Permitting decisions

Bespoke permit

We have decided to grant the permit for Greencore Food To Go Park Royal operated by Greencore Food To Go Limited.

The permit number is EPR/ZP3839YR.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- shows how we have considered the consultation responses.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

It is noted that the permit application is for a facility which has already been operating for a number of years, but has so far not had an environmental permit. The Effluent Treatment Plant is new. The fact that the site is already operational does not affect our permit determination process.

Key issues of the decision

1. **Air Quality**
2. **Water Quality**
3. **Accidental releases and protection of ground/ground water and surface water.**
4. **Odour**
5. **Impact on habitats sites**
6. **BAT assessment**

1. Air Quality

The installation has two natural gas fired boilers which provide steam and hot water for production. Boiler one ($0.7MW_{th}$) is located in the plant room in the North East section of Factory 1, Boiler Two ($0.8\ MW_{th}$) is located in the Effluent Treatment Plant area to the south east of factory one. Operation of these results in emissions of combustion gases, notably carbon monoxide and oxides of nitrogen (NO_X comprising of NO and NO_2, expressed as NO_2). No other air pollutant emission points are identified, although two odour emission points are identified – see "odour" section of this document.

The Applicant's assessment of the impact of air quality is set out in their Application. The assessment comprises:

- A screening assessment using the Environment Agency H1 screening tool of emissions to air from the operation of the boilers.
- Emissions monitoring data for each of the boilers
- A justification for nevertheless considering the emissions to be insignificant, based on the small size of the boilers
- Assessment of the impact of emissions on nearby sensitive habitat / conservation sites.

1.1 Comparison of Boiler Emissions with Emissions limits for similar processes

The applicant has provided MCERTs accredited emissions testing results for each of the boilers. Emissions of NO_2 and PM_{10} are shown in the table below, alongside typical emissions limits for similar plant. It should be noted that these limits do not directly apply to the boilers in question as they are only relevant to larger, higher impact boilers $>1MW_{th}$. They do however indicate the performance expected for similar plant and therefore represent Best Available Technique (BAT) for this type of plant. The emissions impact from the boilers is discussed below.

Substance	Boiler 1 Measured emissions	Boiler 2 Measured emissions	MCPD Limit[1] $1\text{-}5MW_{th}$ (existing plant)	MCPD Limit[1] $1\text{-}5MW_{th}$ (new plant)
Carbon monoxide (CO)	5	7	No limit	No limit
Nitrogen dioxide (NO_2)	160	172	250 mg/Nm^3	100 mg/Nm^3
Note 1 MCPD does not apply to small plant $<1MW_{th}$. The "new plant" limits apply to sources $>1MW_{Th}$ commissioned after 28th December 2018.				

1.2 Application of Environment Agency guidance 'risk assessments for your environmental permit'

A methodology for risk assessment of point source emissions to air, which we use to assess the risk of applications we receive for permits, is set out in our guidance 'Air emissions risk assessment for your environmental permit' and has the following steps:

- Describe emissions and receptors
- Calculate process contributions using simple screening tool (H1) based on dispersion factors
- Screen out insignificant emissions that do not warrant further investigation
- Decide if detailed air modelling is needed
- Assess emissions against relevant standards
- Summarise the effects of emissions

The methodology uses a concept of "process contribution (PC)", which is the estimated concentration of emitted substances after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest. The H1 methodology provides a simple method of calculating PC primarily for screening purposes and for estimating process contributions where environmental consequences are

relatively low. It is based on using dispersion factors. These factors assume worst case dispersion conditions with no allowance made for thermal or momentum plume rise and so the process contributions calculated are likely to be an overestimate of the actual maximum concentrations.

Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES). ES are described in our web guide 'Air emissions risk assessment for your environmental permit'. ES for carbon monoxide and oxides of nitrogen are established in the Ambient Air Directive as Limit Values, which must not be exceeded. The relevant limits for the protection of human health are as follows:

Substance	**ES (long term, annual average)**	**ES (short term)**
Carbon monoxide (CO)	-	10 mg/m^3 Note 1
Nitrogen dioxide (NO_2)	40 µg/m^3	200 µg/m^3 (hourly average)
Note 1 8 hour running average across a 24 hour period		

PCs are screened out as **insignificant** if:

- the **long-term** process contribution is less than **1%** of the relevant ES; and
- the **short-term** process contribution is less than **10%** of the relevant ES.

The **long term** 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality;
- The threshold provides a substantial safety margin to protect health and the environment.

The **short term** 10% process contribution insignificance threshold is based on the judgements that:

- spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions;
- the threshold provides a substantial safety margin to protect health and the environment.

However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

For those pollutants which do not screen out as insignificant using the H1 tool, we determine whether exceedances of the relevant ES are likely. This is done by adding the PC to the background concentration of each pollutant, to give a predicted environmental concentration (PEC).

Emissions are screened out in the H1 tool as not requiring further assessment if PECs based on background pollution and PC from the proposed facility:

- the **long-term** PEC is less than 70% of the long-term ES; and
- the **short-term** PC is less than 20% of (the short-term environmental standard minus twice the long-term background concentration), which is known as the "headspace".

This is not the end of the risk assessment, because we also take into account local factors (for example, particularly sensitive nearby receptors). These additional factors may also lead us to include more stringent conditions than BAT (Best available technique).

On the basis of H1 screening, the emissions from the proposed facility did not screen out as insignificant, nor as not requiring further assessment. The results of H1 screening are as shown in the table below, with figures in bold indicating exceedance of screening threshold:

Pollutant	ES		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)		% of headspace (EAL – 2 x long term background)
	µg/m^3		µg/m^3	µg/m^3	% of EAL	µg/m^3	% of EAL	%
NO_2	40	Note 1	32.05	3.38	**8.44**	35.5	**88.6**	-
	200	Note 2	32.05 Note 4	89.0	**44.5**	153.1	76.55	**65.5**
CO	10,000	Note 3	-	3.27	0.0327	-	-	-

Notes:

1: Annual mean

2: 99.79th %ile of 1-hour means

3: Maximum daily running 8-hour mean

4: Short term background is taken to be twice the long-term average background

As shown, emissions of Carbon Monoxide (CO) screen out as insignificant as they are less than 1% of the ES. We have therefore not carried out any further assessment on this pollutant. However, both short term and long term NO_2 emissions cannot be screened out, as relevant PC, PEC and Headspace screening thresholds are exceeded. However, as noted above, H1 assumes worst case dispersion conditions and is therefore a conservative estimate of potential impacts. More detailed assessment can provide additional information to indicate that actual impact is lower.

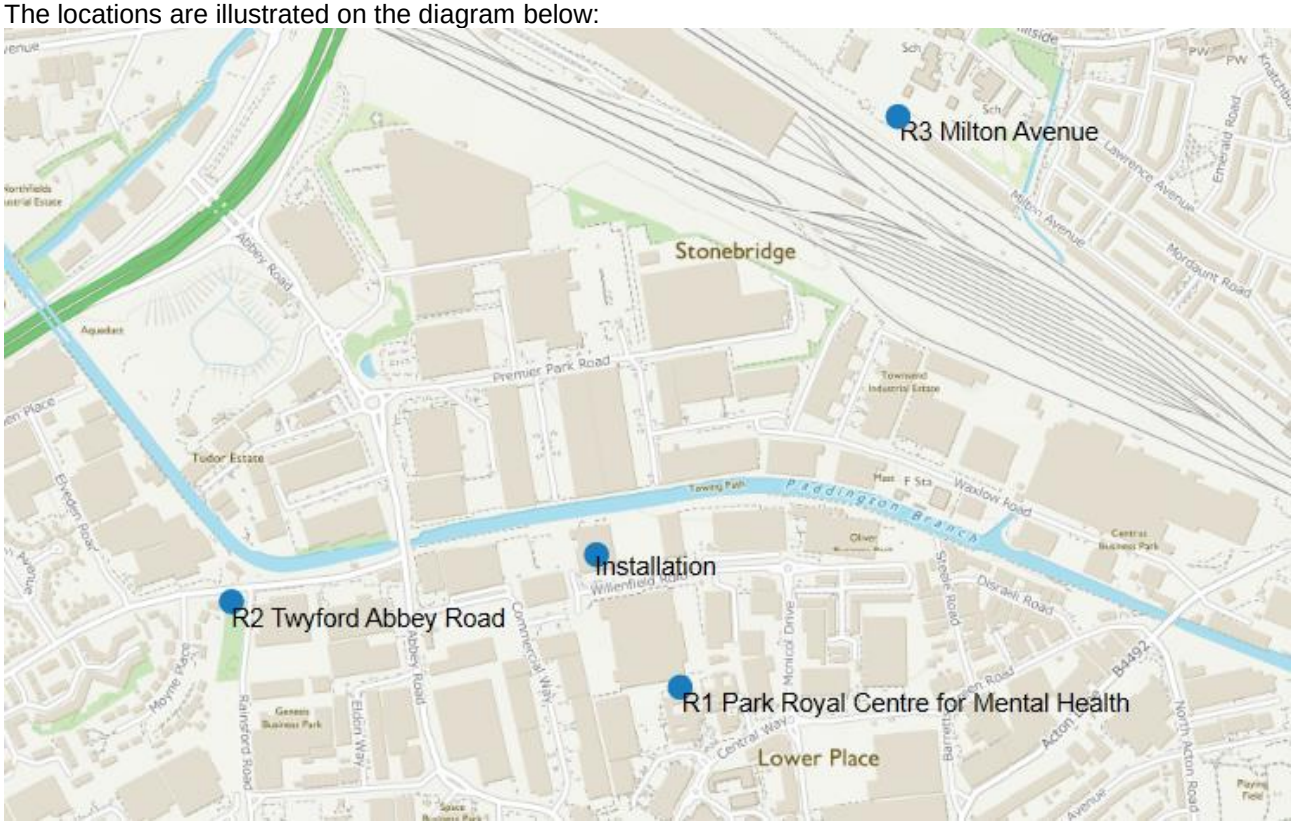
1.3 Basic Dispersion Modelling of Boiler Emissions

The Air Quality Monitoring and Assessment Unit (AQMAU) screening tool was used to assess the impact of nitrogen dioxide (NO_2) emissions from the boiler units. This modelling predicts the potential effects on local air quality from the proposed installation's stack emissions using simple dispersion models, as a secondary level of screening, which is less complex than full dispersion modelling but less conservative than the H1 screening assessment.

The closest human health receptors are as shown (residential or similar):

Receptor	Distance to installation
Park Royal Centre for Mental Health	160m
Twyford Abbey Road / Moyne Place (residential)	448m
Milton Avenue	565m

The locations are illustrated on the diagram below:



The modelling predictions at the most impacted human receptor in the modelled area are summarised in the table below for NO_2.

Pollutant	**ES**		**Back-ground**	**Process Contribution (PC)**		**Predicted Environmental Concentration (PEC)**		**Most impacted receptor**
	µg/m^3		µg/m^3	µg/m^3	% of EAL	µg/m^3	% of EAL	
NO_2	40	1	32.05	0.31	0.78	-	-	Park Royal Centre for Mental Health
	200	2	64.1 [4]	7.3	3.65	-	-	Park Royal Centre for Mental Health

Notes:

1: Annual mean

2: 99.79th %ile of 1-hour means

3: Maximum daily running 8-hour mean

4: Short term background is taken to be twice the long-term average background

(i) Screening out emissions which are insignificant

From the tables above the following emissions can be screened out as insignificant in that the process contribution is < 1% of the long term ES and <10% of the short term ES at sensitive receptors. These are:

- NO_2

Therefore we consider the Applicant's proposals for preventing and minimising the emissions of these substances to be BAT for the Installation.

1.4 Consideration of Local Factors

(i) Impact on Air Quality Management Areas (AQMAs)

The London Borough of Brent Council has declared an Air Quality Management Area (AQMA) with respect to NO_2 annual mean, and PM_{10} 24 hour mean. The AQMA covers the entire borough, and the proposed installation is therefore located with the AQMA. The borough is surrounded by other London boroughs, including Ealing, which also have AQMAs for NO_2 annual mean, and PM_{10} 24 hour mean, and which could be impacted by emissions from the proposed facility.

As above, we have concluded that the predicted impact at sensitive receptors within the AQMA will be insignificant. The maximum ground level concentration was predicted on the site itself at 11% of the long term ES, however, this will have reduced significantly outside of the site boundary and immediate surrounding industrial buildings. The site is on away from main roads, traffic being the primary contribution to NO_2 in this AQMA. We therefore consider that this site is unlikely to have a significant impact on the AQMA.

The AQMAs have also been declared for PM_{10} daily mean. No data is shown for PM_{10} as there are no significant emissions of PM_{10} identified for the proposed facility.

1.5 Conclusions

From our simple dispersion modelling, all emissions screen out as insignificant, either at all locations, or at sensitive receptors. There are no predicted exceedances of ES (including in AQMAs) on the basis of conservative modelling assumptions, and furthermore there remains some "headspace" between predicted pollutant concentrations and AQS limits, meaning that limits are unlikely to be exceeded, even if there is some variability in actual dispersion from simple predictions. On this basis, we have accepted the applicants proposed emissions, in granting the environmental permit.

While emissions are insignificant, as the facility lies within an AQMA in the Greater London area, we have included a requirement for the operator to report process monitoring emissions data from the boilers at least annually, in order to demonstrate that performance in terms of NO_X and CO emissions does not change over time.

2. Water Quality

Process effluent from factory 1 is collected via a drainage system from all production areas, and sent to an on-site effluent treatment plant, which comprises of oversize solids screening, flocculation and dissolved air flotation, and final pH adjustment. There is a balance tank which holds over 8h of effluent production, enabling homogenisation of effluent, and recirculation of effluent in case of treatment malfunction. The tank has an aeration pump to prevent aerobic conditions, linked to an alarm which would actuate in the event of pump failure. Final Effluent (up to 15m^3/hour, 225m^3/day) is discharged to sewer, which is received at Thames Water's Beckton Sewage Treatment Works (STW) under a trade effluent consent, and ultimately discharged to surface water (the Thames). Surface water quality is protected by both the basic secondary effluent treatment described on site, and by the sewerage undertaker's waste water treatment plant. This arrangement is considered BAT, as described in our EPR 6.10 guidance. There is no production or cleaning discharge from factory 2, which is used for storage only.

The applicant has provided a preliminary impact assessment of this discharge in accordance with our Surface Water Pollution Risk Assessment guidance. They have used the Environment Agency's H1 screening tool, and provided information on their discharges to water (trade effluent consent, chemicals used at the facility, Materials Safety Data Sheets, calculation of mercury and cadmium contribution from cleaning chemicals. Analysis / measurement data from monitoring the effluent discharge was not provided. As the H1 assessment submitted did not contain all of the information that we required for water impact, we have refined the input to the H1 model, in agreement with the operator, using information provided by them, to produce a conservative estimate of impacts from the facility.

We have reviewed the potential impact of effluent emissions to water from the installation, via the sewerage system and 3rd party effluent treatment. Specifically, we have considered the potential for emission of hazardous pollutants mercury and cadmium, and of phosphate. Cadmium and mercury were historically recognised as contaminants in bulk chemicals often used in the food and drink industry; cadmium in some phosphates used in many detergents, and mercury in caustic soda (when produced by the mercury cell method). The applicant has provided raw material data showing that only low-mercury caustic is used, and there is no evidence of trace cadmium levels in detergents. Phosphate is a common component of detergents frequently used for cleaning in the food and drink industry, and contributes to eutrophication and reduction in water quality. The site chemical inventory lists a cleaning product based on phosphoric acid, which is a source of phosphate (and as noted in the MSDS provided by the applicant), and other cleaning materials containing lower phosphate and phosphonate levels.

We have assessed the potential impact of the Hazardous Pollutants cadmium and mercury (as listed in our guidance) which the operator has determined via chemicals inventory to be present or potentially present in the discharge. The Hazardous Pollutants were assessed against a series of screening tests to determine whether the discharge was "liable to cause pollution" of the receiving water downstream of Beckton STW. This enabled the Agency to confirm whether any substance was potentially significant and required detailed modelling to determine if setting emission limit values (ELV's) was necessary. Our freshwater screening tests 1 and 2 are summarised below. Further tests are not required in this case:

Test 1 checks whether the concentration of the substance in the discharge is greater than 10% of the environmental quality standard (EQS). If it's less than 10% of the EQS then the substance isn't a risk to the environment and no further assessment is required, i.e. the substance is screened out. If it's more than 10% of the EQS then the test is failed and the assessment proceeds to test 2.

Test 2 introduces the dilution available in the receiving water, using river flow data and the daily discharge volume of the effluent. The test checks whether the process contribution (PC) of the substance is greater than 4% of the EQS. The PC is the concentration of a discharged substance in the receiving water after it's been diluted. If the PC is less than 4% of the EQS then the substance isn't a risk to the environment and no further assessment is required. If the PC is more than 4% of the EQS then the test is failed and the assessment proceeds to test 3.

The results of the H1 assessment are shown in Table 1 below.

Hazardous Pollutant	**EQS** LONG TERM / SHORT TERM (LT / ST)	**Test 1**		**Test 2**	
		Effluent conc > 10% EQS?		**PC > 4% EQS** note1**?**	
	µg/l	**µg/l**	**% of EQS**	**PC µg/l**	**% of EQS**
Cadmium	0.07 LT	0.004	5.8	-	-
	0.44 ST	0.004	0.91	-	
Mercury	None LT.	-	-	-	-
	0.070 ST	0.09	**129**	0.00	0.071

Note 1. The Q95 dilution flow rate used was 7.56 m3/s, a flow based on the Thames at Kingston. This is significantly upstream of Beckton STW. Any other dilution contribution from incoming tributaries, or estuarine effects, have been ignored. Furthermore, the dilution effect of other effluents incoming to the Beckton STW are ignored. The estimate is therefore conservative.

The results above show that all emissions of cadmium pass test 1, but emissions of mercury fail test 1 as the concentration in the effluent is greater than the respective EQS. Mercury then screens out at test 2 as the short term PC's are less than 4% of the EQS. There is no long term limit for mercury. As all pollutants screened out by test 2, tests 3 and 4 were not required, and no pollutants were found to be potentially significant. Therefore detailed modelling or setting of emission limit values was not necessary.

Phosphate emissions are not assessed within the H1 modelling tool. We have undertaken simple dilution calculations of the phosphate-containing chemicals within the installation's discharge. Given the small volume of phosphate-containing chemical used, the average contribution of phosphate in the installation's wastewater from the chemical was 14 µg/L, compared to a typical concentration of phosphate in mains water of 1 mg/L, and higher concentrations in sewage. We have concluded that the load input of P from this discharge will be very small compared to all the domestic and trade inputs that go to the sewage works, with

the majority coming from mains water used. As there is not a significant contribution, specific controls are not required.

A trade effluent consent permits the process effluent discharge from factory 1, and was provided during the permit application process. The following limits are imposed by the sewage undertaker:

Parameter	Units	Quantity
Flow	m^3/day	225
Flow	m^3/hour	15
Temperature (max)	°C	43.3
pH (maximum)	pH units	11
pH (minimum)	pH units	6
Settleable Solids (SS)	mg/l	1000
Chemical oxygen demand (CoD)	mg/l	3000
Saponified oil or grease	mg/l	300
Unsapoinified oil or grease	mg/l	50
Sulphide	mg/l	1
Ammoniacal Nitrogen	mg/l	35
Sulphate	mg/l	1800
Available Chlorine	mg/l	50
Rapidly settleable Solids	mg/l	100
Phosphate (as P)	mg/l	8
Prohibited substances (banned)	Petroleum spirit, calcium carbide, thiourea and derivatives, non-biodegradable detergents	
Prohibited substances (not to be present at greater than background concentration)	As listed in Schedule 1 of the Trade Effluents (Prescribed Processes and Substances) Regulations 1989, and including mercury and cadmium.	

Uncontaminated surface water is discharged to surface water drains from factory 1 and factory 2, from roof and operational yard areas. Both factories discharge sanitary effluent from amenity areas of the factory, but this is not subject to permitting.

We are satisfied that the proposed emissions from the site will not cause significant pollution. With increasingly stringent regulation, levels of mercury and cadmium in bulk chemicals has decreased in recent

years, as chemical manufacturing techniques have developed. The burden to further reduce mercury and cadmium levels is via the supply chain (regulation of the chemical manufacturers), not via limits on specific end-users. The total phosphate burden from proposed cleaning products is insignificant compared with background phosphate concentrations. Other discharge parameters (e.g. pH, temperature, SS, CoD) are all within a range which should be suitable for treatment at the Beckton ETP.

We are therefore satisfied that the limits placed on the operator via the effluent discharge consent provide sufficient protection of the environment. It is our standard practice not to duplicate the regulation of the trade effluent consent. We do not need to impose further controls on substances subject to limits in the trade effluent consent (either on emissions or raw materials), or impose limits for any substances not listed in the trade effluent consent.

3. Accidental releases and protection of ground/ground water and surface water.

3.1 Production and storage areas surfacing and drainage

All production areas of the installation in Factory have sealed concrete surfaces, and drainage which discharges via the on-site effluent treatment plant to foul sewer. Areas of factory 2 used only for storage have sealed concrete surfaces, and drains in the area discharge to surface water without treatment. Mainly dry goods are stored in this area, with the most "liquid" ingredient being mayonnaise, which is therefore classed as relatively low risk. There is no wet cleaning carried out at factory 2, any debris is dry cleaned and therefore there is no waste water. External areas around factory 1 and factory 2 drain to surface water, without any treatment. Chemicals will be delivered via the yard areas, but are stored in designated bunded areas (see below). Factory 1 surface water drainage is protected by an emergency isolation valve, which could be used to contain emission in the event of emergency, but there is no such protection at factory 2. Therefore, the highest risk areas of the facility used directly for production have sealed surfaces, and drainage is routed to effluent treatment and sewer. Only uncontaminated rain water should be discharged to surface water drains, and there are engineered emergency protections in place for surface water drainage from factory 1.

3.2 Effluent treatment plant

Treatment process

As described above, site effluent is treated by an on site dissolved air floatation effluent treatment plant and is then discharged to sewer. Discharged water is received at Thames Water's Beckton Sewage Treatment Works (STW) under a trade effluent consent, and ultimately discharged to surface water (the Thames). Surface water quality is protected by both the basic secondary effluent treatment described on site, and by the sewerage undertaker's waste water treatment plant. In normal operation, there are no process water emissions direct to surface water.

Containment

The effluent treatment plant has a secondary containment system. There are two main areas, one contains the balance tank and sludge tank, and the other contains the rest of the ETP processing activity and incorporates some bulk chemical storage tanks. Stored chemicals are used both for the ETP and elsewhere in the factory (see below). Rather than being sealed bunds, drains in the area feed back to the ETP input. Secondary containment is provided for the balance tank and sludge tank by 900 mm bunding walls in the immediate area, with screening intended to divert jetting leaks. The remaining ETP including chemical storage area has 300mm wall bunding, and drainage which leads back to the ETP inlet sump. The exact volumes of the local containment systems bunds have not been stated (as they would normally drain), but

further containment volume is provided by an automated isolation valve system which seals the surface water discharge from factory 1, and uses the drains and yard outside factory 1 for additional emergency capacity. This provides 85m^3 of containment, which is >110% of the largest tank (balance tank, 70m^3), and provides containment provision in the event of fire (and associated firefighting water, combined with a 1 in 10 year storm). The surface water isolation valve can be actuated by an electronic push button near the effluent plant or via text message. Work is being completed to up-rate infrastructure in the yard area to ensure that this additional containment effective. By the measures described, the system has been designed with the intention of minimising the risk of uncontrolled discharges to sewer or surface water.

However, inspection by the Environment Agency local regulatory officer has identified some concerns about the actual operation of the system as a whole, and whether it would function to design intent. These include the possibility that jetting leaks reaching the deflection screens could drain outside of the bund, that drains have not been pressure tested for integrity, and that with the interconnected drainage of the bunds, it was not clear whether containment would be effective if the balance tank failed. Some other drains were identified in the nearby area (potentially surface water), which may not be appropriate given the containment plan. We have therefore included an improvement condition requiring the operator to review the effectiveness of the ETP containment design, addressing the points above, and to propose a timetable for suitable improvements where required, for approval by the Environment Agency.

3.3 External yard areas activity, containment and drainage

The external areas of factory 1 (except the ETP, see above) are all surfaced with concrete, and are intended to drain uncontaminated rainwater to surface water drains without treatment. There is significant production-related activity in the area: There is a dedicated, locked chemical store in the area, which has an integral bund. There are covered skips for food, general waste and cardboard, and waste compactors utilising hydraulic oil. Delivery vehicles and mobile plant also operate in the area. Uncontaminated surface water from factory 1 is routed via the effluent treatment plant and an isolation-valve. As described above, this valve and its operation forms part of the site emergency plan, and its main function is to isolate the surface water drains to allow the yard to be used for effluent containment, in the event of major process failure or fire, leading to large volumes of firefighting water. However this also means that the factory 1 surface water drainage could be isolated in the event of contamination in the factory 1 yard which would otherwise drain to surface water.

The external areas of factory 2 comprise mainly of car parking, with some yard storage and grassed areas. There is one general waste skip which is for activity that is not part of the regulated facility. The remainder of the yard is used by factory 1 for parking and storing low-risk waste pallets and waste baled cardboard, and mobile plant operate in the area. Surface water from all areas of factory 2 (inside and outside) is discharged direct to surface water. There appear to be potentially redundant drains within the internal storage area of Factory 2. There is no engineered isolation mechanism for the factory 2 drainage, beyond spill kits.

Neither yard drainage for factory 1 or factory 2 have oil interceptors fitted, which is a normal provision for areas of this type with environmental permits, where we expect that “any rainfall collection systems are kept separate from areas of the site which are or may be contaminated”. Yards containing vehicles and waste skips (including oil-containing hydraulic compactors) would fall into the category of areas which “may be contaminated”.

The installation’s environmental management system contains procedures for dealing with spillages, and there are spill kits situated at strategic points on the site. The site is operated 24/7 so a response to an incident would be available at any time.

While it is normal practice for uncontaminated rainwater to drain to surface water, the presence of operational activities (vehicles, plant, chemicals storage and waste storage) in yard areas of factory 1 and 2, and inside factory 2 (materials storage) increase the risk of contamination of surface water. This water is discharged without treatment, and poses a risk in the event of incident or emergency. Inspection by the Environment Agency local regulatory officer has identified some routine practices (e.g. power washing of external yard surfaces) which are likely to result in discharge of materials other than uncontaminated surface water. We have therefore imposed an improvement condition requiring further information and identification of suitable improvement measures, for the yards of factory 1 and 2, and the storage area inside factory 1. We anticipate that such measures could include oil interceptors for factory 1 and 2 surface water, increased detection / manual actuation points for factory 1 surface water isolation system, emergency isolation for factory 2 yard, sealing off of apparently redundant drains in factory 2, additional monitoring activity, and/or diversion of water from some areas to trade effluent. However, responsibility lies with the applicant to propose suitable measures.

It was noted during our pre-permitting visits to the site that some of the Factory 1 yard surfacing and expansion joints were in substandard condition. The application indicates that this will be addressed, and confirmation of this is a matter for ongoing compliance regulatory activity. The improvement conditions imposed reference the need to consider repairs/upgrades to existing infrastructure, and ongoing maintenance.

3.4 Chemical storage

All chemicals on site are stored in protective bunds. The main bunded storage areas are within the effluent treatment plant, and a dedicated bunded chemical store in the yard to the west of Factory 1. Other containers, including waste (drums, intermediate bulk containers) are stored on pallet bunds. It is noted that the six 2,500l bulk storage tanks in the ETP are double-skinned, but not integrally independently bunded, meaning that the concrete bund is the only protection measure. The capacity of the bund (300mm walls) in the chemical storage area is not stated to be >110% of the largest container size, but instead drains back to the ETP inlet and balance tank, which is >110% of the largest chemical tank capacity. This is considered adequate, given the collective secondary containment of the whole area. Five of the chemical storage tanks have been commissioned, while the 6th (allocated for ETP neutralisation acid) is yet to be used, but is available for to meet potential future requirement. Plans for bulk chemical storage have changed somewhat during the permit application process. Initially, four HDPE 10,000 l tanks were proposed, only for ETP reagents. During the application, this was amended to allow six HDPE 2,500 l tanks, for both ETP chemicals and sanitation chemicals used elsewhere in the factory, and to reflect a reduction in use of maxichlor and increase in maxifoam in its place. The chemicals currently stored are coagulant, caustic soda, TWS, holquat and maxifoam, with plans for bulk acid as described. There are no chemical incompatibilities identified within the existing group, but these chemicals (collectively) are incompatible with strong acids oxidisers, hypochlorite, and some metals.

We are satisfied with the overall provisions for chemical storage and secondary containment. However, we do note that the storage tanks are not integrally bunded, and that the concrete bund has not had a chemical-resistant surface treatment. While this would appear adequate for storage of most of the chemicals proposed, it is likely that the untreated concrete would offer poor resistance to bulk acid spillage. Furthermore, if there was simultaneous failure of more than one storage tank (e.g. in fire conditions), there is the potential for hazardous exothermic and/or gas-releasing reaction if incompatible chemicals are stored in a common bund (acid and alkali). We have therefore accepted the applicant's chemical storage proposals for current use, on the basis of limited environmental risk, and no acid storage, but placed two related pre-operational conditions requiring further information and identification of suitable improvement measures, before the acid storage tank is commissioned.

3.5 Conclusion

On the basis of risk posed, we have decided to permit the arrangements described in the application for the protection of groundwater, principally regarding production areas, ETP and containment, external operational yard areas, and chemical storage. We are satisfied that basic protection is in place to allow operation of the facility. However, we have also identified a number of potential or actual shortcomings in provisions to protect ground, groundwater and surface water, and have therefore imposed a series of improvement conditions and pre-operational conditions, requiring the operator to address ongoing risks.

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4. Odour

The applicant submitted an Odour Management Plan (OMP) for the facility, as we requested this in pre-application discussions. In their overall environmental risk assessment, the applicant classified the probability of odour pollution as "unlikely", and the consequence "low", leading to "insignificant" overall risk.

The applicant submitted a revised odour management plan during permit determination, which was further assessed against our requirements and was found to address the points raised. The revised odour management plan assessed the potential and actual levels of odour produced by the installation, and present in the vicinity. It was noted in the plan that food odours can be detected off site, but that these are thought not to originate from the facility (there are other food facilities in the area). Specific sources of odour are described, risk-assessed, and where relevant, control / mitigation measures implemented. Examples are given below:

- The effluent treatment plant waste is removed from site as a sludge by enclosed tanker, and the vent from the fixed sludge tank has a carbon filter.
- The DAF plant building and sludge / balance tank is enclosed and has extraction, but no filtration. It is noted that there is some inconsistency in the application – with some documents referring to carbon filtration for the air from parts of the DAF plant. However, this is not part of the final DAF plant design.
- Food waste is sealed in bags, and waste skips are emptied 3-4 times per week.
- Potentially odorous cleaning activities take place in a dedicate area, from which there is extraction.
- Measures are in place to minimise the amount of food waste being sent to the effluent plant.

We have however identified some residual causes of potential odour issue:

- The carbon filtration employed for odour abatement may not be completely effective for some odours that could be present – e.g. ammonia and hydrogen sulphide. It is however listed as a potentially suitable abatement option for odour from effluent treatment in EPR 6.01.
- The carbon filtration is based on a single, rather than sequential filter system. Therefore it will not be possible to anticipate breakthrough in advance of the adsorbent becoming exhausted.
- The balance tank is open to atmosphere and does not have odour abatement
- The coarse screenings are collected in the ETP and tipped into the food waste skip, but unlike other food wastes on site, are not bagged.

The revised OMP (and wider application) addresses the following key odour issues in proportion to the moderate risks involved:

- Inventory – described in narrative form and consists mainly of food, food wastes, and (principal odour source) the effluent treatment plant and associated waste streams – screening solids and DAF sludge.
- Receptors – broadly identified in OMP and in wider application; the area immediately around the proposed facility is non-residential

- Materials management – described in table in OMP. Most wastes are bagged before being placed in enclosed skips; coarse screenings from the ETP are collected in a dolav within the ETP building and are then transferred into the enclosed food skips in the yard. The dolav is emptied at least every two days
- Containment and abatement – described in OMP table and in "operating techniques" document
- Dispersion – not discussed in detail owing to very low odour potential of residual emissions
- Minimising annoyance – described in terms of complaints management process, response to incidents / complaints, proactive maintenance and BAT.
- Incidents and emergencies – described in terms of complaints process, proactive maintenance to prevent emergency, and contingency planning for abnormal operation.

We have compared the applicant's proposals with indicative BAT for odour as described in EPR 6.10 and are satisfied that the arrangements (ETP sizing and maintenance, odour extraction and abatement) represent BAT for the facility. We accept the proposals and approve the revised OMP as proportionate to the current odour risk from site operations.

5. Impact on ecologically designated sites

5.1 Impact on Statutory Protected sites.

Richmond Park Special Area of Conservation (SAC) is located 8.7Km from the proposed installation. There are no other European designated Habitats sites (i.e. Special Areas of Conservation [SAC], Special Protection Areas [SPA] and Ramsar) or prospective European designated sites (candidate SAC or SPA) located within 10Km of the proposed installation. There are no Sites of Special Scientific Interest located within 2Km of the proposed installation.

The proposed installation's impact on protected Habitats, including the habitats assessment submitted by the applicant, was reviewed by the Environment Agency, and is summarised as follows: The proposed installation is 8.7Km from the Richmond Park designated Habitat. The only qualifying feature is the Stag Beetle, and therefore habitats which support the beetle must also be protected. The only environmental impact which is relevant for assessment is emissions to air from 2 natural-gas fired boilers (0.8 MW_{th} and 0.7 MW_{th}). There are no emissions to surface water from the facility (effluent is discharged to sewer, uncontaminated surface water discharged to surface water drainage), and no hydraulic connection between the facility and the designated site. Other potential impacts (noise, odour etc.) are negligible, given the distance between source and receptor, and the context of other industrial, commercial and residential activities/impacts in the surrounding urban London area. Other than emissions to air, impacts from both normal and emergency/abnormal operation can be ruled out as insignificant.

In respect of emissions to air, the applicant has provided information on the boilers, and measurements of their emissions to air of oxides of nitrogen (NO_X) and carbon monoxide (CO). Under our standard assessment guidance (AQTAG 14) we do not consider the impacts of combustion sources from installations as "relevant" for further assessment under the habitats directive, if the combustion process is less than 5 MW_{th}. As the combined thermal input of the two boilers is only 1.5 MW_{th}, the impacts from their emissions screen out as not relevant as the boiler size is significantly below the screening threshold. This is further supported by basic dispersion modelling (see section 1, above). Modelling indicates that the process contribution for NO_X at the habitats site is of the order of 0.01% of the Environmental standard, compared with a significance threshold of 1%. The process contribution for CO is not considered, as there is no ES/EAL for CO associated with habitats sites. This information is summarised in the table below, which shows predicted impacts at Richmond Park from the proposed installation. Even allowing for a large margin

of uncertainty for indicative modelling, it is evident that the boiler emissions are insignificant compared to the 1% screening threshold, and do not require further assessment. Given the very small predicted process contribution for NO_X, we have not made a detailed calculation for nutrient nitrogen deposition or acid deposition (from NO_X) impact, but as it is a function of NO_X concentration, we are satisfied that the contribution would be insignificant.

We have concluded that, that there would be no likely significant effect on the interest features of the Richmond Park protected site. We informed Natural England of the proposal and our conclusions via submission of a Stage 1 Habitats Regulations Assessment form.

Pollutant	ES / EAL ($\mu g/m^3$)	Back-ground ($\mu g/m^3$)	Process Contribution (PC) ($\mu g/m^3$)	PC as % of ES	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	PEC as % ES
Direct Impacts[1]						
NO_2 Annual	30	28.11 [2]	0.0033	0.011	-	-
NO_2 Daily Mean	75	56.22 [2]	0.16	0.21	-	-
Deposition Impacts[1]						
N Deposition (kg N/ha/yr)	10	30	0.001	0.01	-	-
Acidification (Keq/ha/yr)	0.142	2.1	0.0001	0.07	-	-

(1) Direct impact units are $\mu g/m^3$ and deposition impact units are kg N/ha/yr or Keq/ha/yr.

(2) From the air pollution information system (APIS) - http://www.apis.ac.uk/ .

(3) Short term background is taken to be twice the annual background

5.2 Impact on non-Statutory conservation sites etc.

There are 43 non-statutory local wildlife and conservation sites are located within 2Km of the Installation: In assessing these sites under the Environment Act we look at the impact from the Installation alone in order to determine whether it would cause significant pollution. Therefore we would generally conclude that the Installation is not causing significant pollution at these other sites if the PC is less than the relevant critical level or critical load, provided that the Applicant is using BAT to control emissions. For all pollutants and averaging periods (NO_2 annual, NO_2 daily mean, N deposition and Acidification via acid deposition) the predicted PCs are less than the relevant critical level or critical load. We have assumed that the impact at receptors is equal to the maximum predicted impact, which is a conservative approach.

6. BAT assessment

The applicant provided a document entitled “Operating Techniques and BAT assessment”, and other supporting information within the application. We have compared site operations with indicative BAT in EPR 6.10 – Food and Drink Sector Guidance Note. The table below compares relevant current indicative BAT from EPR 6.10, with the measures proposed in the application.

Indicative BAT	**Key measures proposed**
Accident Management:	
Use automatic process controls backed-up by manual supervision, both to minimise the frequency of emergency situations and to maintain control during emergency situations. Instrumentation will include, where appropriate, microprocessor control, trips and process interlocks, coupled with independent level, temperature, flow and pressure metering and high or low alarms.	Production lines are largely supervised / manual, with some automation. Key systems have automation, e.g. sanitizing system, tray wash and chemical dosing. ETP is controlled by an automated HMI system with a variety of metering, logic routines, and alarm states. There is a remotely operated isolation valve for the surface water drains for factory 1, although the actuation process is not described
Use techniques and procedures to prevent overfilling of tanks - liquid or powder- (*e.*g. level measurement displayed both locally and at the central control point, independent high-level alarms, high-level cut-off, and batch metering).	All ETP tanks and sumps have both level sensors and independent high level probes, controlled by HMI system and with pre-set alarm definitions.
Use measures to detect variation in effluent composition *egg* in-line TOC measurement (see monitoring section)	None – but balance tank provides for effluent composition averaging and there is monitoring of key parameters in the outflowing effluent
Ensure that gross fat, oil and grease (FOG) does not block drains.	Not likely to be a key issue, given the manufacturing process. A variety of planned preventive maintenance are routines are described, which would include monitoring drain condition. Extensive measures are described to prevent general food waste entering the effluent stream, which will minimise build-up. Catch pots, though not designed for FOG, will help to minimise entry to drains and are regularly maintained
Identify the major risks associated with the effluent treatment plant (ETP) and have procedures in place to minimise them.	Control process and loss of containment protection measures have been described.
Provide adequate effluent buffer storage so that you can stop spills reaching the ETP or controlled water, especially those spills with high organic strength.	70m^3 working capacity (80m^3 total capacity) balance tank. There is provision to balance ETP input, but not specifically to segregate / hold a separate portion separate from the main load in the event of contamination
Protect against spillages and leaks of refrigerants, especially ammonia.	Refrigeration systems and refrigerant types identified. They include both high global warming potential gases, and newer alternative glycol and propane systems, R404A, R422D, R449a, R401A. There is leak detection in the plant rooms and where some of the air handling units are located. The systems are maintained by a competent 3rd party contractor, and arrangements appear to meet the requirements of the F-gas regulations, and include prevention and record keeping activity.

Energy Efficiency and efficient use of raw materials and water:	
Minimise water use and use recirculating water systems.	Water use is significant, and there is little scope overall to eliminate water use. There is some recirculation described for tray wash, and wash-down hoses have trigger activation. Dry cleaning techniques precede wet cleaning as far as possible. The applicant recognises the issue and production optimisation teams seek to make continual process improvements
Identify and evaluate opportunities for the recycling or reuse of water, taking into consideration hygiene issues and practical constraints. An optimal scheme is likely to include a combination of: sequential reuse (water stream used for two or more processes or operations before disposal) counter-flow reuse, in which the water flows counter-current to the product so that the final product only comes into contact with clean water recycling within a unit process or group of processes without treatment. Recirculating systems should be used to recycle water. (Once through cooling systems should not be used.) the recycling of condensate as boiler feed water (where it is of suitable quality). Contaminated condensate should be used for lower grade cleaning activities e.g. yard washing recycling following treatment - this may include tertiary treatment such as membrane technology.	Recycling wash water described only for tray wash, but this reflects level of opportunity for the production process. Boiler condensate recycled to boiler water.
Ensure efficient operation of the refrigeration system – consider heat recovery from refrigeration system, reducing heat load, efficient operation on part load and fast closing doors/alarms on chilled storage areas.	A variety of opportunities have been identified, and are being implemented to improve energy efficiency of refrigeration systems, some of which are being upgraded in 2019. E.g. more efficient condenser fans, floating head pressure systems, new air handling units with variable speed control instead of dampers. Energy recovery is not described.
Optimise efficiency measures for combustion plant, *e.g.* air/feedwater pre-heating, and use of excess air.	Not described, but not identified as a key issue in ESOS reporting.
Assess the potential environmental impact of raw materials and make substitutions where appropriate. Consider their degradation products when choosing cleaning materials. If caustic is used low mercury sodium hydroxide should be selected. Supercritical carbon dioxide is a suitable alternative to organic solvent usage for extraction of caffeine	Raw material losses are minimised, but review does not consider substitution of ingredients (a consumer choice). Low caustic mercury is used.
Avoidance, recovery and disposal of wastes:	
Demonstrate that the chosen routes for recovery or disposal represent the best environmental option considering, but not limited to, the following: • all avenues for recycling back into the process or reworking for another process • composting • animal feed • other commercial uses, as tabulated in table 2	Bread is sent for animal feed. Food waste is avoided, e.g. by demand planning, redistribution via canteen or charitable organisations, customer take-up. Food waste is avoided by re-using offcuts and recirculating components from disassembled off-specification product, where possible. Food waste is segregated and sent for off-site treatment, for example anaerobic digestion. Numerous measures are in place to divert food to solid waste, and avoid it

below • land spreading, but only under the following circumstances you can demonstrate that it represents a genuine agricultural benefit or ecological improvement you have identified all the pollutants likely to be present. These may substances from the process, from the materials of which your plant is constructed (e.g. reaching the waste by corrosion/erosion mechanisms), from materials related to maintenance (e.g. detergent). You should consider all these possibilities, for both normal and abnormal operation of the plant. You should validate your conclusions by chemical analysis of the waste. You have identified the ultimate fate of the substances in soil.	going to the effluent stream.
Schedule production to minimise product changeovers and clean downs.	Identified and minimised in operating techniques document
Consider whether your packing line efficiency can be improved.	Part of site continual improvement activity
Process control:	
Assess your product loss against the benchmarks.	Not stated, but evidence of benchmarking against company KPIs
Set up effluent monitoring to provide baseline information on wastewater loadings (kgCOD and volume).	Not provided
Investigate high loss areas. Using the baseline information you should set improvement targets - this could be a reduction in daily kgCOD or volume, or any other specific objective.	Not provided, but evidence of process continual improvement teams which would target hot spots
Continue monitoring and review your performance regularly.	Process continual improvement teams
Heat processing using steam or water. Cooling, chilling, freezing or freeze-drying:	
Consider the following energy efficiency measures: use of exhaust air to pre-heat inlet air use of direct flame heating by natural gas two stage drying pre-concentrating liquid foods using multiple effect evaporation.	Not applicable
Use low NOx burners.	Not specifically stated, but combustion by-products seen to be in normal “now NOx” range
Ensure extraction to efficient abatement plant.	n/a
Use detailed drainage plans to ensure that ammonia leaks cannot be discharged to surface waters.	Considered as part of overall site containment / drainage plans

Cleaning and sanitation:	
Wherever possible raw materials and product should be kept out of the wastewater system.	Detailed information throughout application. Dry cleaning, tray wash, catch pots. CiP not appropriate to production type.
Equipment design: when ordering new equipment consider ease of cleaning wherever practicable, process lines and operations that cause excessive spillage of material onto the floor should be modified to eliminate or reduce the problem dry clean-up procedures should remove as much residual material as possible from vessels and equipment before they are washed drains should be equipped with catchpots catchpots should be in place during cleaning (for example by installing lockable catchpots) you should optimise water pressure at jets, nozzles and orifices trigger operated spray guns or hoses should have an automatic water supply shut off.	Implicit in continual improvement activity. Spillage avoided, dry cleaning implemented, catchpots fitted and maintained, trigger operated sprays used.
Good housekeeping: you should install trays to collect waste to prevent it falling to the floor spilt material should be swept, shovelled or vacuumed rather than hosed down the drain you should make sure that suitable dry clean-up equipment is always readily available you should provide convenient, secure receptacles for the collected waste cleaning schedules should be optimised cleaning cycle durations should be matched to the vessel size you should schedule product manufacture to minimise numbers of product changes and subsequent cleaning between products.	Trays and tray wash used. Dry cleaning implemented and available, waste receptacles available. Vessel cleaning not described in detail, but not a key issue in production type except tray wash which is described and optimised. Clean-down minimised.
Manual cleaning: procedures should ensure that hoses are only used after dry clean-up trigger controls should be used on hand-held hoses and water lances to minimise the use of wash-down water high-pressure/low-volume systems should be used wherever practicable	Dry cleaning and trigger controls are in use
Cleaning chemicals usage: you should ensure that staff (and contract cleaners) are trained in the handling, making up and application of working solutions. In particular, the correct concentration of chemical agent should be used. Overuse of chemicals should be avoided, particularly where manual dosing is used.	Training described, and automation of some chemical cleaning processes (e.g. tray wash)
Cleaning-in-place (CIP):	n/a no cleaning in place

Use dry clean-up techniques where practicable to reduce wastewater strength.	Dry cleaning is used
Sanitisation: you should justify the use of organohalogen-based oxidising biocides over the alternatives (e.g. ozone and UV light)**.** recycling of water and recovery of cleaning chemicals	No organohalogens in application. See above for water optimisation
Point source emissions (air):	
Meet the benchmark values for point source emissions to air listed in Annex 1 of this guidance, unless you justify alternative values and obtain our agreement to them.	No applicable benchmark values
Use heat recovery systems.	No opportunities identified
Point source emissions (water):	
As a minimum, control all emissions to avoid a breach of water quality standards but where another technique can deliver better results at reasonable cost it will be considered BAT and should be used. Unless self-evident, you should provide calculations and/or modelling to demonstrate this as part of your application.	Process effluent is discharged to sewer. Permit only allows emission of uncontaminated surface water except to sewer.
Keep raw materials and product out of the wastewater system wherever possible. The following techniques should be used: • dry clean-up • installation of drain catchpots and screens • where gross FOG is found in wastewater, drainage systems should have grease traps and gratings to prevent sewer blockage. These must be frequently inspected, emptied and maintained • use a balancing tank or pond (equalisation or balancing), with a hydraulic retention time of 6 – 12 hours, which can improve treatment in the following ways: by allowing waste streams to be combined e.g. acid and alkali streams from the regeneration of deionisers; or high BOD and low BOD waste streams. This can reduce consumption of reagents by making the flow rate less variable. This can reduce the size of the treatment plant needed, as it only has to handle the average flow and not the peak flow.	Dry clean-up is used. There are catch pots on process lines and screens on the ETP, as well as DAF effluent treatment. Maintenance procedures are in place There is a balancing tank with 8 hour capacity.
Provide contingency measures to prevent accidental discharges from overloading or damaging the treatment plant. These will often include providing a diversion tank into which potentially damaging wastewater can be diverted. This should typically have a capacity of 2 – 3 hours at peak flow rate. The wastewater should be monitored upstream of the treatment plant to allow automatic diversion to the tank. The contents of the diversion tank may be	There is no diversion tank, but the balance tank would reduce risk. However, significant contamination or other incident could therefore cause production to cease, in order to prevent further water being generated while any issue was dealt with. There are arrangements for off-site tankering of waste liquids in the event of incident.

gradually re-introduced into the wastewater stream, or removed for off-site disposal. If you do not provide a diversion tank, you must tell us what equivalent measures you use to protect your treatment plant.	
Fugitive emissions:	
Regularly inspect pipe joints, shaft seals and gaskets in the refrigeration plant using proprietary leak detection equipment.	Preventive plant maintenance (PPM) regime in place. Specific 3rd party contract in place for refrigeration plant.
Ensure that a system log book is kept which records: quantity of refrigerant and oil added to or removed from the system(s) leakage testing results location and details of specific leakage incidents.	A log is kept with required information. This is done by the 3rd party contractor, as described in the application.
Odour:	
Ensure that effluent treatment plant is adequately sized and maintained, and check that site waste water drains do not become blocked. Where present, aeration tanks should be kept aerated and mixed at all times except where maintenance necessitates shut-down of the aeration system. Alternative operational arrangements should be implemented during shut-down to avoid odour nuisance.	Sizing appears adequate relative to site generation – 15m^3/h. Drains are on PPM schedule. The balance thank has an air mixer to prevent anaerobic conditions. While there is no active monitoring of aerobic conditions in the tank, an alarm would be activated if the aeration pump failed
Design and operate abatement plant to cope with maximum loadings and volumes.	Described in application
Design extraction from odorous activities to minimise air flows to the abatement plant.	Sludge tank has its own passive outlet carbon filter

As the European Union BAT REFerence (BREF) document is under revision, and a final draft issued of the new BAT conclusions, we requested that the applicant provides a readiness assessment of conformance with new requirements which it will have to meet in the next 4 years. A separate assessment was provided. Our review of this provided confidence that the applicant was aware of the upcoming new BREF requirements, and was making the necessary preparations for compliance with these within the implementation period, although they are not required to conform fully at the time of permit determination.

We are therefore satisfied that the applicant is using BAT in their operations, and is implementing a process of continual improvement to drive further change.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on confidentiality.
Consultation	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website. We consulted the following organisations: Food Standards Agency Health and Safety Executive Local Authority – Brent (Environmental Health) Public Health England Sewerage Authority – Thames Water The comments and our responses are summarised in the consultation section.
Operator	
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.
The facility	
The regulated facility	We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation'. The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.
The site	

Aspect considered	Decision
Extent of the site of the facility	The operator has provided plans which we are satisfactory, showing the extent of the site of the facility and the discharge points. The plans are included in the permit. Non-installation discharges from the site (i.e. sewerage from amenities at factory 2) are not marked on the discharge point plan.
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive. The operator has not provided baseline soil and groundwater monitoring data, and have confirmed during the application that they did not intend to do so. They state that the risk of there being any existing contamination is negligible. We recommend that applicants collect baseline data to establish ground conditions prior to commencement of the operation of the facility to assess potential impacts of previous activity, but the decision is theirs. The applicant therefore accepts that the baseline contamination before operations will be assumed to be zero.
Biodiversity, heritage, landscape and nature conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. Following provision of further information, the operator's risk assessment is satisfactory. See key issues section for key risks, and for improvement conditions and pre-operational conditions for risk relating to ground, groundwater and surface water contamination and chemical storage, which require further work following issue of the permit.
Operating techniques	
General operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

Aspect considered	Decision
	The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.
Operating techniques for emissions that do not screen out as insignificant	Emissions of NO_X (annual and hourly averages) cannot be screened out as insignificant. We have assessed whether the proposed techniques are BAT. The emissions are in line with benchmarks and limits for similar processes, the impact is not expected to cause significant pollution, and we have imposed an improvement condition to require the operator to assess if further reductions in impact can be achieved. See Key issues section The proposed techniques/ emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions See key issues section.
Operating techniques for emissions that screen out as insignificant	Emissions of *P, Cd, Hg, CO* have been screened out as insignificant, and so we agree that the applicant's proposed technique[s] is [are] BAT for the installation. We consider that the emission limits included in the installation permit reflect the BAT for the sector.
Odour management	We have reviewed the odour management plan in accordance with our guidance on odour management. We consider that the odour management plan is satisfactory. See key issues section.
Noise management	The applicant submitted a noise and vibration risk assessment which did not constitute a full noise and vibration management plan. We reviewed this and other information regarding noise emission from the site and nearby sensitive receptors. On the basis of our qualitative noise screening, we were satisfied that noise from the installation did not require further assessment as it was classified as low risk, given that the nearest residential receptors are a moderate distance from the site (160m or more), the majority of operations are indoors, noise sources are limited, and that there is no history of noise complaints for the site.
Permit conditions	
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template.
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions. These relate to the possible storage of bulk acid in the effluent treatment plant chemical storage area. We believe further assessment is required of chemical compatibility with other materials

Aspect considered	Decision
	stored, and the resistance of the bund to the acid. As the acid storage is a future intention, not essential to facility operation, it is appropriate to impose pre-operational conditions before such storage is implemented See key issues section.
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme. We have imposed an improvement programme to ensure that: • The impacts of NO_X emissions are further reduced, if possible • the secondary containment of the effluent treatment plant is properly designed and implemented, and improvements made if necessary There is sufficient protection of ground, groundwater and surface water arising from normal, abnormal, and emergency emissions from operations in areas of the installation (e.g. yards) which drain to surface water, and should only emit uncontaminated surface water. See key issues section.
Emission limits	We have decided that emission limits are not required in the permit.
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. These monitoring requirements have been imposed in order to monitor ongoing performance of the boilers for NO_x and CO emissions. Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate. See key issues for further information.
Reporting	We have specified reporting in the permit. We made these decisions in accordance with our guidance
Operator competence	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions. The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.
Relevant convictions	The Case Management System and National Enforcement Database has/have been checked to ensure that all relevant convictions have been declared. No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.

Aspect considered	Decision
Financial competence	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit. Paragraph 1.3 of the guidance says: "The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation." We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections. We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

The following statutory and non-statutory bodies were consulted: -

- Food Standards Agency
- Health and Safety Executive
- Local Authority – director of public health and environmental health department – London Borough of Brent
- Public Health England
- Sewage undertaker – Thames Water

Responses from organisations listed in the consultation section

Response received from
Public Health England (PHE)
Brief summary of issues raised
No specific issues –it is noted that odour from waste food products was PHE's main potential concern, and that they were satisfied from the application that acceptable waste management procedures were in place.
Summary of actions taken
Odour is a standard consideration in permit determination. Based on risk, the installation has been required to submit an odour management plan, which has been assessed and accepted as part of the permitting process.

Representations from local MP, councillors and parish/town community councils

None received

Representations from community and other organisations

None received

Representations from individual members of the public.

None received