Determination of an Application for a Variation to an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010

Consultation on our decision document recording our decision-making process

The Permit Number is:	EPR/PP3096ZA
The Variation Number is:	EPR/PP3096ZA/V008
The Applicant / Operator is:	Biowise Limited
The Installation is located at:	Biowise Albion Lane Composting Facility Albion Lane Willerby Hull East Yorkshire HU10 6TS

Consultation commences on: 8 May 2015
Consultation ends on: 8 June 2015

What this document is about

This is a draft decision document, which accompanies a draft variation notice and consolidated permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the draft consolidated permit we are proposing to issue to the Applicant. 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 Consolidated Permit, or to reject the Application altogether, we will issue the Consolidated Permit 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. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

Preliminary information and use of terms

We gave the application the reference number EPR/PP3096ZA/V008. We refer to the application as “the **Application**” in this document in order to be consistent.

The number that we have previously given to the permit is EPR/PP3096ZA. We refer to the permit as “the **Permit**” in this document.

The number we have given to the variation and consolidation is EPR/PP3096ZA/V008. We refer to the consolidated permit and as “the **Consolidated Permit**”.

The Application was duly made on 4 February 2015.

The Applicant is Biowise Limited. We refer to Biowise Limited as “the **Applicant**” in this document. Where we are talking about what would happen after the Consolidated Permit is issued (if that is our final decision), we call Biowise Limited “the **Operator**”.

Biowise Limited’s proposed in-vessel composting facility is located at Biowise Albion Lane Composting Facility, Albion Lane, Willerby, Hull, East Yorkshire, HU10 6TS. We refer to this as “the **Installation**” in this document.

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Glossary of acronyms used in this document

(Please note that this glossary is standard for our decision documents and therefore not all these acronyms are necessarily used in this document.)

ABPR	Animal By-Products Regulations
BAT	Best Available Technique(s)
BREF	BAT Reference Note
CQP	Compost Quality Protocol (WRAP and Environment Agency (August 2012) 'End of waste criteria for the production and use of quality compost from source-segregated biodegradable waste')
CROW	Countryside and rights of way Act 2000
DAA	Directly associated activity – Additional activities necessary to be carried out to allow the principal activity to be carried out
DD	Decision document
EIAD	Environmental Impact Assessment Directive (85/337/EEC)
ELV	Emission limit value
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No. 675) as amended
EWC	European waste catalogue
FSA	Food Standards Agency
HPA	Health Protection Agency (now PHE – Public Health England)
HRA	Human Rights Act 1998
IED	Industrial Emissions Directive (2010/75/EU)
IPPCD	Integrated Pollution Prevention and Control Directive (2008/1/EC) – now superseded by IED
LADPH	Local Authority Director(s) of Public Health
Opra	Operator Performance Risk Appraisal
PHE	Public Health England
PPS	Public participation statement
PR	Public register
RGS	Regulatory Guidance Series
SAC	Special Area of Conservation
SGN S5.06	Sector guidance note IPPC S5.06 'Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste'
SHPI(s)	Site(s) of High Public Interest
SPA(s)	Special Protection Area(s)

SSSI(s)	Site(s) of Special Scientific Interest
SWMA	Specified waste management activity
TGN	Technical guidance note
WFD	Waste Framework Directive (2008/98/EC)

1 Our proposed decision

We are minded to issue the Consolidated Permit to the Applicant. This will allow it to operate the Installation, subject to the conditions in the Consolidated Permit.

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

This Application is to operate an installation, an in-vessel composting (IVC) facility, which is subject principally to the Industrial Emissions Directive (IED). The Environmental Permitting (England & Wales) Regulations (EPR) 2010 transpose the provisions of the IED. The IVC facility is an activity listed in Section 5.4 Part A(1)(b)(i) of Schedule 1 of EPR 2010.

Existing permitted activities will continue to take place at the site and no changes to their operation have been made as a result of this Application. These activities comprise:

- Open windrow composting of green waste
- Soil manufacture
- Blending
- Sorting and segregation of wood.

However the implementation of the IED has widened the scope of activities to be regulated as installations. This means that the existing open windrow composting of green waste at this site is now an activity listed in Section 5.4 Part A(1)(b)(i) Schedule 1 of the EPR 2010. This is because the site has the capacity to recover more than 75 tonnes per day of green waste by open windrow composting. This is reflected in Table S1.1 of this permit which includes Activity A1. Activity A1 can be undertaken in two different ways: the existing open windrow composting of green waste activity; and the new in-vessel composting of food and green waste, followed by maturation in open windrows.

Soil manufacture, blending and the sorting and segregation of wood will continue to operate as waste operations.

This document only explains how we have considered the Applicant's Application to include the additional IVC facility. We consider the existing open windrow composting of green waste to be BAT. We explain this in Section 6.1('Assessment of Best Available Techniques') of this document.

The draft Consolidated Permit contains many conditions taken from our standard Environmental Permit template including the relevant Annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Consolidated

Permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard condition appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our draft decision

2.1 Receipt of Application

The Application was duly made on 4 February 2015. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it 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.

2.2 Consultation on the Application

We carried out consultation on the Application in accordance with the EPR, our statutory PPS and our own 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 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 also placed an advertisement in the Hull Daily Mail on 18 February 2015.

We made a copy of the Application and all other documents relevant to our determination (see below) available to view on our Public Register at The Environment Agency, Lateral, 8 City Walk, Leeds, LS11 9AT and (by appointment) at our Environment Agency office in Beverley (Crosskill House, Mill Lane, Beverley, East Yorkshire HU17 9JW). 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 those with whom we have "Working Together Agreements":

- Public Protection, Environmental Health, East Riding of Yorkshire Council
- Food Standards Agency
- Health and Safety Executive

- Public Health England, Centre for Radiation, Chemical and Environmental Hazards
- Director of Public Health, East Riding of Yorkshire Council
- Animal and Plant Health Agency Field Services.

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. Note under our Working Together Agreement with Natural England, we only inform Natural England of the results of our assessment of the impact of the installation on designated Habitats sites.

In addition to advertising the Application, we published three newsletters:

- On 4 February 2015 Newsletter 1 was sent to local community contacts and the local Member of Parliament (on 5 February 2015)
- On 26 February 2015 Newsletter 2 was sent to local community contacts and the local Member of Parliament (on 27 February 2015)
- On 2 April 2015 Newsletter 3 was sent to local community contacts but not to the local Member of Parliament as this was during the pre-election period.

Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 3. We have taken all relevant representations into consideration in reaching our draft determination.

2.3 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 13 February 2015, 18 March 2015, 2 April 2015 and 17 April 2015. A copy of each information notice, and the responses to each notice, were placed on our public register.

Having carefully considered 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 Consolidated Permit, together with this explanatory document. As a result of this stage in the process, the public has 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.

3 The legal framework

The Consolidated Permit will be issued, if appropriate, under Regulation 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facilities are:

- an installation;
- waste operations covered by the WFD; and
- subject to aspects of other relevant legislation which also have to be addressed.

We address some of the major legal requirements directly where relevant in the body of this document. Other requirements are covered in a section towards the end of this document.

We consider that, if we issue the Consolidated Permit, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

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

4 The Installation

4.1 Description of the Installation and related issues

4.1.1 The permitted activities

The Installation is a regulated facility subject to the EPR because it carries out activities listed in Part 1 of Schedule 1 to the EPR:

- Activity A1 - S5.4 A(1)(b)(i) Recovery or a mix of recovery and disposal of non hazardous waste with a capacity exceeding 75 tonnes per day involving biological treatment. It does this by:
  - (i) Composting (sanitisation) of waste under aerobic conditions in closed vessels fitted with appropriate odour abatement; and
  - (ii) Composting (maturation) of sanitised waste from IVC building under aerobic conditions in outdoor turned windrows on impermeable surface with sealed drainage system; or
  - (iii) Composting of waste under aerobic conditions in outdoor turned windrows on impermeable surface with sealed drainage system.

Parts (i) and (ii) above describe the new IVC facility that is the subject of the Application.

Part (iii) above describes the existing open windrow composting of green waste which, due to IED, is now an activity listed in Schedule 1 of the EPR 2010. The site has the capacity to recover more than 75 tonnes per day of green waste by open windrow composting.

An installation may also comprise “directly associated activities”, which at this Installation include:

- Storage of wastes pending recovery
- Physical treatment for the purposes of recycling
- Raw material storage
- Compost storage
- Process water collection and storage
- Surface water collection, storage and discharge.

Together, these listed and directly associated activities comprise the Installation, a regulated facility.

There are also other existing regulated facilities that are subject to the EPR because they carry out “relevant waste operations” as specified in Schedule 9 to the EPR:

- Soil manufacture
- Blending
- Sorting and segregation of wood.

The waste recovery operations that are undertaken are:

- R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) (Soil manufacture and sorting and segregation of wood)
- R3: Recycling/reclamation of organic substances which are not used as solvents (Soil manufacture and sorting and segregation of wood)
- R5: Recycling/reclamation of other inorganic compounds (Soil manufacture and blending)

4.1.2 The Site

Biowise Albion Lane Composting Facility is located on the north western edge of Willerby. It is 7 km west of Hull, 8km south west of Beverley and 14km from the M62. Access to the site is via Albion Lane.

The site is situated on a disused railway line that ran in a north west to south east direction. It is approximately 1.4km long and 300m wide at its widest point. It is bisected by Westfield Road which runs perpendicular to the site in a south west to north east direction.

Prior to this Application, the permit boundary covered the land to the south of Westfield Road only. The site was comprised of one area for open windrow compositing, wood recycling and soil manufacture.

This Consolidated Permit allows expansion of the activities undertaken at the site to land adjacent and to the north of Westfield Road. Here the site is, on average, only approximately 40m wide. The northern half of this part of the site sits within the former railway cutting. The IVC building will be located in this part of the site such that the ground level of the building is approximately 6m below that of the surrounding land.

There is one sensitive receptor within 250m of the new IVC building, Eppleworth Wood Farm, which is located approximately 220m to the North North East.

There are no sensitive receptors within 250m of the open windrow composting pad. The immediate area surrounding the site is used for agricultural purposes.

However, there are individual sensitive receptors located within 1 km of the site to the north, east, south and west. Additionally, the edge of Willerby is only just over 1km to the south east of the site boundary.

The Applicant submitted a plan which we consider is satisfactory, showing the site of the Installation and its extent. A plan is included in Schedule 7 to the Consolidated Permit, and the Operator is required to carry on the permitted activities within the site boundary.

Further information on the site is addressed below at 4.3.

4.1.3 What the Installation does

Existing permitted activities will continue to take place at the site, to the south of Westfield Road, and no changes to their operation have been made as a result of this variation:

- Open windrow composting of green waste (Activity A1 in Table S1.1)
- Soil manufacture (Activity A8 in Table S1.1)
- Blending (Activity A9 in Table S1.1)
- Sorting and segregation of wood (Activity A10 in Table S1.1).

The Applicant has described the proposed facility as an in-vessel composting (IVC) facility.

The IVC facility will receive up to 75,000 tonnes per year of non hazardous food and green waste. Waste types will include kerbside collected comingled food and green waste, civic amenity green waste and commercial food and green waste.

All waste will be received within the IVC reception hall where it will be screened to remove large contaminants, passed over a picking line and shredded. Shredded material will be transferred to one of eight composting tunnels to undergo sanitisation in accordance with the requirements of the Animal By-Products Regulations (ABPR).

Each tunnel has a maximum volume of 315 tonnes of waste. The sanitisation process will last a minimum of 2 days but typically between 7 and 10 days. To ensure the process is effective, tunnels will be continuously monitored for temperature and moisture using an automated data logging system.

The reception hall and tunnels will have impermeable surfacing with a sealed drainage system. Leachate from the sanitisation process will be collected and stored in an integrally bunded leachate storage tank located adjacent to the IVC building. From here it may be directed to the tunnels to meet the moisture requirements of the sanitisation stage. We consider it best practise to re-circulate leachate prior to the sanitisation stage only to reduce the risk of contamination; however this is a compliance matter for the Animal and Plant Health Agency (APHA) who are the 'competent authority' for regulating against the Animal By-Products Regulations (ABPR). The APHA will have a role in regulating activities at this site because the IVC facility includes wastes covered by the ABPR. We consulted the APHA during the determination of this application. We received no comments from them. We are however satisfied that excess leachate will be transferred off site for disposal at a regulated facility if the leachate storage tank reaches 90% of its maximum volume.

All IVC activities will take place in the enclosed, negatively aerated, IVC building to prevent the release of odour, bioaerosols, noise or dust to the external atmosphere. Air from the reception hall and tunnels will be treated through one of two wet scrubbers and one of four biofilters. The Consolidated

Permit requires process monitoring of the scrubbers and biofilters to confirm their effectiveness. The operator has in place an odour management plan.

After sanitisation, and once the waste has been stabilised in the tunnels, it will be transferred to the open windrow pad. The open windrow pad will have impermeable surfacing and a sealed drainage system. Batches of material will be formed into windrows of 4m high, 5m wide and 40m long to undergo maturation. The maturation stage will last a minimum of 6 weeks. Temperature and moisture will be monitored weekly and the windrows turned a minimum of two times to ensure this stage is effective.

Leachate generated during the open windrow stage will be collected in a bunded leachate storage tank located adjacent to the composting pad. From here it may be re-applied to windrows to meet the moisture requirements of the maturation stage. Alternatively, if the leachate storage tank reaches 90% of its maximum volume, leachate will be transferred off site for disposal.

Following maturation, each batch will be screened to the required particle size grade. The screened compost will be transferred to the storage area where it will be stored for up to 12 months prior to blending, bagging and/or despatch as compost that meets the Compost Quality Protocol (PAS 100).

4.1.4 Key Issues in the Determination

The key issue arising during this determination were emissions of odour and we therefore describe how we determined this issue in most detail in this document.

4.2 The site and its protection

4.2.1 Site setting, layout and history

The site is located in an area that has historically been used for agricultural purposes since at least 1855. A railway line at the site is first shown on the historical map for 1891. This was subsequently removed in 1977. The railway cutting at the north western end of the site has now been cleared for redevelopment and this will be the site of the IVC facility.

The site was previously a permitted landfill site; the permit for the landfill has now been surrendered. The part of the site where the IVC building will be located has never been used as part of landfill operations.

The current activities were first permitted in 2006. These activities took place, within the same site boundary, to the south east of Westfield Road. This road now bisects the site, as extended, in a south west to north east direction.

4.2.2 Proposed site design: potentially polluting substances and prevention measures

The installation has been designed to ensure pollution to ground and groundwater is prevented.

The entire IVC building will have an impermeable surface and sealed drainage to collect leachate from stored and treated wastes.

Similarly the existing open windrow composting pad has an impermeable surface and is designed to ensure all leachate from the windrows drains to sump pits. From the sump pits leachate is pumped to a bunded storage tank.

A site condition report (SCR) is required for any facility regulated under the EPR, where there may be a significant risk to land or groundwater. The SCR should include a baseline report, which is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the Operator has to apply to us for surrender, which we will not grant unless and until we are satisfied that these requirements have been met.

The Applicant has submitted a site condition report which includes a report on the baseline conditions as required by Article 22. We have reviewed that report and consider that it adequately describes the condition of the soil and groundwater prior to the start of operations. The Applicant has concluded that the ground condition is not contaminated.

The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the installation and at cessation of activities at the installation. As the Applicant has determined that there is 'zero contamination' beneath the site, when the Operator applies to surrender the Permit, any contamination by substances used at, produced or released from the facility would be considered to have resulted from the operation of the facility. This is in accordance with the Environment Agency Guidance H5 – Site Condition Report.

4.2.3 Closure and decommissioning

Having considered the information submitted in the Application, we are satisfied that the appropriate measures will be in place for the closure and decommissioning of the Installation.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the Operator will apply to us for surrender of the Permit, which we will not grant unless and until we are satisfied that these requirements have been met.

4.3 Operation of the Installation – general issues

4.3.1 Administrative issues

The Applicant is the sole Operator of the Installation.

We are satisfied that the Applicant is the person who will have control over the operation of the Installation after the issuing of the Consolidated Permit; and that the Applicant will be able to operate the Installation so as to comply with the conditions included in the Consolidated Permit.

We are satisfied that the Applicant's submitted Opra profile is accurate.

The Opra score will be used as the basis for subsistence and other charging, in accordance with our Charging Scheme. Opra is the Environment Agency's method of ensuring application and subsistence fees are appropriate and proportionate for the level of regulation required.

4.3.2 Management

We are satisfied that appropriate management systems and management structures will be in place for this Installation, and that sufficient resources are available to the Operator to ensure compliance with all the Consolidated Permit conditions.

The installation is a 'specified waste management activity' (as defined in our Regulatory Guidance Series, No RGN 5 'Operator competence') and therefore requires technically competent management (TCM) under an approved scheme. We are satisfied that the operator is a member of an agreed scheme. The Operator has provided evidence that they will have a technically competent manager that holds a relevant qualification.

4.3.3 Site security

Having considered the information submitted in the Application, we are satisfied that appropriate infrastructure and procedures will be in place to ensure that the site remains secure.

4.3.4 Accident management

The Applicant has submitted an Accident Management Plan. Having considered the Plan and other information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that accidents that may cause pollution are prevented but that, if they should occur, their consequences are minimised.

4.3.5 Off-site conditions

We do not consider that any off-site conditions are necessary.

4.3.6 Operating techniques

We have specified that the Applicant must operate the Installation in accordance with the following documents contained in the Application:

Description	Parts Included
Response to Schedule 5 Notice dated 18/03/15	Accident Management Plan (Document name: 'BIO03 – Accident Management Plan (Issue 01).pdf' Fugitive Emissions Management Plan (Document name: 'BIO08 – Fugitive Emissions Management Plan (Issue 01).pdf' Drainage plans (Document name: 'BIO09 – Appendix Drainage Plans.pdf') Site Layout Plans excluding Drawing 'Open Windrow Site Plan' (Document name: 'BIO12 – Site Layout Plans.pdf)
Additional information requested 02/04/15	Drawing PFD3-02 'Process Flow Waterhandling' Drawing 'Odour Release Points Location Plan' (Document name 'BIO04 – Appendix 1 (ORP Plan).pdf'
Additional information requested 17/04/15	Drawing 207 'Kerbing and Paving' (Document name: '36602-207E Kerbing and Paving.pdf') Drawing 208 'Standard Carriageway Details' (Document name: '35602-208 Standard Roadway Details.pdf') Drawing 250 'External Works: Drainage GA (Sheet 1) (Document Name: '35602-250G Drainage GA (Sheet 1).pdf') Drawing 'Open Windrow Drainage' (Document Name: 'Eppleworth011_5_Open Windrow Drainage.pdf') Drawing 'Open Windrow Site Plan' (Document Name: 'Eppleworth011_6_Open Windrow Site Plan.pdf') Supporting information for Drainage Management Plan ('Document Reference: 'Q&A Drainage Management Plan_2.docx') Drainage Management Plan (Document name: 'BIO09 – Drainage Management Plan.pdf')
Additional information requested 01/05/15	Management System (Document name: 'BIO02 – Management System.pdf')
Additional information requested 06/05/15	Odour Management Plan (Document name: 'BIO04 – Odour Management Plan.pdf')

The details set out above describe the techniques that will be used for the operation of the Installation that have been assessed by the Environment Agency as BAT; they form part of the Consolidated Permit through condition 2.3.1 and Table S1.2 in the Consolidated Permit Schedules.

4.3.7 Waste types

Article 45(1) of the IED requires that the Consolidated Permit must include a list of all types of waste which may be treated using at least the types of waste set out in the European Waste List established by Decision 2000/532/EC, if possible, and containing information on the quantity of each type of waste, where appropriate. The Application contains a list of those wastes coded by the European Waste Catalogue (EWC) number, which the Applicant will accept and which the IVC facility is capable of treating in an environmentally acceptable way. We have specified the permitted waste types, descriptions and where appropriate quantities which can be accepted at the installation in Tables S2.2, S2.3, S2.4, S2.5 and S2.6.

We are satisfied that the Applicant can accept the wastes contained in Tables S2.2, S2.3, S2.4, S2.5 and S2.6 of the Consolidated Permit because: -

(i) these wastes are categorised as municipal waste in the European Waste Catalogue or are non-hazardous wastes similar in character to municipal waste;

(ii) the wastes are all categorised as non-hazardous in the European Waste Catalogue

Tables S2.3, S2.4, S2.5 and S2.6 have not been amended from previous versions of the permit.

Only Table S2.2 has been added to the consolidated permit as part of this variation. For most waste codes in this table, we have used the waste descriptions that we use in our standard rules permit (SR2021No4) for composting in closed systems so that we are consistent in the way in which we regulate the biowaste treatment sector.

For those waste codes in Table S1.2 that are not listed in SR2021No4, we have used the waste descriptions given in Table B1 of the CQP: 02 01 01; 02 02 99; 04 01 01; 04 02 21; 15 01 03; 16 10 02; 17 02 01; 19 05 03; 20 03 01.

We have agreed the biodegradable wastes listed in SR2012No4 and those from the CQP with industry and through consultation. These are wastes which are well categorised and understood. They are considered amenable to aerobic composting and biological treatment and produce outputs that, if used in accordance with good agricultural practice or in the horticultural setting can be beneficially used with a low risk of pollution or harm.

Many of the waste descriptions in the SR2012No4 and the CQP have been amended from the original description given in the EWC to limit the types of waste that can be accepted to only those that are suitable for recovery by in-vessel composting.

The descriptions for the following waste codes have not been amended to limit the waste types that can be accepted because we consider them to be entirely appropriate for recovery by in-vessel composting: 02 01 02; 02 01 03;

02 02 02; 02 02 03; 02 03 01; 02 04 01; 03 03 01; 03 03 10; 19 05 01; 19 05 02; 19 06 05; 19 06 06; 19 08 05; 19 12 07; 20 01 08; 20 01 25; 20 01 38

Only two waste codes are included in Table S1.2 that are not listed in SR2012No4 or the CQP: 19 05 01 and 19 05 02. We have given these waste codes descriptions to limit the wastes that can be accepted to only those wastes types that may be accepted on site under any other waste code listed in this table.

We have excluded waste code 19 05 99 'Wastes no otherwise specified (liquor/leachate from a composting process that accepts only the waste input types allowed by the Compost Quality Protocol)'. This is because we consider waste code 16 10 02 to be more appropriate for wastes of this type.

We have limited the waste capacity of the IVC facility to 75,000 tonnes per annum. This is based on the designed capacity of the Installation.

4.3.8 Energy efficiency

Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that energy is used efficiently within the Installation.

The Application details a number of measures that will be implemented at the Installation in order to increase its energy efficiency, as set out in Section 5.2 and Annex C of the 'BAT Assessment' received as part of the original application on 22 December 2014.

There is no specific BAT requirement to reduce the energy consumption to a set level. The Applicant's commitment to ensure efficient operation and to monitor and report on energy usage annually is considered to be BAT. There is no Climate Change Agreement (CCA) in place for the installation. The installation is not subject to a greenhouse gases permit under EU ETS.

4.3.9 Efficient use of raw materials

Having considered the information submitted in the Application, we are satisfied that the appropriate measures will be in place to ensure the efficient use of raw materials and water.

The Operator will store fuel, oils and lubricants on site. All storage areas will be appropriately bunded in accordance with Section 2.2.5 of SGN S5.06. All pipework and associated infrastructure with the fuel tank will be enclosed within the bund for that tank. In Section 4.10 of the 'Management System' the Operator confirms that no other raw materials which have potential for significant environmental impact will be utilised on site.

The Operator will minimise fresh water use where possible. Rain water will be captured in a 50m^3 tank and used as wash down water for processing areas.

To ensure compliance with ABPR, fresh water will be used in the IVC tunnels once waste has been sanitised.

The Operator is required to report with respect to raw material and water usage under condition 1.3 and Schedule 4.

4.3.10 Avoidance, recovery or disposal with minimal environmental impact of wastes produced by the activities

This requirement addresses wastes produced at the Installation and does not apply to the waste being treated there. The principal waste streams the Installation will produce are leachate and biofilter medium.

The first objective is to avoid producing waste at all. Waste production will be avoided by re-using leachate whenever possible in the IVC tunnels and on the open windrow pad to achieve the moisture levels required for effective composting. Leachate will be stored in one of two on site tanks: one adjacent to the IVC building (shown on 'IVC Site Layout Plan') and one adjacent to the open windrow pad (shown on 'Open Windrow Site Plan'). When either tank reaches 90% of its maximum volume it will be emptied and the leachate transferred off site for disposal at a permitted waste water treatment facility.

1650m^3 of wood chip will be used as biofilter medium. When this loses its coarseness and becomes ineffective, it will be replaced by fresh wood chip. But to avoid waste production, spent biofilter media will composted on site.

There will additionally be small amounts of waste generated at the pre-treatment stage when contraries (e.g. plastics and rubble) will be removed during screening and from the picking line. The presence of these wastes will be avoided as far as possible by robust pre-acceptance procedures. Any contraries that are removed at the pre-treatment stage will be bagged and stored within the reception hall in a secure designated area prior to transfer off-site to a suitably regulated facility.

Having considered the information submitted in the Application, we are satisfied that the waste hierarchy referred to in Article 4 of the WFD will be applied to the generation of waste and that any waste generated will be treated in accordance with this Article.

We are satisfied that waste from the Installation that cannot be recovered will be disposed of using a method that minimises any impact on the environment. Standard condition 1.4.1 will ensure that this position is maintained.

5 Minimising the Installation's environmental impact

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as discharges to ground. All these factors are discussed in this and other sections of this document.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the Installation on human health and the environment and what measures we are requiring to ensure a high level of protection.

5.1 Environmental Risk Assessment – H1 Annex A

The Applicant submitted a risk assessment ('H1 Risk Assessment Annex A', received 17/04/15) in accordance with our guidance: 'H1 Annex A – Amenity & accident risk from installations and waste activities' covering odour, dust, noise, scavenging birds and animals, litter, pests, accidents and visible plumes.

The Installation is identified as a potentially significant source of odour and bioaerosols. The Applicant has therefore also submitted an Odour Management Plan (OMP) (approved following minor revision 07/05/15) and Site Specific Bioaerosol Risk Assessment (SSBRA) (received 27/03/15).

The OMP provides a detailed qualitative risk assessment of odour and sets out management measures that will be in place to prevent of odour pollution. The OMP is discussed in Section 6.11 below.

The SSBRA has been submitted because the IVC facility is located within 250m of a sensitive receptor (Eppleworth Wood Farm). It is discussed in Section 5.2 below.

The Applicant also provided two Noise Impact Assessments. These are discussed in Section 5.3 below.

We have reviewed the Operator's H1 assessment of the environmental risk from the facility with regard to dust, scavenging birds and animals, litter, pests, accidents and visible plumes. The Operator's risk assessment is satisfactory. The H1 shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment all emissions may be categorised as environmentally insignificant.

The Operator has the following documents in place: a Management System (received 01/05/15), Fugitive Emissions Management Plan (received 27/03/15), Accident Management Plan (received 27/03/15) and a Drainage Management Plan (received 01/05/15) which set out the management measures that will be employed to ensure the risk of all emissions is low.

5.2 Site Specific Bioaerosol Risk Assessment

The Applicant has produced a Site Specific Bioaerosol Risk Assessment (SSBRA) (received on 27/03/15) in accordance with our 'Position Statement on Composting and the potential health effects from bioaerosols: our interim guidance for permit applicants' (V1.0 November 2010). This statement applies to composting operations that are, or will be, within 250 metres of a 'sensitive receptor' (typically a dwelling or workplace). In this case, the IVC facility will be within 250m of one sensitive receptor, Eppleworth Wood Farm which is situated approximately 200m to the North North West of the IVC building. Activities to the south of Westfield Road, including the open windrow composting pad, are not within 250m of a sensitive receptor.

Before we grant a permit, the operator will need to satisfy us (through a suitable qualitative SSBRA) that site operations will not pose an unacceptable risk to the nearby sensitive receptors by having measures in place to prevent the uncontrolled release of high levels of bioaerosols. We consider that there is currently no suitable methodology for carrying out adequate quantitative SSBRA for new composting facilities.

Composting is defined as the biological decomposition of biodegradable waste under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat. This includes the in-vessel composting and open windrow composting that will take place at this site.

Before granting a permit we need to be satisfied that the SSBRA shows that bioaerosols can, and will, be maintained no higher than the acceptable levels at the sensitive receptors. The acceptable levels are 300, 1000 and 500 cfu/m^3 for gram-negative bacteria, total bacteria and Aspergillus fumigatus respectively, as measured by the Association for Organics Recycling (AFOR)/Environment Agency 'Standardised protocol for the monitoring of bioaerosols at open composting facilities.'

Bioaerosols are complex mixtures of airborne micro-organisms and their products, and are ubiquitous, particularly in rural environments. The most serious health problems appear to arise from *Aspergillus fumigatus*, but there are other fungal spores and bacteria that cause problems. International studies have shown that there is a wide variability in individual susceptibility to bioaerosol exposure.

Commercial scale composting activities tend to generate large amounts of bioaerosols and these are likely to contain human allergens and pathogens. They have potential effects on respiratory health and may cause headaches, nausea and fatigue. There has been very little investigation into the effects of community exposure to bioaerosols from composting, but there is some limited data that suggest that living close to a composting facility may be associated with an increased risk of adverse health effects. The consensus from various studies is that bioaerosols from composting activities decline

rapidly within the first 100 metres from a site and generally decline to background levels within 250m.

Cranfield University has produced 'Guidance on the evaluation of bioaerosol risk assessments for composting facilities' for the Environment Agency specifically for the evaluation of bioaerosol risk assessments carried out by applicants for composting facilities. The Applicant has made reference to the guidance in their risk assessment.

In their SSBRA the Applicant has undertaken risk estimation to calculate the magnitude of risk through consideration of the magnitude of consequences, the probability of exposure and the probability of consequences. The Applicant has completed a 'semi-quantitative' risk assessment by assigning numerical values to each element of the risk estimation.

The Applicant initially identifies the relevant site activities at the IVC facility that could result in bioaerosol emissions. These include vehicle movements, site maintenance, waste reception, shredding, screening, tunnel loading/unloading, sanitisation and accidents. In Table 8 of the SSBRA the Applicant has determined the magnitude of the consequence of each release, in terms of cfu/m^3, by using on site monitoring data to establish typical levels of micro-organisms associated with each of the existing site activities. Bioaerosol monitoring was undertaken by the Applicant on 11 September 2014.

To establish the probability of exposure the Applicant considered three factors: the proportion of time that a receptor is present at the identified location; the proportion of time averaged over 1 year that wind blows towards the receptor; and the frequency of bioaerosol release in hours per week from each identified site activity. Using these factors, the Applicant has determined (in Table 11 of the SSBRA) the probability of exposure using conservative definitions for exposure probability (Table 10).

Having determined the magnitude of consequences and the probability of consequences the Applicant has evaluated the risk of bioaerosol exposure to the sensitive receptor associated with each identified site activity (Table 13 of the SSBRA). The Applicant concludes that the risks are in the low range and are likely to be acceptable in all circumstances

We consider that the SSBRA submitted by the Applicant satisfies the requirements set out in our Position Statement by demonstrating that bioaerosols can, and will, be maintained no higher than acceptable levels at the sensitive receptors. We are satisfied that waste operations will be actively managed by being fully enclosed in the IVC building (that will be under negative pressure), extracted to the air treatment system, with dispersion provided by the location of the biofilters on top of the IVC building. These measures will ensure that the impact of any emissions will be minimised. For those activities that will take place outside the building i.e. vehicle movements and tunnel unloading, we are satisfied that the Applicant will have appropriate measures in place to prevent bioaerosol release.

In the Consolidated Permit we require, in Table S3.5, quarterly monitoring for bioaerosols at a minimum of three separate locations as described in the Industry Standard Protocol: 'A standardised protocol for the monitoring of bioaerosols at open composting facilities' published by the Association for Organics Recycling and developed in conjunction with the Environment Agency. To support this monitoring, we also require (as Pre-operational measure POM 3) the Operator to submit a bioaerosols background sampling report to us for written approval at least 4 weeks (or any other date as agreed with us) prior to the commencement of commissioning of the in-vessel composting operation. This approach is consistent with requirements at other installations undertaking the same activities.

5.3 Noise Impact Assessment

We received (on 25/03/15), from the Applicant, a 'Second Noise Impact Assessment' (dated 17/07/14), supported by a noise impact assessment dated 21/05/09 (received on 09/04/15), that identified local noise-sensitive receptors and potential sources of noise at the proposed plant. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS 4142:1997 to compare the predicted plant noise rating levels with the established background levels.

The 'Second Noise Impact Assessment' concluded that the overall noise rating level is predicted to be 3dB above the existing daytime background sound level. We are satisfied that an increase of 3dB is unlikely to result in a complaint.

Although the Applicant stated that the noise rating method of BS4142:1997 had been used, their report did not fully meet all the requirements set out in this standard. We have therefore included IC1 requiring the operator to demonstrate that the noise impact assessment was undertaken in accordance with BS4142:1997. If the assessment was not undertaken in accordance with this standard, we expect the Operator to commit to undertaking another noise impact assessment in accordance with the most up to date version of the standard.

5.4 Impact on Habitats sites, SSSIs and non-statutory conservation sites

Conservation sites are protected by legislation. The Habitats Directive provides the highest level of protection for SACs and SPAs; domestic legislation provides a lower but important level of protection for SSSIs. Finally the Environment Act provides more generalised protection for flora and fauna rather than for specifically named conservation designations. It is under the Environment Act that we assess other sites (such as local wildlife sites) which prevents us from permitting any facility that may cause significant pollution; and which offers a level of protection proportionate with other European and national legislation.

5.4.1 Sites Considered

Humber Estuary Special Area of Conservation, Special Protection Area and Ramsar site is located within 10Km of the Installation.

There are no Sites of Special Scientific Interest within 2Km of the proposed Installation.

Eppleworth Wood, Disused Railway Line, Raywell House and Willerby Low Road Local Wildlife Sites are located within 2Km of the Installation.

5.4.2 Habitats Assessment

We undertook an assessment of likely significant effect of the IVC facility on the sites designated under the Habitats Directive. We concluded that there is no likely significant effect alone, in combination with other Environment Agency permissions, plans or projects or in combination with permissions, plans or projects of other competent authorities.

Humber Estuary Special Area of Conservation, Special Protection Area and Ramsar site is 5.7km from the proposed IVC facility.

The proposal does not extend into any part of the European Site (nor does the installation boundary adjoin any part of the boundary of the relevant conservation site). Neither will any support operations (e.g. transport) take place within the European site. All activities will take place in an enclosed building minimising emissions to air including odour, bioaerosols, noise and dust. These measures together with the distance to the European site ensure that proposal will not therefore cause physical damage, habitat loss, smothering or disturbance by noise.

There will be no emissions to surface water or groundwater from activities at the installation. We consider that there is therefore no pathway or mechanism for impact that could result in acidification, changes of salinity, changes in thermal regime, entrapment, nutrient enrichment, toxic contamination, siltation or turbidity at the European Site.

5.4.3 Assessment of other conservation sites

We undertook an assessment of the impact of the IVC facility on the Local Wildlife Sites (LWS). We concluded that the IVC facility will not result in damage to these conservation sites.

The IVC facility will be located at the site of a candidate LWS: Disused Railway. A candidate LWS is a site that is awaiting a survey to confirm if it holds sufficient interest to warrant the designation of LWS.

East Riding Council has advised us that they plan to delete Disused Railway as a candidate LWS. This is because the site was originally proposed as a

LWS for its grassland interest. However, the grassland habitats have been lost, due to natural succession, to secondary scrub and woodland. With these features the site will not qualify as a LWS.

Eppleworth Wood LWS is located approximately 150m to the east of the proposed IVC facility. It is designated for its remnant ancient woodland. Raywell House LWS is located at least 1.7km to the south west of the proposed IVC facility. Willerby Low Road LWS is located at least 2.2km to the south west.

All activities will take place in an enclosed building minimising emissions to air including odour, bioaerosols, noise and dust. These measures and, in the case of Raywell House LWS and Willerby Low Road LWS, the distance involved, ensure that the proposal will not therefore change the ecological value of the LWS through physical damage, habitat loss, smothering or disturbance by noise.

There will be no emissions to surface water or groundwater from activities at the installation. We consider that there is therefore no pathway or mechanism for impact that could result in acidification, changes of salinity, changes in thermal regime, entrapment, nutrient enrichment, toxic contamination, siltation or turbidity at the LWS.

6 Application of Best Available Techniques

6.1 Assessment of Best Available Techniques

We have reviewed the operating techniques proposed by the applicant and compared these with the relevant guidance as set out in our 'How to Comply' Guidance, Sector Guidance Note IPPC S5.06 'Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste', (which has regard to the related BREF Note for the Waste Treatment Sector) and our horizontal guidance for IPPC.

We have assessed the Applicant's proposals as set out in their Application and compared them against the relevant BAT standards. Where necessary we have requested further information from the Applicant.

The installation will be designed, constructed and operated using BAT for the treatment of the permitted wastes. We are satisfied that the operating and abatement techniques are BAT for these types of waste. Our assessment of BAT is set out below.

Our assessment below does not include the existing open windrow composting of green waste. This is because we made an assessment of the Operator's proposals for this activity when the permit was previously varied and consolidated (EPR/PP3096ZA/V004, determined on 03/07/12) and are satisfied this remains valid.

In our decision document for application EPR/PP3096ZA/V004 we explained that 'in their application for the permit variation, the operator stated that they will follow Agency's guidance on "How to comply with your Environmental Permit" and the H4 Odour management guidance. The operator has also stated that they will follow the Sector Guidance Note on Integrated Pollution and Prevention Control S5.06. In schedule 1 table S1.2 of the permit we have incorporated the stated guidance as part of the approved operating techniques which will be followed by the Operator'. We consider that complying with this guidance is BAT for an installation and 'necessary measures' for a waste operation.

We are satisfied that in complying with these guidance documents the existing open windrow composting of green waste will continue to be operated using BAT for the treatment of the permitted wastes. Table S1.2 of the Consolidated Permit incorporates the relevant guidance as operating techniques for the existing open windrow composting of green waste.

6.2 Pre-acceptance and acceptance procedures

The Operator will have appropriate pre-acceptance and acceptance procedures. These are described in Sections 5.1 and 5.2 of the Applicant's 'Management System' (received 01/05/15).

At the pre-acceptance stage the Operator will obtain written information and samples of waste from prospective waste suppliers to determine the suitability of the waste for in-vessel composting. Verification of the written information may be required and the Operator will visit the waste producer when a third party, e.g. waste broker, is involved. Following characterisation of the waste, a technical assessment will be made of its suitability for treatment by technically competent staff.

The Operator will have a waste tracking system that starts at the pre-acceptance stage. Records will be kept for 3 years and will include the relevant details required by SGN S5.06.

On arrival at site, all waste will be weighed and associated documentation checked. Waste will not be accepted into site unless there is sufficient storage capacity and the site is adequately manned to receive waste.

Wastes will be inspected immediately upon offloading. The Operator will have criteria in place for the rejection of wastes. Rejected wastes will be stored in a quarantine area for no longer than 24 hours.

6.3 Waste Storage

All waste received at the IVC facility will be stored in the reception hall on impermeable surfacing with a sealed drainage system. All leachate from stored wastes will be collected via a drainage channel to a central sump from where it will be pumped to the IVC Leachate Tank. This is a double bunded tank with a capacity of 50m^3.

The waste storage area will be regularly checked and maintained. Waste will be stored for a maximum of 48 hours.

The facility will be treating ABPR waste; the Operator will ensure that segregation of ‘clean’ and ‘dirty’ areas and plant will be adhered to at all times in line with requirements of ABPR. We consult with the Animal and Plant Health Agency on all relevant applications and regulator initiated variations which may have a significant negative effect on the environment, animal health or the general public and include activities which involve animal by-products. In any permit, we do not duplicate ABPR controls but we liaise with the Animal and Plant Health Agency to ensure that permit conditions do not conflict with the ABPR approval. As we regulate discarded animal by-products as controlled waste, there are circumstances where animal by-products controls and waste controls co-exist. This means that some of the activities we regulate under the EPR will also have ABPR authorisations. There is a Memorandum of Understanding between the Animal and Plant Health Agency and the Environment Agency to help us deal with this overlap. We consulted the Animal and Plant Health Agency during the determination of this application. We received no comments from them.

The Operator will keep stocks of oversize and woody materials on site. This material will be used when necessary to adjust the feedstock to the IVC facility

so that it meets the required carbon:nitrogen balance. It will be stored on the open windrow composting pad in a distinct separate area to other waste.

All liquid generated from waste storage and treatment (i.e. leachate) will be collected at both the IVC facility and open windrow composting pad and stored in the IVC Leachate Tank and OWC Leachate ('Boythorpe') Tank respectively. Both tanks are bunded and will be regularly inspected for liquid level and integrity. When the capacity of either tank reaches 90% it will be emptied and the contents transferred off site for disposal at a licensed facility.

6.4 Waste treatment

6.4.1 Pre-treatment

Waste pre-treatment will be undertaken in the reception hall within 24 hours of waste receipt. It will include:

- Screening to remove large contaminants
- Picking line to remove unsuitable materials
- Shredding to comply with ABPR
- Addition of coarse or woody material to achieve the required carbon:nitrogen balance or to improve the feedstock structure.

Feedstock will be transferred to one of the enclosed tunnels using a front loader.

The reception hall will be under negative pressure. Air from the reception hall, will be extracted to the air treatment system discussed below.

6.4.2 In-Vessel Sanitisation

The IVC facility will have 8 tunnels each with a capacity of 315 tonnes. The tunnels are actively aerated via pipes incorporated into the floor of the tunnels. Any air which is not recirculated will be directed to the air treatment system prior to release to atmosphere.

The sanitisation phase will last a minimum of 2 days but typically 7 to 10 days. Throughout this phase the tunnels are actively monitored for temperature, moisture and oxygen using an automated computer system. Should the temperature become elevated above the critical limit (60ºC), the material be too wet (>65%) or oxygen levels be too low (<5%), the tunnels will be flushed with fresh air. Should additional moisture be required water will be added to the tunnels through an overhead sprinkler system. During the sanitisation phase, this water will be sourced from the IVC Leachate Tank. Post sanitisation, during cool down, water will be added from the freshwater tank only.

The compost tunnels will be free draining onto an enclosed drainage system to enable the removal of excessive moisture. This leachate from the tunnels will be directed to the IVC Leachate Tank.

Prior to tunnel unloading, for 72 hours, more air will be introduced into the tunnels to cool material to below 35ºC. Only one tunnel will be unloaded at any one time. Material will be unloaded directly onto vehicles for transfer via on-site roads to the open windrow composting pad.

6.4.3 Open Windrow Stabilisation and Maturation

Material from the IVC facility will undergo open windrow stabilisation and maturation on the same external composting pad as that used currently for green waste open windrow composting. This phase will last a minimum of 6 weeks.

The composting pad has an impermeable surface and sealed drainage system. All liquid generated on the composting pad, either from direct precipitation or from leaching from the windrows, is considered leachate. Leachate will be collected via drains and up to two sumps, in the OWC Leachate ('Boythorpe') Tank. This tank is fully bunded and has a capacity of 398m^3.

Material will be formed into windrows approximately 4m high, 5m wide and 40m long. Gaps of suitable width will be left to enable turning, monitoring and litter picking.

Temperature, moisture and oxygen levels will be monitored during this phase and the windrows will be turned a minimum of two times. If the temperature becomes elevated (>75ºC), material becomes too wet or oxygen level drops (<5%), the windrows will be turned to introduce fresh air. At this stage in the composting process, should additional moisture be required, clean water only will be applied to the windrows.

6.4.4 Screening

Following the actively managed composting phase, each batch will be screened to the required particle size grade of either 0-10mm or 0-20mm.

6.4.5 Product Storage

The screened compost will be transferred to the storage area where it will be stored in separate batches for up to 12 months prior to blending, bagging and/or dispatching to end markets.

Product meeting the CQP and BSI PAS 100:2011 can be stored without an impermeable surface and sealed drainage system. It will be checked weekly to ensure that there is no visible evidence of excessive liquor run-off emanating from the pile which could cause groundwater contamination. If the compost is considered to be too wet as indicated by moisture assessment, it will be transferred back to a distinct area separate from other material on the open windrow composting pad for further processing as required.

The non-PAS100 compost will be stored on the open windrow compost pad consisting of concrete hardstanding with a sealed drainage system. Any liquid from this compost will be collected via drains and up to two sumps, in the OWC Leachate ('Boythorpe') Tank. Composted materials will be stored prior to blending and dispatching to end markets or spreading on-site.

PAS100 and non-PAS100 materials will be clearly segregated from each other by physical location and batch markers.

6.5 Air Treatment System

Emissions to air are expected to occur at the IVC facility from waste acceptance, storage and pre-treatment activities in the reception hall, and as a result of aerobic degradation in the eight enclosed tunnels. Air will be extracted from the reception hall and tunnels and routed through the air treatment system.

The air treatment system is designed to treat ammonia and odours from the air extracted. It is discussed in greater detail in Section 6.11 of this document but will consist of:

- a ventilation and extraction system to keep the process building under negative pressure and provide aeration of the in-vessel composting process;
- two wet scrubber units to remove ammonia from the air stream;
- four biofilter units to remove odours prior to discharge to atmosphere.

We are satisfied that the scrubber/biofilter arrangement will offer good removal of pollutants and is BAT for this facility.

6.6 Point source emission of water to land

There will be one discharge of water from the IVC facility to land of uncontaminated roof and site surface water. This water will be collected and stored in the 'Rain Water Tank' (shown on Drawing 'IVC Site Layout Plan'). This tank has a capacity of 50m^3. The stored water will be used as wash down water.

Excess water will be directed from the Rain Water Tank via an underground drainage pipe to the 'Cellular Soakaway' (shown on Drawing 'IVC Site Layout Plan') from where it will discharge to land. Treated sewage effluent from the on-site welfare facilities will also discharge to land via the 'Cellular Soakaway'.

We are satisfied that subject to following our 'general binding rules' (https://www.gov.uk/using-a-septic-tank-or-sewage-treatment-plant-at-a-home-or-business) the Operator does not require a Water Discharge Permit for the combined discharge of roof and site surface water and treated sewage effluent. The Operator intends to discharge less than 2m^3 per day of sewage effluent. However the Operator has not confirmed that there is a drainage field around the Cellular Soakaway. This is a requirement of our 'general binding

rules'. But as the discharge of treated sewage effluent is not part of the Installation activities, we will address this separately with the Operator.

6.7 Fugitive emissions to air

All waste received at the Installation will be stored within the IVC building. Based upon the information provided in the application, we are satisfied that appropriate measures are in place to prevent fugitive emissions to air. The IVC building will be enclosed and kept under negative pressure. Extracted air is dealt with under the air treatment system described above. Further information on fugitive emissions to air is covered under the SSBRA section above and the OMP section below.

The activities that will have the greatest potential to generate airborne dust are the vehicle transfer of material from the IVC building to the open windrow pad, the turning of the windrows and the screening of composted material. We are satisfied that there will be no sensitive receptors within 250m of these activities. The operator has however committed to employing measures to minimise the generation of airborne dust. Material is expected to be moist at all stages of the composting process. The site will be kept clean and dust suppression will be used to dampen site roads by the application of clean water. Vehicle speeds will be limited onsite to 10mph.

There is one sensitive receptor within 250m of the IVC tunnel exits from which airborne dust could arise during the unloading of the tunnels after the sanitisation stage. We are however satisfied that the material will be sufficiently moist at this stage and unlikely to result in emissions to air.

6.8 Fugitive emissions to land and water

All operational areas within the IVC building will be covered with concrete that has been designed to collect liquids in a central sump connected to the integrally bunded leachate tank. All leachate generated in the eight enclosed tunnels will also drain to the same integrally bunded leachate tank. This tank will have a high level metre and an alarm system to notify staff if levels are too low or too high. To prevent overflowing, the tank will be emptied when the level reaches 90% of its capacity. This tank will not need to be de-sludged regularly because leachate is filtered through a screen before it enters the tank.

We are satisfied that the operator will have a regular inspection and maintenance regime for the drainage system.

The open windrow pad has an impermeable surface and sealed drainage system. All liquid generated on the composting pad, either from direct precipitation or from leaching from the windrows, is considered leachate. Leachate will be collected via drains and up to two sumps and directed to the OWC Leachate ('Boythorpe') Tank.

The OWC Leachate ('Boythorpe') Tank is fully bunded to prevent fugitive emissions in the event of catastrophic tank failure. The tank will be de-sludged annually and will be emptied when its contents reach 90% of the tank's capacity. The tank has an access ladder and will be inspected daily to ensure the tank has not reached 90% of its capacity.

We are not satisfied that visual inspection via a ladder is the most appropriate way to check the level of liquid in this tank. We have therefore included improvement condition IC4 which requires the operator to propose alternative methods. For example, a gauge on the side of the tank connected to an alarm system would allow for monitoring of liquid level.

Fuel will be held on site in a single fuel tank. The tank is surrounded by a bund which is capable of containing a minimum of 110% of the volume of fuel stored in the tank in line with the requirements of SGN S5.06. All pipework and associated infrastructure is enclosed within the bund. A lock is fitted to the tank valve to prevent unauthorised operation. All valves and gauges on the bund are constructed to prevent frost damage. The tank is clearly marked and carries signs showing the material contained within and its maximum capacity.

All oils and lubricants will be stored on site in barrels and containers and will be clearly labelled and kept in purpose-made bunded steel containers at all times when not in use.

We are satisfied with the proposed arrangements described in the Management System (received 01/05/15) and Fugitive Emissions Management Plan (received 25/03/15).

We have however included an improvement condition, IC2, requiring the Operator to submit a report to us that includes an inspection and maintenance programme for all underground storage and drainage structures. This includes the Cellular Soakaway adjacent to the IVC building and the sumps used for the collection of leachate from the open windrow pads. We need the Operator to be able to demonstrate that these underground structures do not represent a risk of fugitive emissions to land or groundwater by regularly testing their integrity. The Operator can choose how to test integrity and propose to us a timescale for the frequency of testing. We expect the report to include a commitment to undertake any remedial works that are found to be necessary following testing.

We have also included improvement condition IC3 requesting a report containing the results and recommendations of a review of secondary containment. This is a standard improvement condition in our permits for closed system composting systems.

6.9 Pests, scavenging birds and animals

Pests, scavenging birds and animals will be minimised by undertaking the receipt, storage, pre-treatment and sanitisation of food waste within the enclosed, negatively aerated, IVC building.

The IVC reception hall and operational plant and equipment will be fully washed down at the end of each working day to prevent the build up of waste residues which could attract any pests, scavenging birds or animals that gain access into the building.

The open windrows will be maintained under optimum temperature and moisture conditions to ensure they do not become odorous and attract pests, scavenging birds or animals.

We are satisfied that the operator will have in place appropriate measures to control the presence of pests, scavenging birds and animals on site. These measures are detailed in the Fugitive Emissions Management Plan (received 25/03/15). On detection or notification of any pests, scavenging birds or animals the Operator will immediately secure the attendance of a professional contractor to remove or deter them from site.

We have included condition 3.6.2 in the Consolidated Permit. In the unlikely event that pests become an issue at the site, this condition requires the operator to, if notified by us, submit to us for approval within the period specified, a management plan specifically for pests which identifies and minimises risks of pollution from pests.

6.10 Litter

We are satisfied that the Operator will have in place measures to prevent litter on site. As all waste will be accepted within the enclosed IVC building, any contraries within the waste will be removed and collected in a sealed container within the building.

The Operator will make daily checks within and around the site for litter and remove any materials found.

6.11 Odour

The Applicant submitted an Odour Management Plan (OMP) on 07/05/15 which we have approved, subject to a review of IVC tunnel unloading, waste transfer to the open windrow composting pad and windrow turning as per improvement condition IC5. This is discussed in Section 6.11.6 of this document.

During the determination, we requested more information on the OMP from the Applicant. The OMP has been revised a number of times in order to ensure it contains the technical information and operating techniques necessary to prevent odour pollution. The version we have approved contains only minor changes to that previously submitted by the Applicant on 30/04/15.

Based upon the information in the approved OMP we are satisfied that the appropriate measures will be in place to prevent or where that is not

practicable to minimise odour and to prevent pollution from odour. The Applicant is required to operate in accordance with the approved OMP.

6.11.1 Inventory of odourous materials

We are satisfied that the Applicant has provided an inventory of odourous materials. Table 2 ('Assessment of Odour Potential From Feedstock Inventory') in the OMP provides an assessment of the odour potential of green waste and food waste, that will be accepted, according to its source i.e. kerbside, civic amenity sites or commercial source. This assessment considers both typical and abnormal compositions of the wastes and provides an odour potential based on the likelihood of abnormal compositions as this would be the worst case.

Table 4 ('Feedstock Variation and Management Controls') addresses the impact of seasonal variation in the green and food waste and describes the management controls that will be put in place to mitigate odour.

Table 4 clearly states the expected age of all wastes on receipt and we are satisfied that, for food waste from commercial suppliers, the Applicant has committed to having contractual arrangements in place which will limit pre-acceptance storage by suppliers to a maximum of 7 days. We are also satisfied that all food waste will be processed immediately following receipt on site. The Operator will have contractual arrangements in place with all waste suppliers that sets out the expected quality of waste delivered to site. This will be constantly reviewed and feedback will be provided to suppliers to ensure the odour potential of waste is minimised at the acceptance stage.

We consider robust pre-acceptance procedures to be key to ensuring complete understanding of the odour potential of wastes accepted on site. The Applicant has provided pre-acceptance procedures in Section 5.1 of the OMP that are in accordance with SGN S5.06. The Operator will obtain written information from prospective waste suppliers to determine the odour potential of the waste. Verification of the written information may be required and the Operator will visit the waste producer when a third party, e.g. waste broker, is involved.

For specific new wastes, for which the source is not obvious and the wastes not well characterized or understood (i.e. wastes other than those such as supermarket food waste which would be well known), the Operator will obtain the results of sampling for Total moisture, pH and alkalinity, Ammonia and Kjeldahl Nitrogen, Heavy Metals and Potentially Toxic Elements (PTE), Total organic carbon (TOC), Particle size distribution and physical contaminants. This is so that the Operator knows that they will not be inundated with difficult or odorous wastes that could inhibit the composting process and/or generate odour emissions that cannot be controlled or abated. We expect any subsequent supply agreement to include details of procedures that will be undertaken to ensure the required feedstock quality is maintained during acceptance. This may include periodic sampling based on the variability of the feedstock

The Operator will have a waste tracking system that starts at the pre-acceptance stage. Records will be kept for 3 years and will include the relevant details required by SGN S5.06 including: producer details; date and arrival time on site; pre acceptance and acceptance analysis results; where the waste is physically located at any one time in relation to a site plan (down to the level of individual tunnels and windrows); and the dates and times for each movement of waste around the site. We consider this information to be of particular value in the event of any odour pollution event with a view to preventing its re-occurrence.

We are satisfied that the Operator will have criteria in place for the rejection of wastes and that rejected wastes will be stored in a quarantine area for no longer than 24 hours.

6.11.2 Appropriate methods for the management of odorous materials held on site

In Section 4.0 ('Odour Inventory') the Applicant has provided an inventory of odour sources according to the various stages of the composting process. This sets out a commitment from the Applicant to limit storage quantities and duration, at each stage, to quantities and timeframes that we consider acceptable in order to minimise odour.

The OMP does not describe all on-site storage facilities where odourous materials will be held. We are however satisfied that full details are provided in the Applicant's Drainage Management Plan (received 17/04/15).

In Section 5.0 of the OMP the Applicant has set out the monitoring parameters, critical limits and process controls that will be in place at each stage of the composting process. We are satisfied that these are appropriate to manage odourous material on site.

To prevent material becoming odourous in the IVC reception hall, we consider the Applicant's proposals to blend wastes to achieve the optimum carbon:nitrogen ratio, and therefore prevent the generation of excess ammonia and other odourous compounds, to be appropriate. We are also satisfied that the Applicant has committed to processing all waste as soon as possible by 'batch shredding'. This means that, on arrival in the IVC reception hall, loads will be tipped into batches prior to shredding, to allow traceability of materials and records to be held on batch tonnages and times. If batch shredding is not possible, we are satisfied with the Applicant's proposal to use a first in, first out system.

Throughout Section 5.0 the Applicant refers to Section 10.5 of the OMP which details the action that will be taken should the maximum quantities of waste specified at any stage in the composting process in Section 5.0 be reached. We are satisfied that in the event that the site reaches its maximum capacity, the operational manager will divert any further incoming waste to another permitted facility.

During the in-vessel sanitisation of waste and its subsequent maturation on the open windrow compost pad, the Applicant has committed to undertaking monitoring of moisture, temperature and oxygen to prevent the generation of odour. We are satisfied with the limits proposed by the Applicant and the process controls that will be employed to maintain optimum conditions.

6.11.3 Appropriate methods for preventing or reducing evaporation of odorous chemicals from odorous materials

Prior to unloading sanitised waste from a tunnel the Applicant has confirmed that waste will be taken through a cool down phase. We accept that this will reduce the likelihood of odour release due to evaporation from IVC building when a tunnel door is opened.

We are satisfied that the Operator will prevent evaporation of odourous compounds from the waste undergoing maturation on the open windrow composting pad by monitoring the temperature and moisture of the windrows. The Applicant has also proposed to visually check for steam emanating from the windrows and turn the windrows if the temperature is not within the defined critical limits.

In Section 6.1 of the OMP the Applicant has confirmed that the IVC Leachate Tank will be completely covered to prevent evaporation from the surface of the tank. We are satisfied that evaporation from the OWC Leachate ('Boythorpe') Tank will also be prevented by the BioCrust layer because the Operator will ensure that a thickness of at least 50mm of this layer is maintained. This layer, as discussed in Section 5.8.2 of the OMP, will cover the surface of the tank and actively treat evaporating air by fixing ammonia back into the leachate thereby preventing odour release from the tank.

6.11.4 Appropriate methods for the containment and abatement of any evaporated odorous chemicals

We accept that even though appropriate management of the IVC facility will minimise the potential for odour, containment and abatement of odour is still required. This is because, when compared to the open windrow composing activity, the IVC facility will accept and process a wider range of waste types with higher odour potential. We are satisfied with the proposals for containment and abatement that the Applicant has made in Section 7.0 of the OMP.

All waste will be accepted, stored and shredded in the IVC reception hall. This will be an enclosed system operated under negative pressure (-20Pa to -50Pa) with fast action roller doors that open only during waste delivery. Only one door will be open at any one time.

The waste reception hall will be continually vented as the source of air for aerating the compost tunnels. We are satisfied with the Applicant's proposals

to ventilate the reception hall by 4.2 air exchanges per hour under normal operating conditions.

We are satisfied that the air flow balance through the air extraction system will be maintained to ensure the proposed negative pressure of between -20Pa and -50Pa is maintained. A computer system will monitor flow rates and pressures.

The eight composting tunnels (or vessels) are fully contained. Air and water are supplied to them as required by an automated system. We are satisfied that, by circulating the process air to control temperature, humidity and oxygen concentration, odour generation will also be minimised.

The Operator will have in place an appropriate abatement system to treat exhaust air from the process tunnels and any excess air received directly from the reception hall. The abatement system will include

- two wet scrubber units to remove ammonia from the air stream;
- four biofilter units to remove odours prior to discharge to atmosphere.

We are satisfied that the scrubber/biofilter arrangement will offer good removal of pollutants and is BAT for this facility.

We are satisfied that all ducting for the abatement system is made from seaworthy Aluminium $AlMg^3$ because this does not corrode and is not sensitive to condensation of moisture and organic acids. We will confirm when we inspect the facility, that the ducting is checked on a regular basis to remove dirt and any condensation as part of the preventative maintenance procedures.

We are satisfied that the abatement system has been designed to handle a maximum air flow of 99,000m^3/h. Under normal operations, the total airflow is expected to be 68,640m^3/h.

Each scrubber is designed to remove ammonia and cool down the air to a maximum of 37ºC, which is the operational maximum temperature of the biofilter. We accept that, as well as being a potential pollutant, high levels of ammonia can affect the operation of the biofilter.

In each scrubber, ammonia will be quickly dissolved in the water and converted eventually to nitrogen. Part of the ammonia will remain dissolved in the humidity of the air. This remaining ammonia will be blown through biofilter material where it will be turned into nitrogen which is odourless.

Under normal operating conditions the air velocity in the scrubber will be 3.36m/s and the residence time will be 3.6 seconds. At maximum airflow the air velocity in the scrubber will be 4.85m/s and the residence time will be 2.54 seconds. We are satisfied with these residence times.

A biofilter is described in the Waste BREF (Waste Treatment BREF for the Waste Treatments Industries, August 2006) as:

'….*an apparatus filled with decomposable material such as compost, bark or a mixture of turf and heather, etc. Micro-organisms (fungi, bacteria, viruses and algae) are resident on the material. The exhaust airflows through the material while the micro-organisms decompose the harmful substances. Water and airflow normally run countercurrently. A biofilter is not a filter in the mechanical sense (i.e. it does not lead to a separation of particles), but it is a reactor where a certain range of harmful substances are metabolised to harmless substances*.'

Four biofilter fans will blow the process air through the scrubbers followed by a biofilter. Each biofilter is built with a spigot floor, for optimal air distribution. The capacity of each fan will be 24,750m3/h. At maximum capacity the biofilter fans will supply 150m^3/h/m^2 of air to the biofilters. The maximum airflow through each set of 4 tunnels during normal operation is 34,000m3/hr. Each pair of biofilters can handle 49,500m^3/hr of process air per set of tunnels. We are satisfied that this means there is additional capacity of 15,500m^3/hr of airflow that can be utilised for cooling or extraction.

We are satisfied with the proposed construction and operating conditions of the biofilters. Each biofilter will be constructed of coarse shredded virgin wood. The biofilters will be filled with 2.5m^3/m^2 of media resulting in scrubbed air exiting each biofilter at a velocity of 0.04m/s at maximum capacity, with a residence time of 61 seconds. At nominal operational conditions the velocity will be 0.03m/s and residence time will be 86 seconds. We are satisfied with these residence times.

Over time the biofilter material will lose its coarseness. The Operator will identify this by visual inspection of the biofilter media and back-pressure measurements. Once the media has been identified as requiring replacement, fresh wood chip material will be introduced. The spent biofilter media will be composted on-site. We are satisfied that when media is being replaced, extracted air can be diverted to another biofilter during the 24hr period in which the media is replaced.

We are satisfied with the Applicant's proposal for the monitoring of air humidity, temperature and back-pressure to ensure the biofilters operate effectively.

During commissioning the Applicant has proposed to monitor ammonia at the inlet and outlet of the wet scrubbers three times to ensure that they are working effectively. We have included (in pre-operational measure 1 (POM 1)) a requirement for the Operator to also monitor the odour unit levels at each biofilter for at least three different batches of waste during commissioning. Measuring biofilter outlet odour unit levels is possible with BS EN13725 MCERTS monitoring technique even without a final stack. We have also included an improvement condition, IC6. This requires the Operator to propose routine monitoring of the wet scrubbers and biofilters under normal

operating conditions based on the results of the commissioning data. In Section 5.8.1 of the OMP the Applicant has proposed to monitor ammonia at the outlet of the wet scrubbers on a monthly basis. As part of this review the Applicant will either need to provide further justification for why monitoring has not been proposed on a more frequent basis or propose a more frequent basis.

6.11.5 Appropriate measures for improving the dispersion of odorous releases before neighbours are exposed

We accept that the elevated position of the biofilters, on top of the IVC building, enhances dispersion of air from them. The point of exit at the top of the biofilter will be approximately 9m above ground level.

The Applicant did not provide a justified likely odour concentration at the site boundary. But we are satisfied that, given the location of the biofilters on the roof of the building, residual odour from the biofilters will be dispersed effectively beyond the installation boundary.

6.11.6 Appropriate measures for minimising annoyance among neighbours who may be exposed to odorous emissions

In Section 9.5 of the OMP the Applicant has discussed past odour complaints.

A high number of odour complaints were received in 2011 and 2012 relating to the existing open windrow composting activity. The Applicant has explained that substantiated odour complaints were attributed to tannery wastes which were accepted and processed on site in accordance with the permit conditions at the time.

However, given the substantiated odour complaints that were received, the Operator considered the existing infrastructure for open windrow composting to be unsuitable for the processing of tannery waste. For this reason, the Operator has not accepted this waste stream on site since 2012.

Since 2012 a programme of site investment has also been undertaken to prevent further odour complaints. This has included capital investment of £500,000 in site infrastructure and equipment including:

- Extension to the concrete pad and improvement of existing pad conditions;
- Refurbishment of the OWC Leachate Storage Tank;
- Installation of automated float valves and pumps from sumps to the OWC Leachate Storage Tank;
- Purchase of a new green waste shredder;
- Purchase of a new compost screener; and
- Purchase of new front loading shovels.

Over the last 18 months, the number of odour complaints that the Operator has received has reduced significantly.

There is one direction from the IVC building (to the North North East) in which a sensitive receptor (Eppleworth Wood Farm) is located within 250m. Several sensitive receptors are located in a number of directions (from the south west to the south east) at distances greater than 250m from the open windrow pad.

The Applicant has proposed avoiding potentially odourous processes when the wind direction is towards sensitive receptors. This will include delaying windrow turning and delaying IVC tunnel unloading and transportation of waste to the open windrow composting pad. The Applicant considers these measures to be in line with our Section 4.8 ('Ceasing or reducing operations') of our guidance 'H4 Odour Management'.

We are satisfied with the Applicant's proposed measures. However in the unlikely event that they are not effective, we would require further measures. These could be include an airlock system at the IVC tunnel exits (to provide containment during the unloading of tunnels), covering waste that is being transported from the IVC tunnels to the open windrow composting pads and covering of the windrows themselves.

We have therefore included improvement condition IC5 requesting the Operator to review, and report on, the effectiveness of the proposed measures for minimising odour after one year of normal operation of the IVC facility. The Operator should refer to any odour complaints received during the first year of normal operation and include in their report a discussion on where substantiated complaints can be linked to windrow turning and/or IVC tunnel unloading and/or waste transportation. Where odour complaints have been caused by one or more of these activities we expect the Operator to propose further measures to prevent odour complaints.

6.11.7 How odorous emissions might be affected by emergencies or incidents

We are satisfied that, in Section 10 of the OMP, the Applicant has adequately considered the impact of emergencies and incidents on odour emissions.

We are satisfied that Table 10 sets out the contingency actions that will be taken should there be any machinery breakdown. We are satisfied with the timescales that the Applicant has proposed for plant or parts repair or replacement and the Applicant's commitment to cease waste acceptance should any machinery breakdown prevent processing of wastes within the timescales set out in Section 5.0 of the OMP.

We are satisfied with the Applicant's assessment of key emergencies: staff absence; flooding; fire; and the site at full capacity.

6.12 Noise and vibration

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration pollution from the site.

The application contained a noise impact assessment which is discussed in section 5.3 above.

The application did not contain a noise management plan. We have therefore included condition 3.4.2 which requires the operator to, if notified by us that the activities are giving rise to pollution outside the site due to noise and vibration, submit to us for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration.

6.13 Commissioning

As the in-vessel composting plant is yet to be built, we have included a pre-operational measure (POM 1) which requires the Operator to submit a written commissioning plan for the new IVC facility (including timescales for completion) to us for approval. Commissioning trials are required for the Operator to demonstrate that the composting process (including the proposed odour abatement system – air extraction and biofilter system) is working effectively and that appropriate measures are in place to protect the environment and human health during this period (prior to the commencement of operations). We have discussed POM 1 in Section 6.11.4 above.

The commissioning plan should include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment and report to us in the event that actual emissions exceed expected emissions.

As odour is the key issue at this facility, we expect the Operator to pay particular attention to it in the commissioning plan.

6.14 Monitoring

We have set process monitoring requirements as detailed in Schedule 3 of the Consolidated Permit. These requirements are consistent with the requirements at other installations undertaking the same activities.

Bioaerosol monitoring is covered in the SSBRA section above. We have included pre-operational measure POM 2 which requires the Operator to submit a bioaerosols background sampling report to inform future bioaerosol monitoring.

6.15 Reporting

We have specified the reporting requirements in Schedule 5 of the Consolidated Permit either to meet the reporting requirements set out in the IED, or to ensure data is reported to enable timely review by the Environment Agency to ensure compliance with permit conditions and to monitor the efficiency of material use and energy recovery at the installation.

7 Other legal requirements

In this section we explain how we have addressed other relevant legal requirements, to the extent that we have not addressed them elsewhere in this document.

7.1 The EPR 2010 and related Directives

The EPR delivers the requirements of a number of European and national laws.

7.1.1 Schedule 9 to the EPR 2010 – Waste Framework Directive

As the Installation involves the treatment of waste, it is carrying out a *waste operation* for the purposes of the EPR 2010, and the requirements of Schedule 9 therefore apply. This means that we must exercise our functions so as to ensure implementation of certain articles of the WFD.

We must exercise our relevant functions for the purposes of ensuring that the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste and that any waste generated is treated in accordance with Article 4 of the Waste Framework Directive. (See also section 4.3.9)

The conditions of the permit ensure that waste generation from the facility is minimised. Where the production of waste cannot be prevented it will be recovered wherever possible or otherwise disposed of in a manner that minimises its impact on the environment. This is in accordance with Article 4.

We must also exercise our relevant functions for the purposes of implementing Article 13 of the Waste Framework Directive; ensuring that the requirements in the second paragraph of Article 23(1) of the Waste Framework Directive are met; and ensuring compliance with Articles 18(2)(b), 18(2)(c), 23(3), 23(4) and 35(1) of the Waste Framework Directive.

Article 13 relates to the protection of human health and the environment. These objectives are addressed elsewhere in this document.

Article 23(1) requires the permit to specify:

(a) the types and quantities of waste that may be treated;
(b) for each type of operation permitted, the technical and any other requirements relevant to the site concerned;
(c) the safety and precautionary measures to be taken;
(d) the method to be used for each type of operation;
(e) such monitoring and control operations as may be necessary;
(f) such closure and after-care provisions as may be necessary.

These are all covered by permit conditions.

The permit does not allow the mixing of hazardous waste so Article 18(2) is not relevant.

We consider that the intended method of waste treatment is acceptable from the point of view of environmental protection so Article 23(3) does not apply.

Article 35(1) relates to record keeping and its requirements are delivered through permit conditions.

7.1.2 Schedule 22 to the EPR 2010 – Groundwater, Water Framework and Groundwater Daughter Directives

To the extent that it might lead to a discharge of pollutants to groundwater (a "groundwater activity" under the EPR 2010), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non-hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution, and satisfies the requirements of Schedule 22.

No releases to groundwater from the Installation are permitted. The Permit also requires material storage areas to be designed and maintained to a high standard to prevent accidental releases.

7.1.3 Directive 2003/35/EC – The Public Participation Directive

Regulation 59 of the EPR 2010 requires the Environment Agency to prepare and publish a statement of its policies for complying with its public participation duties. We have published our public participation statement.

This Application is being consulted upon in line with this statement, as well as with our guidance RGS6 on Sites of High Public Interest, which addresses specifically extended consultation arrangements for determinations where public interest is particularly high. This satisfies the requirements of the Public Participation Directive.

Our draft decision in this case has been reached following a programme of extended public consultation, both on the original application and later, separately, on the draft permit and a draft decision document. The way in which this has been done is set out in Section 2.2. A summary of the responses received to our consultations and our consideration of them is set out in Annex 2.

7.2 National primary legislation

7.2.1 Environment Act 1995

(i) Section 4 (Pursuit of Sustainable Development)

We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers and set out in guidance issued to us. The Secretary of State for Environment, Food and Rural Affairs has issued *The Environment Agency's Objectives and Contribution to Sustainable Development: Statutory Guidance (December 2002)*. This document:

> "*provides guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency*".

In respect of regulation of industrial pollution through the EPR, the Guidance refers in particular to the objective of setting permit conditions "*in a consistent and proportionate fashion based on Best Available Techniques and taking into account all relevant matters…*". The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

(ii) Section 7 (Pursuit of Conservation Objectives)

We considered whether we should impose any additional or different requirements in terms of our duty to have regard to the various conservation objectives set out in Section 7, but concluded that we should not.

We have considered the impact of the installation on local wildlife sites within 2Km which are not designated as either European Sites or SSSIs. We are satisfied that no additional conditions are required.

(iii) Section 81 (National Air Quality Strategy)

We have had regard to the National Air Quality Strategy and consider that our decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

7.2.2 Human Rights Act 1998

We have considered potential interference with rights addressed by the European Convention on Human Rights in reaching our decision and consider that our decision is compatible with our duties under the Human Rights Act 1998. In particular, we have considered the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1, First Protocol). We do not believe that Convention rights are engaged in relation to this determination.

7.2.3 Countryside and Rights of Way Act 2000 (CROW 2000)

Section 85 of this Act imposes a duty on Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty (AONB). There is no AONB which could be affected by the Installation.

7.2.4 Wildlife and Countryside Act 1981

Under section 28G of the Wildlife and Countryside Act 1981 the Environment Agency has a duty to take reasonable steps to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which a site is of special scientific interest. Under section 28I the Environment Agency has a duty to consult Natural England in relation to any permit that is likely to damage SSSIs.

There are no Sites of Special Scientific Interest within 2Km of the proposed Installation.

7.2.5 Natural Environment and Rural Communities Act 2006

Section 40 of this Act requires us to have regard, so far as is consistent with the proper exercise of our functions, to the purpose of conserving biodiversity. We have done so and consider that no different or additional conditions in the Permit are required.

7.3 National secondary legislation

7.3.1 The Conservation of Natural Habitats and Species Regulations 2010

We have assessed the Application in accordance with guidance agreed jointly with Natural England and concluded that there will be no likely significant effect on any European Site.

The habitat assessment is summarised in greater detail in section 5.4.1 of this document. A copy of the full Appendix 11 Assessment, that we have completed and sent to Natural England for information only, can be found on the public register.

7.3.2 Water Framework Directive Regulations 2003

Consideration has been given to whether any additional requirements should be imposed in terms of the Environment Agency's duty under regulation 3 to secure the requirements of the Water Framework Directive through (inter alia) EP permits, but it is felt that existing conditions are sufficient in this regard and no other appropriate requirements have been identified.

7.4 Other relevant legal requirements

7.4.1 Duty to Involve

S23 of the Local Democracy, Economic Development and Construction Act 2009 require us where we consider it appropriate to take such steps as we consider appropriate to secure the involvement of interested persons in the exercise of our functions by providing them with information, consulting them

or involving them in any other way. S24 requires us to have regard to any Secretary of State guidance as to how we should do that.

The way in which the Environment Agency has consulted with the public and other interested parties is set out in section 2.2 of this document. The way in which we have taken account of the representations we have received is set out in Annex 4. Our public consultation duties are also set out in the EP Regulations, and our statutory Public Participation Statement, which implement the requirements of the Public Participation Directive. In addition to meeting our consultation responsibilities, we have also taken account of our guidance in Environment Agency Guidance Note RGS6 and the Environment Agency's Building Trust with Communities toolkit.

ANNEX 1 Pre-Operational Conditions

Based on the information on the Application, we consider that we do need to impose pre-operational conditions. These conditions are set out below and referred to, where applicable, in the text of the decision document. We are using these conditions to require the Operator to confirm that the details and measures proposed in the Application have been adopted or implemented prior to the operation of the Installation.

Reference	Pre-operational measures
POM 1	At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of Activity A1 (composting in closed vessels followed by open windrows), the operator shall provide a written commissioning plan (including timescales for completion) for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. The plan shall include duct monitoring of the wet scrubbers (for ammonia) and biofilters (for odour) in order to provide evidence of effectiveness of odour controls performance to minimise risk of odour pollution beyond the installation boundary. The plan shall include a commitment to collect, as a minimum, data from three separate batch cycles. Commissioning shall be carried out in accordance with the commissioning plan as approved by the Environment Agency. No site operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written permission under this condition.
POM 2	At least 4 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of Activity A1, the operator shall submit a bioaerosols background sampling report to the Environment Agency for written approval. The sampling shall be undertaken in accordance with the Industry Standard Protocol. No site operations shall commence or waste accepted at the facility unless the Environment Agency has given prior written permission under this condition.

ANNEX 2 Improvement Conditions

Based in the information in the Application we consider that we need to set improvement conditions. These conditions are set out below - justifications for these are provided at the relevant section of the decision document. We are using these conditions to require the Operator to provide the Environment Agency with details that need to be established or confirmed during and/or after commissioning.

Reference	Improvement measure	Completion date
IC1	Submit a written report to the Environment Agency. The report shall contain evidence to demonstrate whether or not the noise impact assessment dated 17 July 2014 was undertaken in accordance with BS4142:1997. The report should include, but not be limited to: - Confirmation that all parts of Section 10 of BS4142:1997 were followed; - Justification for the use of background sound levels measured in 2009; - Justification for not applying a correction of +5dB to the rating level (as noise from increased movement of on-site vehicles, deliveries and departures from the site are irregular enough to attract attention); - A site plan showing site topography and the location of background sound level measurements; - Clarification as to which version of BS5228 was used; and - Confirmation that, if the noise impact assessment dated 17 July 2014 was not undertaken in accordance with BS4142:1997, then a noise impact assessment in accordance with the most up to date version of BS4142 will be undertaken within a defined timeframe.	DD/MM/YY *1 month from date of issue of variation notice*
IC2	Submit a written plan to the Environment Agency for approval. The plan shall include an inspection and maintenance programme for all underground storage and drainage structures at the IVC facility and open windrow pads. This includes the cellular attenuation system and sumps used for the collection of leachate from the open windrow pads. The plan should be prepared with reference to Section 2.2.5 of Sector guidance note IPPC S5.06 'Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste'. The plan shall confirm the tests that will be undertaken to confirm the integrity of underground structures, the frequency of periodic testing and include a commitment to undertake any necessary remedial measures within a defined timescale.	DD/MM/YY *1 month from date of issue of variation notice*

	The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan. The plan shall be implemented in accordance with the Environment Agency's written approval.	
IC3	Submit a written report to the Environment Agency for approval. The report must contain the results and recommendations of a review of the design, method of construction and integrity of the proposed site secondary containment. The review must - be carried out by a qualified structural engineer; - compare the constructed secondary containment against the standards set out in Section 2.2.5 of Sector guidance note IPPC S5.06 'Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste' and CIRIA C736 'Containment Systems for the Prevention of Pollution – secondary, tertiary and other measures for industrial and commercial premises' or other relevant industry standard. The report must include: - physical condition of the secondary containment; - the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure; - any work required to ensure compliance with the standards set out in CIRIA C736 or other relevant industry standard; and - a preventative maintenance and inspection regime. Any works required, and the preventative maintenance and inspection regime, shall be implemented in accordance with the Environment Agency's written approval.	DD/MM/YY *6 months from date of issue of variation notice*
IC4	Submit a written report to the Environment Agency for approval. The report must contain the results of a review of the method for measuring the level of leachate in the 'OWC Leachate Tank (Boythorpe)' as shown on Drawing 'Open Windrow Site Plan' and propose alternative methods to visual inspection. The report must contain dates for the implementation of individual measures. The individual measures shall be implemented in accordance with the Environment Agency's written approval. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.	DD/MM/YY *6 months from date of issue of variation notice*

IC5	Submit a written report to the Environment Agency for approval. The report must contain a review of the effectiveness of the measures described in Section 9.1 of the Odour Management Plan to prevent odour pollution when wind is in the direction of sensitive receptors during: a) the unloading of IVC tunnels; b) the transportation of waste from the IVC tunnels to the open windrow composting pad; or c) the turning of windrows. The report must review one year of normal operation of the IVC facility. The report must include a discussion of any odour complaints received since the commencement of normal operation of the IVC facility and, where substantiated, a discussion of the relationship between the complaints and the above activities a) to c). Where odour complaints have been caused by one or more of the above activities a) to c) the report must contain proposals for measures to prevent further complaints. The report must contain dates for the implementation of individual measures and a timescale for updating the Odour Management Plan with reference to such individual measures. The individual measures shall be implemented in accordance with the Environment Agency's written approval. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report.	DD/MM/YY *18 months from date of issue of variation notice*
IC6	Submit a written plan to the Environment Agency for approval. The plan shall contain proposals for routine monitoring of the wet scrubbers and biofilters under normal operating conditions taking into account the results of the commissioning data collected under POM1. The plan shall conclude with a summary of changes to the Odour Management Plan in light of the commissioning monitoring results and a timescale for updating the Odour Management Plan. The plan shall be implemented in accordance with the Environment Agency's written approval.	1 month after the completion of commissioning

ANNEX 3 Consultation Reponses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with the Environment Agency's Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on the Environment Agency and Local Authority public registers.

The Application was advertised on the Environment Agency website from 18 February 2015 to 24 March 2015 and in the Hull Daily Mail on 18 February 2015. Copies of the Application were placed on the Environment Agency Public Register at Environment Agency, Lateral, 8 City Walk, Leeds, LS11 9AT and (by appointment) at our Environment Agency office in Beverley (Crosskill House, Mill Lane, Beverley, East Yorkshire HU17 9JW).

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

- Public Protection, Environmental Health, East Riding of Yorkshire Council
- Food Standards Agency
- Health and Safety Executive
- Public Health England, Centre for Radiation, Chemical and Environmental Hazards
- Director of Public Health, East Riding of Yorkshire Council
- Animal and Plant Health Agency Field Services

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from Health and Safety Executive	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No issues raised	No action to be taken.

Response Received from Public Protection, Environmental Health, East Riding of Yorkshire Council	
Brief summary of issues raised:	Summary of action taken / how this has been covered
The Environmental Control Section in Beverley has received approximately 35 complaints from residents in the area around Albion Lane since 2010, about alleged odour problems associated with the activities at the Biowise site. These complaints have been referred to the Environment	The Applicant has submitted a revised OMP which we have approved. We are satisfied that this revised OMP addresses the risk of odour from both the existing activities and the new IVC facility and includes appropriate measures to prevent odour pollution. We are satisfied that

Agency Incident Hotline. You may already be aware of these. With this email, I have attached a newsletter that was produced by the Environment Agency in 2012 in relation to the complaints that were being made at that time. I am not sure whether the proposed in-vessel composting facility will introduce a new source of potential odour to the site, or whether there is an odour management plan in place that will be sufficient to ensure that any problems are addressed.	the Installation will not cause significant pollution of the environment or harm to human health due to odour. We discuss the OMP in detail in Section 6.11 of this document. We have included condition 3.3.1 which requires emissions from the activities to be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

Response Received from Public Health England, Centre for Radiation, Chemical and Environmental Hazards	
Brief summary of issues raised:	Summary of action taken / how this has been covered
In 2012/13 our predecessor organisation, the Health Protection Agency (HPA) did receive enquiries from local residents relating to an Environment Agency investigation into odour from the existing installation and concerns about possible health effects. The HPA advice was that whilst these odours could amount to a nuisance and be unpleasant, there was no evidence that they would produce direct health effects. Based on the information contained in the application supplied to us, Public Health England has no significant concerns regarding the risk to the health of the local population as a result of the proposed variations to the existing bespoke permit for this installation. This consultation response is based on the assumption that the permit	No action to be taken. We are satisfied that the installation will operated in accordance with BAT.

holder shall take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice.	

2) Consultation Responses from Members of the Public and Community Organisations

a) Representations from Parish Councils

Representations were received from Kirk Ella and West Ella Parish Council, who raised the following issues:

Response Received from Kirk Ella and West Ella Parish Council	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Please ensure that the conditions of the new permit will be sufficient to stop bad odours reaching our residents.	We have summarised our assessment of odour under 1) above.

b) Representations from Community and Other Organisations

Representations were received from Springhead Residents Association; one of the issues those raised was the same as that raised by Kirk Ella and West Ella Parish Council.

Response Received from Springhead Residents Association	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Residents have already had to endure odour problems (2012). With the capacity and kind of waste now applied for the odour will become considerably stronger and unbearable.	We have summarised our assessment of odour under 1) above.
Having to breathe in this polluted air is dangerous and will cause medical problems.	We have consulted with Public Health England (PHE). PHE have no significant concerns regarding the risk of health of the local population as a result of the IVC facility. PHE stated in their response to us that their predecessor organisation, the Health Protection Agency, have previously advised local residents (in 2012/13) that whilst odours from the existing activities could be a

	nuisance, there was no evidence that they could cause direct health effects. We have also consulted with East Riding of Yorkshire Council (Public Protection, Environmental Health) and the Health and Safety Executive. Neither consultee raised specific issues with regards to an impact on health due to odour. We have included conditions 3.2, 3.3, 3.4 and 3.6 in the consolidated permit which require emissions from activities at the site not to cause pollution outside the site. We have also approved an Odour Management Plan, Fugitive Emissions Management Plan, Drainage Management Plan and Accident management Plan which are discussed in the document above. We consider the measures set out in the Management Plans will prevent or where that is not practicable minimise emissions from the site. We are satisfied that the Installation will not cause significant pollution of the environment or harm to human health due to emissions to air.
The site is too close to residential areas.	Decisions over land use are matters for the Planning system. The location of the regulated facility is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this decision document.
When the site was first opened for garden and food waste we feared that an application for other wastes would be forthcoming.	An Operator can apply to vary their environmental permit at any time. We will consider an application to vary a permit on its own merits but also with regard to other existing activities in

They are using the tactics of starting small and working up.	the same location. We are satisfied that the new IVC facility, both as a standalone activity and also in combination with the existing activities on site, can be undertaken in a manner that will ensure that the environment and human health are protected.

c) Representations from Individual Members of the Public

A total of 28 of responses were received from individual members of the public. Many of the issues raised were the same as those considered above.

Where the same issues were raised by more than one person we have only summarised the issue and our response to it once.

Responses Received from Individual Members of the Public	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Odour - History of odour issues at the site - Concern about new odour emissions due to different wastes being accepted - Increased activity will bring more obnoxious smells	We have summarised our assessment of odour under 1) above.
Emissions to air from the site and impact on the environment and human health - Irritated eyes, sore throats, respiratory infections, asthma and skin complaints - impact on flora and fauna and crops - nuisance dust on washing and clothing outside	We have summarised our assessment of impact on human health under 2)b) above.
Bioaerosols and their impact on human health	We are satisfied that the Site Specific Bioaerosol Risk Assessment (SSBRA) provided by the Applicant demonstrates that emissions of bioaerosols can, and will, be maintained no higher than acceptable levels at the sensitive receptors. We have discussed the SSBRA in detail in Section 5.2 of this document.
Waste types	We have discussed the waste types

- Concern about emissions from human and animal waste including faeces, urine, animal tissue waste - Increase and expansion in range of waste - Increase in capacity will lead to further leaks	to be accepted in Section 4.3.7 above. We are satisfied that the waste types that the Applicant has proposed to accept are appropriate for the in-vessel composting process. The wastes are well categorised and understood and are considered amenable to aerobic composting and biological treatment without the generation of emissions that cannot be controlled. The waste types are the same as those specified in our standard rules permit template for in-vessel composting (SR2012No4). We have included the waste types in accordance with our internal Technical Guidance Note 'Framework for assessing suitability of wastes going to anaerobic digestion, composting and biological treatment'. We are satisfied that only animal faeces and urine from an agricultural source, not municipal, are permitted to be accepted. The Applicant has set out rejection criteria (in Section 5.4.1 of the Management System) for wastes accepted to the site. Wastes that will be rejected include dog, cat and horse waste.
Location too close to - residential areas - businesses - medical, retail and hospitality facilities	We have summarised our assessment of location under 2)b) above.
Traffic - Increased number of vehicles entering and exiting the site - Increased traffic on local narrow roads - Further disruption to traffic flow at approaches to the 'Waitrose' roundabout on the Beverley to Humber Bridge road	Vehicle access to the installation and traffic movements are relevant considerations for the grant of planning permission, but do not form part of the Environmental Permit decision making process.

Operator's previous record of compliance and competency - Poor past record of odour management - Belief that the Operator is negligent on occasions - Operator is not able to manage their existing site and therefore will not be able to correctly manage any future developments	We have discussed the history of odour complaints in Section 6.11.6 above. We are satisfied that the Operator has made changes to the way in which odour is managed on site by no longer accepting tannery wastes and by improving site infrastructure and equipment. We have considered the competence of the Applicant in accordance with our Regulatory Guidance Series, No RGN 5 'Operator competence'. Condition 1.1.1 of the consolidated permit requires the Operator to manage and operator the activities: (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and (b) using sufficient competent persons and resources. We are satisfied that the Applicant has provided evidence that they will have a technically competent manager (TCM) that holds a relevant qualification. The Applicant has employed a new full-time TCM who has over 20 years operational, technical and site managerial experience in the waste management sector. We are satisfied that the new TCM has previously managed open windrow and in-vessel composting facilities and has an up-to-date certificate of continuing competence (issued 22/04/15). We are satisfied that the Applicant will comply with the conditions of the Consolidated Permit and that this will protect the environment and human

	health. We will use our enforcement powers to get the best environmental outcome. If possible we try to get the best outcome by giving advice and guidance but we may choose to take enforcement action, including prosecution, when an incident has taken place, permit conditions have not been met or legislation is not complied with.
Comment that 'the local planning authority granted approval for the plant despite professional opinion which stated that these were smelly operations. Surely then THEY should be held responsible for any breaches of the planning regulations rather than leaving the control within the domain of the EA.'	The EPR requires the prevention of pollution including odour. As the competent authority for the EPR we must be satisfied with the way in which the Applicant intends to control emissions of odour from the site. Any concerns with the determination of the planning application need to be addressed to the local planning authority.
Referred to a letter from us which stated: 'However, it should be noted that there may be residual odour or noise at certain times during operations of this kind'	We have summarised our assessment of odour under 1) above. Whilst we cannot guarantee that there will be no odour associated with the regulated facilities, we do not consider that the odour will be at levels that will cause pollution of the environment or harm to human health.
Questioned 'if this is a closed vessel why is there a smell, is it a storage problem?'	We are unclear whether this question relates to the existing open windrow composting, or the new proposed IVC facility. The IVC facility, which will have enclosed vessels (tunnels), is not yet operational so there can be no odour associated with it at present. For the existing activities, we are satisfied that the revised OMP, that we have approved, addresses the risk of odour from them and includes appropriate measures to prevent odour pollution.
Comment that they were told 'that this	The adjacent landfill site is not the

Tip was being capped and now I can see waste paper blowing in the wind'.	subject of this Application.
'Why should the waste end product from the new facility be placed on this site area'.	We are unclear whether 'this site area' refers to the site that is the subject of this Application, or if it refers to the landfill site mentioned in the previous comment. We have included the storage of compost as a Directly Associated Activity in Table S1.1 of the Consolidated Permit. Where compost is stored is an operational decision for the Applicant. We have assessed the risks associated with the storage of compost and are satisfied that the Applicant will have appropriate measures in place to prevent pollution of the environment or harm to human health.
Objects to the application without a full consultation process with local residents.	We have explained in Section 2.2 of this document how we have carried out public consultation in a way that satisfies the requirements of the Aarhus Convention and meets our obligations under the Local Democracy, Economic Development and Construction Act 2009. We consulted the public on the Application and are now consulting the public on our draft decision to issue a Consolidated Permit.
Raised issue that 'where there has been a leak from the site it has not been possible to enjoy being out of the house and I feel this infringes the use of my home'	We assume 'leak' means odour. We have summarised our assessment of odour under 1) above. We will investigate any future issues relating to odour as part of our ongoing regulation of site. We have assessed the risk of fugitive emissions from the facility during this determination. We are satisfied that the Applicant has appropriate measures in place to ensure that fugitive emissions are prevented.
Raised issue of errors in the	In our request for information on

application relating to the description of the distance to the nearest identified sensitive receptor.	17/04/15 we asked the Applicant to re-consider sensitive receptors and identify those closest to the site in each direction. We are satisfied with the list provided by the Applicant in Table 9 of the Odour Management Plan. We are satisfied that the Applicant has considered the same sensitive receptors in their 'H1 Risk Assessment Annex A' (received 17/04/15)
Raised issue of the wind direction rose including 'calm' as a wind direction.	We are satisfied that the wind direction rose given in Figure 5 of the revised OMP does not now include 'calm' as a wind direction.
Raised concern that sending a letter of apology to the community following a significant odour incident is not acceptable and that the Environment Agency needs to be able to withdraw the permit if there are significant odour incidents.	We will use our enforcement powers to get the best environmental outcome. If possible we try to get the best outcome by giving advice and guidance but we may choose to take enforcement action, including prosecution, when an incident has taken place, permit conditions have not been met or legislation is not complied with. If justified we can suspend or even revoke a permit.
Raised issue of 'the contractor's failure to turn and aerate the yard waste properly'	We are satisfied with the Applicant's commitment, in the Management System and OMP discussed above, to turning the material in the open windrows at least twice during the maturation period but also when the temperature and moisture conditions dictate additional turning is required. We consider this to be best practise and we will check this as part of our ongoing regulation of the site.
Raised issue regarding the exposure of operatives working on the composting pad to bioaerosols.	The health and safety of onsite employees and contractors is a matter for the Health and Safety Executive (HSE), not the Environment Agency. The HSE were consulted on this application and raised no issues.
Raised issue regarding absence of information in the Application on how the spread of disease by flies or other	The Applicant has submitted a Fugitive Emissions Management Plan which we have approved. We are

flying insects would be mitigated.	satisfied that this plan addresses the risk of insects from both the existing activities and the new IVC facility and includes appropriate measures to prevent insects causing pollution, hazard or annoyance. We are satisfied that the Installation will not cause significant pollution of the environment or harm to human health due to insects. We have included condition 3.6.2 which requires the Operator, if notified by us, to submit to us for approval a pests management plan which identifies and minimises risks of pollution from pests and to implement the plan from the date of approval. In Schedule 6 of the Consolidated Permit we interpret 'pests' to mean 'birds, vermin and insects'.
Objection to the increase in size of operations.	The Applicant has submitted a 'Site Capacity Assessment'. We are satisfied that the site has the capacity to deal with the increase in annual tonnage of waste.
The whole site is already causing a change in the topographical features of the area and raising the height of the hills unnaturally	Decisions over land use and visual amenity are matters for the Planning system. Table S1.1 of the Consolidated Permit limits the quantities of waste that can be stored at any one time in external areas of the site.
Emissions to the air of dioxins from the breakdown of fats	We do not consider that there is a mechanism for the release of dioxins from the microbial breakdown of fats. The typical emissions released during composting of biodegradable waste are volatile organic compounds, (including alcohols, carbonyl compounds, esters and ethers), hydrogen sulphide and ammonia. We are satisfied that the Operator will have appropriate abatement measures to prevent these substances causing pollution. The release of emissions during composting is dependent on the

	action of a diverse population of mesophilic and thermophilic aerobic bacteria and fungi. The temperature ranges from ambient to 70°C. Dioxins are produced from various sources including combustion (waste incineration, burning of coal, wood and petroleum products), cement kilns, metal smelting operations and manufacture of chemicals (chlorine-based products). In waste incineration, it is understood that dioxin formation is enhanced at temperatures of 500-800°C, while temperatures greater than 1000°C causes the destruction of dioxins. The temperature ranges that promote dioxin formation exceed that of the composting of source-segregated biodegradable waste proposed at the in-vessel composting facility. We therefore consider that it is unlikely that there will be emissions of dioxins from this facility.
Contamination of groundwater	We are satisfied that the activities should not result in any point source emissions to groundwater. All waste will be stored and treated on impermeable surfacing with sealed drainage. We have included one emission to land in the Consolidated Permit, of uncontaminated roof and surface water, which will be generated from direct precipitation on the IVC building. We are satisfied that this water will not come into contact with waste or any other substance that could result in its discharge causing contamination of groundwater.
Noise of loaders and HGVs and their associated beeping of reverse warning.	We are satisfied that the 'Second Noise Impact Assessment' submitted by the Applicant (and discussed in Section 5.3 above), concluded that the overall noise rating level is predicted to be 3dB above the

	existing daytime background sound level. We are satisfied that an increase of 3dB is unlikely to result in a complaint. We have included condition 3.4.2 which requires the Operator, if notified by us that activities are giving rise to pollution due to noise, to submit to us a noise and vibration management plan and implement the plan from the date of our approval.
'Find it hard to understand how James Landau can appear in the Hull Daily Mail saying the IVC will be up and running by May when he hasn't yet got a permit unless of course it is a "done deal"'	The Applicant cannot operate the new IVC facility until we have issued the Consolidated Permit. If the Applicant operates a regulated facility without a permit, they would be committing an offence and would be liable to prosecution. We are determining this application according to our normal determination procedures taking into account all relevant considerations and legal requirements.