations. The area is located on concrete hardstanding which drains to the ETP.

Cat 3 Animal by product is also stored in this area in large covered trailers.

Bailers are used on site for cardboard and plastic.

1.4.7 Clean in Place (CIP)

Following production, plant is cleaned via the CIP system. There are 3 CIP systems on site, 1 is located at Building G: Cerberus and 2 are located in Building B: Soups and Sauces. This process involves a cold rinse of water being pumped around the plant at high pressure, followed by a hot clean where detergents are used (a caustic solution). This is followed by a hot rinse and then a cold rinse. The filling lines are cleaned in this manner generally on a daily basis however the regularity and type of clean is dependent on the type of production runs, and whether hot flushes or cold flushes are required. Wastewater from the CIP process is passed to the ETP.

1.4.8 Storage of Chemicals and Oils on Site

Chemicals are stored in various locations across the site as follows:

- Main Chemical Stores
- Decant Store
- Cerberus Bulk Tanks
- Soups CIP Plant
- Mayo Plant CIP Room
- Deli
- ETP
- Refrigeration plants

A site plan identifies the location of where all the chemicals and oils are located on site (refer to doc reference: BSPB205h Storage of Chemicals and Oils Location Map). There is also an inventory of all chemicals and oils stored on site and their quantities (refer to document reference: BSPB207c Inventory of Chemicals and Oils Stored at Bakkavor Spalding).

1.4.9 F-Gas Compound

The F-Gas compound is located next to building C and is used by site for cooling and refrigeration processes. The site is under development and will be used by the rest of the Bakkavor Group. The volumes stores are subject to change, as refrigerant is being recovered and charged on an ongoing basis. Refer to Table 1 below:

Table 1: F-Gas Volumes Stored at Compound

	Type of F-Gas	Expected Storage Volume (Kgs)
1	R507	~5000
2	R404	~2200
3	R422	~90

4	R434	~900
5	R407A	~220
6	R407C	~100
7	R407F	~110
8	R410	~1
9	R417	1.5

1.4.10 Refrigeration

There are 5 ammonia plants on site for cooling and refrigeration of the product and are located in the following areas:

- F1 Cerberus
- F2 Deli Genium (Deli 1)
- F3 Deli Gra (Deli 2)
- F4 Mayo
- F5 SDC

The quantities of ammonia and glycol stored on site can be found in document reference: BSPB207c Inventory of Chemicals and Oils Stored at Bakkavor Spalding - Refrigeration). A schedule of refrigeration stock stored on site can also be found in document reference: BSPB212 Bakkavor Spalding Refrigerant Stock 21.04.21.

1.4.11 Emissions to Air

The following activities emit to atmosphere and their emission locations can be found in document reference: BSPB205c Emission Points.

- A1a & A1b – Gas fired production oven, located in Building A. This is used in the preparation/cooking of vegetable raw materials.
- A2, A3 and A4 – Gas fired hot water heaters, also located in Building A. These provide the hot water for welfare facilities (e.g. hand washing).
- A5 – Gas fired central heating boiler, for Building A offices.
- A7 and A8 – Gas fired central heating boilers for Building A offices.
- A9 – Emergency diesel generator, located at the rear of Building A.
- A10 – Gas fired space heater for Building B workshop.
- A11 - Emergency diesel generator, located at the rear of Building C. This building is within the EP boundary but although the generator is still connected it is not currently in use for production
- A12 and A13 – Gas fired central heating boilers in Building C.
- A14, A15, A16, A17, A18 and A19 – Gas fired space heaters within Building D.
- A20 – Emergency diesel generator at Building F
- A21 – Stack 1 from Gas Fired Steam Boiler No. 1
- A22 - Stack 2 from Gas Fired Steam Boiler No. 2
- A23 - Stack 3 from Gas Fired Steam Boiler No. 3

- A24 - Stack 4 from Gas Fired Steam Boilers No. 4 & 5
- A25 and A26 – NPD Ovens
- A27 - Domestic Cooker
- MEP 1 Cerberus MEK Plant
- MEP 2 Soups MEK Plant
- MEP 3 Deli MEK Plant

A21, A22, A23 and A24 all fall under the Medium Combustion Plant Directive (MCPD). A9 and A20 back up generators fall outside the scope of the MCPD as their MWth is 0.26 (refer to document reference: B2.502 Thermal Input Calculation for Standby Generators).

The MEK plants are used to clean inks off of the printing equipment.