Permitting decisions

Variation

Consultation on our decision document recording our decision making process

The Permit number is: EPR/TP3932PV.

The Variation number is EPR/TP3932PV/V005.

The Installation is located at: Nestle Purina Petcare, Chilton Site, Windham Road, Chilton Industrial Estate, Sudbury, Suffolk, CO10 2XD.

Consultation commences on: 05/04/2019

Consultation ends on: 08/05/2019

What this document is about

This is a draft decision document, which accompanies a draft Variation Notice.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the draft Variation Notice we are proposing to issue. It is our record of our decision making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

The document is in draft at this stage, because we have yet to make a final decision. Before we make this decision we want to explain our thinking to the public and other interested parties, to give them a chance to understand that thinking and, if they wish, to make relevant representations to us. We will make our final decision only after carefully taking into account any relevant matter raised in the responses we receive. Our mind remains open at this stage: although we believe we have covered all the relevant issues and reached a reasonable conclusion, our ultimate decision could yet be affected by any information that is relevant to the issues we have to consider. However, unless we receive information that leads us to alter the conditions in the draft Variation Notice, or to reject the Application altogether, we will issue the Variation Notice in its current form.

In this document we frequently say "we have decided". That gives the impression that our mind is already made up; but as we have explained above, we have not yet done so. The language we use enables this document to become the final decision document in due course with no more re-drafting than is absolutely necessary.

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

Preliminary information and use of terms

We gave the Application the reference number EPR/TP3932PV/V005. We refer to the Application as "the **Application**" in this document in order to be consistent.

The number we have given to the Variation Notice is EPR/TP3932PV/V005. We refer to the proposed Variation Notice as "the **Variation Notice**" in the document.

The Application was duly made on 18/06/2018.

The Applicant is Nestle Purina Petcare (U.K.) Limited. We refer to Nestle Purina Petcare (U.K.) Limited as "the **Applicant**" in this document.

The site is located at Nestle Purina Petcare, Chilton Site, Windham Road, Chilton Industrial Estate, Sudbury, Suffolk, CO10 2XD. We refer to this as "the **Installation**" in this document.

How this document is structured

- our proposed decision
- how we reached our decision
- 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 and the variation notice. The introductory note summarises what the variation covers.

Our proposed decision

We are minded/have decided to grant the Variation Notice to the Applicant. This will allow it to operate the Installation, subject to conditions in the Variation Notice.

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

How we reached our draft decision

Receipt of the Application

The Application was duly made on 18/06/2018. This means we considered it was in the correct form and contained sufficient information for us to begin our determination [but not that necessarily contained all the information we would need to complete that determination: see below].

The Applicant made no claim for commercial confidentiality. We have not received any information in relation to the Application that appears to be confidential in relation to any party.

Consultation on the Application

We carried out consultation on the Application in accordance with the Environmental Permitting Regulations (EPR), our statutory public participation statement (PPS) and our own internal guidance Regulatory Guidance Series (RGS) Note 6 for Determinations involving Sites of High Public Interest. We consider that this process satisfies, and frequently goes beyond the requirements of the Aarhus Convention on Access to

Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, which are directly incorporated into the Industrial Emissions Directive (IED), which applies to the Installation and the Application. We have also taken into account our obligations under the Local Democracy, Economic Development and Construction Act 2009 (particularly Section 23). This requires us, where we consider it appropriate, to take such steps as we consider appropriate to secure the involvement of representatives of interested persons in the exercise of our functions, by providing them with information, consulting them or involving them in any other way. In this case, our consultation already satisfies the Act's requirements.

We advertised the Application by a notice placed on our website, which contained all the information required by the IED, including telling people where and when they could see a copy of the Application.

We made a copy of the Application and all other documents relevant to our determination available to view on our Public Register. Anyone wishing to see these documents could do so and arrange for copies to be made.

We sent copies of the Application to the following bodies, which includes whom we have "Working Together Agreements":

- Food Standards Agency
- Environmental Health - Babergh and Mid Suffolk District Council
- Local Planning Authority - Babergh and Mid Suffolk District Council
- Public Health - Suffolk County Council
- Public Health England
- Health and Safety Executive

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

In addition to our advertising, we undertook a programme of extended public consultation. A briefing note was emailed to the MP and town councillors, who are members of the local liaison group, informing them of the consultation on gov.uk.

Residents are also part of a local liaison group. The briefing note was sent via email to this liaison group informing them of the live consultation on gov.uk. For residents who do not have access to email a hard copy of the briefing note was sent along with a consultation response document which included instructions to request hard copies of the Application documents.

Further details along with a summary of consultation comments and our response to the representations we received can be found at the end of this document. We have taken all relevant representations into consideration in reaching our determination.

Requests for Further Information

Although we were able to consider the Application duly made, we did in fact need more information in order to determine it, and issued information notices on 02/10/2018 and 14/01/2019. A copy of each information notice was placed on our public register.

In addition to our information notices, we received additional information during the determination from the Applicant on 21/01/2019, 04/03/2019, 29/03/2019. The additional information included an updated site layout plan, showing the emissions to air, sewer, relocation of existing tanks and revised installation boundary. A copy of this information was placed on our public register.

Having carefully considering the Application and all other relevant information, we are now putting our draft decision before the public and other interested parties in the form of a draft Variation Notice, together with this explanatory document. The public have been provided with all the information that is relevant to our determination, including the original Application and additional information obtained subsequently, and we have given the public two separate opportunities (including this one) to comment on the Application and its determination. Once again, we will consider all relevant representations we receive in response to this final consultation and will amend this explanatory document as appropriate to explain how we have done this, when we publish our final decision.

Finally we have consulted on our draft decision from 05/04/2019 to 08/05/2019. A summary of the consultation responses and how we have taken into account all relevant representations is shown at the end of this document.

Key issues of the decision

Description of Variation Changes

Nestle Purina Petcare (U.K.) Limited operate an Installation that manufactures a range of dry and semi-moist meat and fish based pet foods.

Following a comprehensive review of the site's odour control methods the Applicant has proposed the addition of further odour control infrastructure and BAT operating techniques to prevent significant odour emissions from the Installation. The proposed changes comprise a combination of wet scrubbing, activated carbon filtration and the redirection of several process air streams prior to release through the following three existing abated stacks:

- SCBMain stack;
- Line 7 stack (previously referred to as the 'APP6+7 stack'); and
- SCB5 stack.

A combination of wet scrubbing and activated carbon filtration will be installed to treat gases prior to release via these stacks. The existing Applied Plasma Physics (APP) abatement system will be removed and process emissions from extruder line 6, previously emitted through former emission point 'APP6+7 stack', will be redirected through SCBMain stack.

To accommodate the new abatement system SCBMain stack is being relocated 20 metres south east at National Grid Reference TL 88696 41761. Furthermore, the stack is being redesigned with a revised release height of 25 metres and a diameter of 1.9 metres.

Two existing raw material tanks are relocated to allow room for the new activated carbon unit on SCBMain. The installation boundary has been amended to accommodate these changes. The extra area of land was covered in the original application site condition report.

The proposed realignment of process air flows will result in reduced flow volumes of process air flow from the following emission points and the discharge of this air back into the process. Therefore, the following emission points are being removed:

- DF3 - intake and bin exhausts;
- DF4 - batching plant exhausts;
- DF5 - extruder plant number 1 local exhaust ventilation;
- DF7 - extruder plant number 2 local exhaust ventilation;
- DF8 - extruder plant number 3 local exhaust ventilation; and
- DF9 - extruder plant number 4 local exhaust ventilation.

Grinder emission air flows, comprising raw material, will be managed via a separated ventilation system to the main processing and post processing air streams. These emissions will be redirected to the wet scrubber and carbon filtration unit prior to release through re-commissioned SCB5 stack. Therefore, the following emission points are removed:

- SCB1 - extruder line 1 location protection area exhaust;
- SCB2 - extruder line 2 location protection area exhaust;
- SCB3 - extruder line 3 local production area exhaust; and
- SCB4 - extruder line 4 location protection area exhaust.

The emission point to water, W1, was included in the original permit determination in error. Surface water from the installation discharges to the public surface water sewer. Therefore, emission point W1 is removed and emission point S2 added.

In addition, the variation authorises the replacement of existing 2.2 megawatt natural gas fired boiler (Boiler 2, emission reference B2) with a 4.4 MWth steam boiler also fired on natural gas. The additional capacity of the larger boiler is required to future proof the steam system.

Phased Improvements

The changes outlined above are to be completed over a phased timescale to allow the Installation to continue operating during construction. The proposed completion date for all the changes is quarter 1 2020. The proposed timescale for the changes are as follows:

- process improvements to reduce total airflow - in progress;
- removal of external emission points (dust filters) - in progress;
- commissioning/operation of proposed abatement system on SCB5 - Q2 2019;
- commissioning/operation of proposed abatement system on SCBMain - Q4 2019; and
- commissioning/operation of proposed abatement system on Line 7 - Q1 2020.

The implementation timescales were presented to local residents at a community liaison meeting held in June 2018. A Gantt chart confirming the project timeframes was sent to the Environment Agency in April and May 2018.

Our formal response, in a letter sent to the Operator on 10 May 2018, states that the Gantt chart will be used as a formal action plan for the required improvements to be implemented.

The Gantt chart was based on the variation being issued in October 2018. Therefore, to allow for the additional determination time an improvement condition, IC14, has been set with a deadline of Q2 2020.

Assessment of Odour Emissions

The Applicant has used detailed air dispersion modelling to assess the projected reduction of odour emissions following installation of the proposed odour abatement and control system changes outlined in the Application.

Odour modelling report *'Sudbury Odour Impact Assessment: Odour Dispersion Modelling – Proposed Changes, June 2018'* was submitted with the Application to predict odour concentrations at nearby receptors following the odour abatement changes. The Applicant used air dispersion modelling software ADMS version 5.2, which is a commonly used dispersion model in the UK.

The following benchmark levels have been set in the H4 Odour Management horizontal guidance. The benchmark levels are based on the 98th percentile of hourly average concentrations of odour modelled over a year. The benchmarks are:

- 1.5 odour units for **most offensive** odours;
- 3 odour units for **moderately offensive** odours;
- 6 odour units for **less offensive** odours.

The H4 guidance states a benchmark of 1.5 odour units can be compared to 'processes involving decaying animal or fish remains'. Moderately offensive benchmark, 3 odour units, can be associated with processes such as 'intensive livestock rearing' and 'fat frying (food processing)'. Nestle Purina will be using pre-processed animal raw materials which are not decaying but are being manufactured into a food product. In addition, the main percentage of the raw materials are not inherently high risk as they are predominantly of a dry nature and cereal based. The processing plant is enclosed with emissions from the process being ducted to the odour abatement plant. Therefore, in line with H4 guidance, the assessment has been based on the moderately offensive 3 odour unit (OUe) benchmark, which we deem appropriate. Any modelled results that project exposures above the 3 OUe/m^3 benchmark level, after taking uncertainty into account, indicates the likelihood of unacceptable odour pollution.

The assessment considered and compared the existing operation, '2017 scenario', against the 'proposed scenario' which included the significant abatement measures proposed to reduce odour emissions. They

have considered the 98th percentile of hourly mean impacts at sensitive residential receptors, non-sensitive receptors and maximum off site odour concentration.

The existing '2017 scenario', which has received historical and ongoing complaints, included the following 18 sources:

- Scrubber Stacks (SCB1, SCB2, SCB4, SCBMain);
- APP6+7 System Outlet (APP6 and APP7 combined);
- Outlet Fans (DF3, DF4);
- Extruder Plant Line Filters (DF5, DF7, DF9);
- Main Production Unit Ambient Fans (Af8, Af9, Af10, Af11);
- Packing Unit Ambient Fan (Packing Fan); and
- Line 6+7 Unit Ambient Roof Vents (Vent 1, Vent 2, Vent 3).

The 'proposed scenario', which contains the additional abatement and redirection of sources, included the following 11 sources:

- SCB5 (DF3, DF4, DF5, DF7 and DF9 are redirected through reinstated stack SCB5, with reconditioned wet scrubber and addition of carbon absorption abatement);
- SCBMain (SCB 1, SCB 2 and SCB 4 redirected through relocated SCBMain stack with reduced stack height and diameter, and reconditioned wet scrubber and addition of carbon absorption abatement); and
- Line 7 stack (previously APP6+7, with removal of plasma physics units and addition of wet scrubbing and carbon absorption abatement).

The odour concentrations, used in the assessment, for the existing '2017 scenario' were based on monitoring completed during 2011, 2013, 2014 and 2017. For the proposed abated sources, SCB5, SCBMain and Line 7, the odour concentrations have been assumed to be 1000 OUe/m^3. This is based on the manufactures guarantee that the treated process air will have an odour concentration of less than 1000 OUe m/^{3}. Therefore, the results of the assessment are based on this odour concentration being achieved. An improvement condition, IC14, has been set requiring them to demonstrate that this concentration is being achieved.

The assessment used five years of meteorological data from 2013 to 2017 observed at RAF Wattisham which is located approximately 16 kilometres from the installation. Our audit of the assessment confirms that this is the closest meteorological station and is representative of local meteorological conditions for use in the model.

Our audit also agrees with the included effects of on-site buildings in their assessment to take into account building downwash. Although terrain and surface roughness was considered in the assessment we carried out sensitivity analysis as part of the check modelling.

The odour assessment identified 33 sensitive human receptor locations for inclusion which represented the closest residential, commercial and industrial receptors to the installation. In addition, predictions were made across a 25 metre resolution receptor grid to establish the point of the maximum off site odour concentration.

The assessment predicted that the odour concentrations will be reduced at all receptor locations with the proposed changes when compared to the existing '2017 scenario'. The report states that under the '2017 scenario' the odour concentration exceeds the 3 OUe/m^3 benchmark at 22 of the identified receptors. The worst case odour concentration at a residential receptor is 6.3 OUe/m^3, the worst case at a commercial receptor being 28.6 OUe/m^3 and a maximum off site odour concentration of 38.9 OUe/m^3. However, the assessment predictions for the 'proposed scenario' indicate the worst case odour concentration at a residential receptor to be 1.4 OUe/m^3, the worst case at a commercial receptor being 2.6 OUe/m^3 and a maximum off site odour concentration of 2.7 OUe/m^3. The assessment states that this represents a reduction of predicted odour concentrations by approximately 80-94% depending on the receptor location.

Our check modelling and sensitivity analysis indicated that, although the numerical values do not exactly match the consultant's, we can agree there will be a significant reduction in odour impacts at all receptors when compared with the existing scenario. Although our predictions differ slightly from the consultant's

assessment the results indicate that it is unlikely there will be exceedances of the 3 OUe/m^3 benchmark at any off site locations under the proposed scenario.

Odour Management Plan

The odour management plan (OMP) has been updated to incorporate the proposed changes to the plant, engineering controls and management systems. The OMP contains appropriate measures that the operator will use to prevent or, where that is not practical, minimise off site odour arising from the potentially odorous activities which will take place on their site, covering both point source and fugitive emissions.

The revised and updated OMP, submitted with this application, covers the following:

- updated odour source and release inventory following changes to redirection of process air streams;
- design details, operation and maintenance requirements of the new abatement systems – wet scrubber and carbon filtration;
- action plan and contingency measures; and
- control measures and operational parameters.

An inventory of odorous materials forms part of the OMP which sets out the odour likelihood, the pathway and receptor, control measures in place and the odour emission action plan. The OMP also describes restricting and managing potentially odorous activities, storage, process monitoring and procedures to deal with emergencies and incidents so odour releases are minimised under these circumstances. It also identifies nearby sensitive receptors and complaints procedures.

The operator states the OMP will be reviewed annually as a minimum or following any significant change in manufacturing process, introduction of new odour abatement, new odour sources, addition of new buildings or change in layout of the installation.

We have reviewed and approved the operator's revised OMP and consider that it complied with the requirements of our H4 Odour Management horizontal guidance. We agree with the scope and suitability of key measures but this should not be taken as confirmation that the details of equipment specification design, operation and maintenance are suitable and sufficient. That remains the responsibility of the operator.

Permit conditions require the operator to comply with the measures proposed in their operating techniques which includes their OMP. The odour condition in the varied permit is included to ensure that odour emissions from the facility do not cause annoyance. A programme of monitoring has been outlined in the OMP which includes daily olfactory tests at identified receptors downwind of the installation and at identified boundary locations to identify whether emissions of odour have the potential to cause annoyance.

We have imposed process monitoring requirements, in table S3.3 of the variation, to monitor key process parameters of the odour abatement including pH, air temperature, differential pressure and blowdown flow rate. The odour systems will be regularly checked and maintained to ensure appropriate temperature and moisture content. Furthermore, we have included the requirement to ensure the carbon filters are to be replaced when saturated in accordance with manufactures recommendations.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution from odour.

Assessment of Best Available Techniques

Existing odour abatement

Odour abatement is already fitted to all emissions considered to be significant at the site.

Emissions from process lines 1, 2 and 4 and grinders 1 and 2 (inlet to SCBMain) are treated using a wet chemical absorption system comprising a two stage chemical absorption. The abatement system has been recorded to have an odour removal efficiency of 69%.

Applied plasma physics (APP), is already in place to treat process emissions from lines 6 and 7 and grinders 4, 5 and 6 (inlets to APP6 and APP7). The Food and Drink BREF outlines that the abatement technique will

operate with process air of up to 100% humidity, maximum input temperatures of 70°C, optimal flow rate of 20,000m^3/hour and with dust loads < 25 mg/m^3. Monitoring data at the site showed the process air was within these optimal performance parameters and has an odour removal efficiency of 84%.

However, although the techniques in place are indicative BAT for this sector, BAT must be demonstrated for the installation. Furthermore, off site odour emissions indicate potential for unreasonable levels of odour greater than 3 OU_E/m^3 are identified at a nearby sensitive receptors. Therefore, the applicant has committed to implementing further measures to reduce the odour impact from the site.

Future proposals

Site investigations reported that grinder emissions, which comprise un-processed raw materials, are a possible contaminant of the products produced. Therefore, the Applicant has proposed to reinstate a mothballed scrubber system linked to emissions point SCB5 and duct all grinder emissions so they are segregated from the main process emission systems which vent via SCBMain and line 7.

Nestle Purina Petcare (U.K.) Limited identified and compared four options for end of pipe odour control as detailed below:

- Option 1 - engineering measure – dust filter alterations
- Option 2a - ERG1
- Option 2b - ERG1 + dust filter alterations
- Option 3 - ERG2
- Option 3b - ERG2 + dust filter alterations
- Option 4a - OSI: single stage adsorption
- Option 4b - OSI + dust alterations

(Note: ERG and OSI are odour and air pollution control suppliers)

ERG1 proposal would comprise of a multi stage treatment system involving a wet scrubbing stage to provide an initial treatment of hot humid air and reduce process gas temperatures. The odorous gas then passes through two activated carbon filters to reduce odour concentration levels to < 500 OUe/m^3.

ERG2 proposal for lines 1, 2, 3, 4 and 6 (would include the process air be drawn through two odour control systems running in parallel using fans to pass the air vertically up through irrigated sieve trays. The lower section of the tray will reduce the temperature from 47°C to 34°C. The process air will then pass up through perforations in the tray and mix with liquor in the upper section of the tray absorbing some of the soluble VOCs.

The process air will then enter chevron blade demisters and pass up through the gas liquor separator into the second stage. In the second stage the recirculated liquor will be dosed with sodium bisulphite, reacting with the absorbed ketones and aldehydes and fix these contaminants in the liquor stage.

Liquor in the upper stage will be dosed with sodium hydroxide to react with the absorbed VOCs to fix these contaminants. The process air will then be blown up through a packed bed of 1.5 m deep packing material and through a second layer of perforations with a layer of alkali liquor flowing across the top of the tray. The mixing with the recirculated liquor with process air will capture particulates and absorb soluble acidic VOCs.

The pre-treated process air will then be passed through two annular activated carbon filters to absorb the remaining VOCs and reduce odour concentration levels to < 1000 OUe/m^3. The treated process air will then discharge via the new SCBMain stack.

ERG2 treatment proposal for process air from line 7 and process air from grinders 1, 2, 3, 4, 5 and 6 (SCB5) will comprise of the same pre-treatment stage of wet scrubbing and chemical dosing as SCBMain. However, the pre-treated process air will be passed through one annular activated carbon filter to absorb the remaining VOCs and reduce odour concentration levels to < 1000 OUe/m^3.

The OSI system comprises an initial treatment of hot humid process gases by passing it through activated carbon filters. The partially treated gases are then passes through further activated carbon filters working in parallel to reduce odour concentration levels to < 500 OUe/m^3.

Dispersion modelling discounted option 1, dust filter alterations, as a control method on its own, as odour concentrations less than 3 OUe/m^3 could not be achieved. Additionally, the end of pipe method options, ERG1, ERG2 and OSI, being used in isolation would also not achieve odour concentration levels less than 3 3 OUe/m^3 at the site boundary due to influence of emissions from the dust filters and consequently discounted. Therefore, only options involving a combination of odour treatment and dust filtration were progressed.

Dispersion modelling showed that the remaining three options, option 2b, option 3b and option 4b could achieve a predicted maximum off site odour concentrations < 3 OUe/m^3. These three options are all considered to be equal in terms of reduction of odour impact. Combining the odour dispersion modelling with the Environment Agency Cost Benefit Analysis (CBA) tool gave the following ranking in terms of environmental and economic benefit:

1. Option 3b - ERG2 + dust filter alterations
2. Option 4b - OSI + dust alterations
3. Option 2b - ERG1 + dust filter alterations

The Applicant has committed to installing ERG2 (as described above) and dust filter alterations as further measures to reduce odour from the site to below 1000 OUe/m^3. The system will add further treatment to the existing wet chemical absorption system which is already in place for SCBMain. It will replace the APP system which is currently in place for Line 7.

SCBMain stack height relocation and reduction

To accommodate the new abatement system SCBMain stack is relocated 20 metres south east. The stack has been redesigned and comprises a stack height of 25 metres and a diameter of 1.9 metres. The previous stack height was 32.8 metres.

The predicted potential impacts from both stack heights were assessed using a fixed emission concentration in line with the systems manufacturers guarantee. The assessment showed that the reduction in stack height would not result in a significant difference to any of the modelled receptors or difference to the overall maximum off site concentration.

Emissions to Air - Steam Raising Boiler 2

As part of the variation the site is replacing an existing 2.2 megawatt natural gas fired boiler (Boiler 2, emission reference Boiler Stack 2) with a 4.4 MWth steam boiler also fired on natural gas. Emissions from the boilers include oxides of nitrogen and carbon monoxide. The Applicant used the Environment Agency's H1 screening tool to assess the impact of emissions to air, from the new 4.4 MWth boiler combined with the existing 3.2 MWth boiler, against the relevant environmental quality standards (EQS).

A methodology for risk assessment of point source emissions to air, which we use to assess the risk of point source emissions to air, is set out on our website and has the following steps:

- calculate the environmental concentration of each substance released into the air – known as the process contribution (PC);
- identify PCs with insignificant environmental impact so they can be 'screened out';
- for substances that do not screen out, calculate the predicted environmental concentration (PEC) – the PEC is the PC plus the background (concentration of the substance already present in the environment);
- identify emissions that have insignificant environmental impact;
- decide if detailed air modelling is required;
- assess the PC and PEC with relevant environmental quality standards (EQS); and
- summarise the effects of the emissions.

Process contributions (PC) can be considered insignificant at stage 1 if:

- the short term PC is less than 10% of the short term environmental quality standard; and
- the long term PC is less than 1% of the long term environmental quality standard.

Where the emissions to do not screen out at stage 1 a second stage is required to determine the impact of the PEC. PECs can be considered as unlikely to give rise to significant pollution at stage 2 if:

- the short term PC is less than 20% of the short term environmental quality standard minus twice the long term background concentration; and
- the long term PEC is less than 70% of the long term environmental quality standard.

Emissions of oxides of nitrogen could not be screened out as insignificant, however, these are considered unlikely to give rise to significant pollution in that there is adequate headroom between the PEC and the EQS to indicate that an exceedance of the EQS is unlikely of both the long term and short term EQS.

Table 1 – process contributions considered unlikely to give rise to significant pollution

Pollutant	Averaging period	EQS µg/m^3	Background µg/m^3	PC µg/m^3	PEC µg/m^3	PC % of EQS	PEC % of EQS
NO_2	Annual mean	40	13.6	5.1	18.7	12.8	46.8
	1 hour mean	200	27.2	91.4	118.6	45.7	59.3
CO	Maximum 8 hour running	10,000	--	183	--	1.8	--

All emissions either screen out as insignificant or where they do not screen out as insignificant are considered unlikely to give rise to significant pollution.

Nature Conservation Assessment

There are no European designated sites within ten kilometres of the installation boundary or Sites of Special Scientific Interest (SSSI) present within two kilometres. There are eight other nature conservation sites located within two kilometres of the installation.

An assessment on sites of heritage, landscape or nature conservation, and/or protected species or habitat was not required due to the size of the combustion plant. The 4.4 MWth combustion unit is below the 5 MWth threshold and therefore the relevant distance criteria of zero metres was applied in accordance with Environment Agency AQTAG 14: Guidance on identifying 'relevance' for assessment under the Habitats Regulation for installations with combustion processes. Therefore, no detailed assessment of the effect of the releases from the installation on sites of conservation was required.

Medium Combustion Plant Directive

The Medium Combustion Plant Directive (MCPD) applies to combustion plants with a rated thermal input equal to or greater than 1 MWth and less than 50 MWth. The directive stipulates that emission limit values (ELVs) will be applied to combustion plants that are in operation before 20 December 2018.

A 250 mg/m^3 NO_x ELV has been set in line with Annex II, Part 1, of the MCPD.

Periodic monitoring is required every three years for NOx and carbon monoxide in accordance with Annex III, Part 1, of the MCPD.

Installation Boundary

Two existing raw material tanks are relocated to allow room for the new activated carbon unit on SCBMain. The variation increases the installation boundary to accommodate these changes.

The tanks will contain coloured water and 75% phosphoric acid as they do currently and therefore will not introduce any potential additional odour emissions. There will be no changes to the tanks and they will be transferred like to like from the current location to the new location.

A bunded area will be created to contain the tanks. The Operator has confirmed the bund will be designed to have the capacity that is the greatest out of the following measurements:

- 25% of the total tank volume; or
- 110% of the capacity of the largest tanks.

The bunding will be designed to meet CIRIA C736 requirements and will be lined to contain any spill of the phosphoric acid. The existing standard operating procedure (SOP) will still be applicable requiring the pumping out of rain water from the bunds and inspections for colour and pH.

The extra area of land where the tanks are being relocated was assessed in the original application site report (ASR).

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.
Consultation/Engagement	
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 • Environmental Health – Babergh and Mid Suffolk District Council • Local Planning Authority - Babergh and Mid Suffolk District Council • Public Health – Suffolk County Council • Public Health England • Health and Safety Executive The comments and our responses are summarised in the consultation section.
Engagement	We consider this Application to be of high public interest and so have engaged with the following stakeholders, as per the engagement plan: • Local MP • Mayor and town councillors • Local residents A briefing note was sent via email to the MP and town councillors, who are members of the local liaison group, to inform them of the live consultation on gov.uk. Residents are also part of a local liaison group. The briefing note was sent via email to this liaison group informing them of the live consultation on gov.uk. For residents who do not have access to email a hard copy of the briefing note was sent along with a consultation response document which included instructions to request hard copies of the application documents. The comments and our responses are summarised in the consultation section of this document.
The facility	
The regulated facility	We considered the extent and nature of the facilities at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN 2 ‘Defining the scope of the installation’, Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’, guidance on waste recovery plans and permits.

Aspect considered	Decision
	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	
Extent of the site of the facility	The Operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. The plan is included in the permit. The Installation boundary has been amended following this variation. See key issues 'installation boundary' section above for further information.
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. For air emissions the Application screens out from requiring further assessment in accordance with AQTAG 14. As a result of this risk assessment, the Environment Agency can conclude there is no likely significant effect and no consultation is necessary. See key issues 'nature conservation' section above for further information.
Environmental risk assessment	
Environmental risk	We have reviewed the Operator's assessment of the environmental risk from the facility. The Operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be categorised as environmentally insignificant.
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. The operating techniques that the Operator must use are specified in table S1.2 in the environmental permit.
Operating techniques for emissions that screen out as insignificant	Emissions of oxides of nitrogen and carbon monoxide, from the steam raising boilers, have been screened out as insignificant or where they do not screen out as insignificant or where they do no screen out as insignificant are considered unlikely to give rise to significant pollution. We agree that the Applicant's proposed techniques are BAT for the Installation. We consider that the emission limits included in the Installation permit reflect 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.

Aspect considered	Decision
	See key issues 'odour management plan' above for more information.
Permit conditions	
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.
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 odour abatement installed performs to the same design parameters set out in the application; and • to review and update the Odour Management Plan to include trigger thresholds, optimum ranges for operation of the plant and measures in place if these are exceeded.
Emission limits	An ELV and equivalent parameters have been added for oxides of nitrogen, at emission point Boiler Stack 2. The ELV is 250 mg/m^3 in line with the MCPD. See key issues for further information.
Monitoring	We have decided that monitoring should be added for the following parameters, using the methods detailed and to the frequencies specified: Boiler Stack 2: • oxides of nitrogen – every three years • carbon monoxide – every three years These monitoring requirements have been set in accordance with the MCPD. See key issues above for further information.
Reporting	We have added reporting in the permit for the following parameters: Boiler Stack 2: • oxides of nitrogen - every three years • carbon monoxide – every three years These reporting requirements have been set in accordance with the MCPD. See key issues above for further information.
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.
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	

Aspect considered	Decision
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.

Responses from organisations listed in the consultation section

Response received from
Environmental Health – Babergh and Mid Suffolk District Council
Brief summary of issues raised
The council regularly receive complaints from members of the public about odorous emissions from this site however these are always referred to the Environment Agency.
Summary of actions taken or show how this has been covered
No action required.

Response received from
Public Health England
Brief summary of issues raised
PHE suggest that the permit should contain conditions to ensure that the following potential emissions do not impact upon public health: • emissions to air from point sources including gaseous compounds such as volatile organic compounds (VOCs) and nitrogen dioxide (NO_2); and • odour emissions from activities on site. Based on the information in the application, PHE have no significant concerns regarding risk to health of the local population from this proposed activity, providing that the appropriate measures are in place to prevent or control pollution. Recommend that the Environment Agency also consult the local authority and Director of Public Health. Any additional information from these comments should be sent to PHE for consideration.
Summary of actions taken or show how this has been covered
Permit ensures appropriate measures to prevent or control pollution are taken. The permit includes the standard odour condition which states that emissions from the activities shall be free of levels likely to cause pollution outside the installation boundary. The site has amended the OMP taking into consideration the new odour abatement system. An improvement condition has been set to amend the OMP after the completion of a four month dynamic olfactometry monitoring program. The amendment should include quantitative trigger thresholds, optimum ranges for operation of the plan and measures in place if these are exceeded. Another improvement condition is set to submit a written report on the commissioning of the odour abatement to ensure the environmental performance of the abatement meets the design parameters as set out in the application. The local authority and Director of Public Health have both been consulted as standard requirement.

Response received from
Public Health – Suffolk County Council
Brief summary of issues raised
Based on the information in the application and PHE's comments Suffolk County Council Public Health team do not have any significant concerns. Recommend the permit issued should contain conditions to ensure that the following potential emissions do not impact upon public health: • emissions to air from point sources including gaseous compounds such as volatile organic compounds (VOCs) and nitrogen dioxide (NO_2); and

• odour emissions from activities on site.
Summary of actions taken or show how this has been covered
As per actions stated above for the Public Health England Response.

Response received from
Local Planning – Babergh and Mid Suffolk District Council
Brief summary of issues raised
The council do not wish to object to the proposals. The Environmental Health and Enforcement teams have been consulted on the application, however, do not have any comments.
Summary of actions taken or show how this has been covered
No action required.

Representations from individual members of the public.

Brief summary of issues raised
Ongoing problem, concerns over close proximity to residential properties. Haven't seen any improvements despite Operator implementing odour reduction improvements.
Summary of actions taken or show how this has been covered
The site recognises that although BAT for odour control could already be considered to be in place, off site odour emissions greater than 3 OU_E/m^3 are identified at a nearby sensitive receptor. Therefore, the Operator has committed to implementing further measures to reduce the odour impact from the site. The detailed dispersion modelling, submitted with the application, assesses the reduction of odour emissions following implementation of the proposed odour abatement and compares it to the existing odour control methods. The report states that the worst case odour concentration at a residential receptor to be 1.4 OUe/m^3 under the proposed abatement methods. Furthermore, there were no exceedances of the 3 OUe/m^3 benchmark at any off site locations under the proposed scenario. The OMP has been updated to incorporate proposed changes and includes action plans and contingency measures should any odour pollution arises. This is discussed in greater detail in the key issues section of this decision document.

Brief summary of issues raised
Monitoring of particulates from odour abatement equipment.
Summary of actions taken or show how this has been covered
Each odour abatement system consists of a wet scrubbing stage to remove residual particulates from the process air flows and reduce dust loading onto the carbon filters. The OMP states that key parameters within the carbon filtration will be monitored. IC1 requests the Operator to submit a report comparing the environmental performance of the abatement, as installed, against the design parameters set out in the application.

Brief summary of issues raised
Public site visits to increase visibility and transparency.
Summary of actions taken or show how this has been covered
This is outside of the scope of the Environment Agency's remit, we don't control access to and from the Installation.

Brief summary of issues raised
Survey with farmers, crop and fruit producers to establish if there are any impacts on their production.
Summary of actions taken or show how this has been covered
The proposals are to reduce odour impacts from the Installation. Odour will not cause any impacts onto vegetation/crops. The new steam raising boiler emissions either screen out as insignificant or where they do not screen out as insignificant are considered unlikely to give rise to significant pollution. Furthermore, the Application was sent to the Food Standards Agency to comment and advertised on our website to allow any member of public to comment, including farmers to contact us.

Brief summary of issues raised
Monitoring data to be made available to the public.
Summary of actions taken or show how this has been covered
The Operator will report their emissions to the Environment Agency which are available on the Public register.

Brief summary of issues raised
Concerns of harmful carbon emissions, on human health, after using carbon filtration to prevent emitting odours.
Summary of actions taken or show how this has been covered
The activated carbon filtration units acts to purify the process air flows to remove the potentially harmful VOCs prior to discharge through the stack. There will be no emissions of carbon released from this process.

Brief summary of issues raised
Concerns over four years being too long to implement the proposals.
Summary of actions taken or show how this has been covered
Proposed changes due to be complete by Q2 2020. Changes to SCB5 and SCBMain odour abatement systems will be implemented and operational prior to the completion date. The timeframe was presented to the local residents at a public liaison group in June 2018. The Gantt chart was based on the variation being issued in October 2018. Therefore, to allow for the additional determination time an improvement condition, IC14, has been set with a deadline of Q2 2020. See key issues section above for further detail.

Brief summary of issues raised
Concerns over the effect of odour emissions on human health in the future.
Summary of actions taken or show how this has been covered
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 and human health protection is provided.

Brief summary of issues raised
Questioning of why the permit needs to be varied prior to the works commencing.
Summary of actions taken or show how this has been covered
Operators are required, in line with the Environment Permitting Regulations, to vary their Permit prior to legally undertaking activities to ensure the environmental impact has been fully considered and accounted for. We need to ensure that the operators proposed techniques are BAT for the installation and consider that the emission limits included reflect BAT for the sector, are appropriate and achievable.

Brief summary of issues raised
Concerns over the increase thermal capacity of the steam raising boiler 2 and whether this will have greater impacts.
Summary of actions taken or show how this has been covered
The Operator has used the Environment Agency's H1 screening tool to assess the impact of emissions to air from the proposed new steam boiler and existing steam boiler. All emissions either screen out as insignificant or where they do not screen out as insignificant are considered unlikely to give rise to significant pollution. This is discussed in greater detail in the key issues section of this decision document.

Brief summary of issues raised
Have all sensitive environmental receptors been considered.
Summary of actions taken or show how this has been covered
The detailed dispersion modelling, submitted with the application, assesses the potential emission concentrations against identified sensitive receptors as well as considering maximum off site odour concentrations. It is unlikely there will be any exceedances of the 3 OUe/m^3 benchmark at any off site locations under the proposed scenario. This is discussed in greater detail in the key issues section of this decision document.