

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

Consultation on our decision document recording our decision-making process

The Permit number is: EPR/GP3793FY
The Variation number is: EPR/GP3793FY/V010
The Operator is: Eco Sustainable Solutions
 Limited
The Installation is located at: Parley Waste Management
 Facility, Chapel Lane, Parley,
 Christchurch, Dorset, BH23 6BG
Consultation commences on: 26/10/2016
Consultation ends on: 23/11/2016

What this document is about

This is a draft decision document, which accompanies a draft variation.

It explains how we have considered the Operator's Application, and why we have included the specific conditions in the draft variation we are proposing to issue to the Operator. 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 Operator's proposals.

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

The Operator is Eco Sustainable Solutions Limited. We refer to Eco Sustainable Solutions Limited as “the **Operator**” in this document.

Eco Sustainable Solutions Limited’s proposed facility is located at Parley Waste Management Facility, Chapel Lane, Parley, Christchurch, Dorset, BH23 6BG. We refer to this as “the **Installation**” in this document.

The Operator currently undertakes a number of activities at the site under a bespoke environmental permit, reference number EPR/GP3793FY. We refer to this permit as “the **Permit**” in this document.

The Operator has applied to vary the Permit to add several new activities on the site. We gave their application the reference number EPR/GP3793FY/V010. We refer to the application as “the **Application**” in this document.

The Application was duly made on 3rd February 2015.

How this document is structured

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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.)

AAD	Ambient Air Directive (2008/50/EC)
ABPR	Regulation (EC) 1069/2009 and Regulation (EC) 142/2011 as implemented by the Animal By-product (Enforcement) (England) Regulations 2011
AD	Anaerobic digestion
APC	Air Pollution Control
BAT	Best Available Technique(s)
BAT-AEL	BAT Associated Emission Level
BREF	BAT Reference Note
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
EAL	Environmental assessment level
EIAD	Environmental Impact Assessment Directive (85/337/EEC)
ELV	Emission limit value
EMAS	EU Eco Management and Audit Scheme
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No. 675) as amended
EQS	Environmental quality standard
EU-EQS	European Union Environmental Quality Standard
EWC	European waste catalogue
FPP	Fire Prevention Plan
FSA	Food Standards Agency
GWP	Global Warming Potential
HMIP	Her Majesty's Inspectorate of Pollution
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
LCPD	Large Combustion Plant Directive (2001/80/EC) – now superseded by IED
LCV	Lower calorific value – also termed net calorific value

LfD	Landfill Directive (1999/31/EC)
LADPH	Local Authority Director(s) of Public Health
MBT	Mechanical biological treatment
NOx	Oxides of nitrogen (NO plus NO ₂ expressed as NO ₂)
OMP	Odour Management Plan
Opra	Operator Performance Risk Appraisal
PC	Process Contribution
PEC	Predicted Environmental Concentration
PHE	Public Health England
PPS	Public participation statement
PR	Public register
RGS	Regulatory Guidance Series
SAC	Special Area of Conservation
SGN	Sector guidance note
SHPI(s)	Site(s) of High Public Interest
SPA(s)	Special Protection Area(s)
SRF	Solid recovered fuel
SSSI(s)	Site(s) of Special Scientific Interest
STW	Sewage Treatment Works
SWMA	Specified waste management activity
TGN	Technical guidance note
UN_ECE	United Nations Environmental Commission for Europe
US EPA	United States Environmental Protection Agency
WFD	Waste Framework Directive (2008/98/EC)
WID	Waste Incineration Directive (2000/76/EC) – now superseded by IED

1 Our proposed decision

We are minded to grant the Application and issue a varied Permit to the Operator. This will allow it to operate the Installation, subject to the conditions in the varied Permit.

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

This Application is to operate an installation which is subject principally to the Industrial Emissions Directive (IED).

The draft varied 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 (EPR) and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the varied Permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard condition appropriate.

2 How we reached our draft decision

2.1 Receipt of Application

The Application was duly made on 3rd 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 Operator 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. 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 from 18th February 2015 to 31st March 2015, 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 Bournemouth Daily Echo on 18th 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 Rivers House, Sunrise Business Park, Higher Shaftesbury Road, Blandford Forum, DT11 8ST. Anyone wishing to see these documents could do so and arrange for copies to be made.

We also made a copy of the Application and all other documents relevant to our determination (see below) available to view at the offices of Christchurch Borough Council, Civic Offices, Bridge Street, Christchurch, Dorset, BH23 1AZ. Anyone wishing to see the documents could do so by appointment.

We also produced external briefing notes for distribution to local stakeholders, informing them of the Application; the proposals within it; the consultation process; where and how they could view the Application documents; and the deadline for comments.

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

- Christchurch Borough Council environmental protection department
- Food Standards Agency (FSA)
- Health and Safety Executive
- Public Health England (PHE) and the Director of Public Health
- Civil Aviation Authority
- National Grid
- Dorset Fire and Rescue Service.

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

We have taken all relevant representations into consideration in reaching our draft decision.

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 varied Permit, together with this explanatory document. As a result of this stage in the process 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.

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 an information notice to the Operator on 19th May 2015 and a further notice on 4th March 2016. A copy of each information notice was placed on our public register.

As a result of information received in response to the second information notice we determined that part of the Operator's proposals would not fall within the regulatory remit of the Environment Agency. We explain this further in section 4 when we talk about the clean biomass plant.

3 The legal framework

The varied 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 environmental protection for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- an *operation* covered by the Waste Framework Directive (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 varied 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

4.1.1 The permitted activities

The Installation is subject to the EPR because it carries out activities listed in Part 1 of Schedule 1 to the EPR, as follows:

- (a) Section 5.4 Part A(1)(b)(i) - Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment
- (b) Section 5.4 Part A(1)(a)(i) - Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) by biological treatment.

Point (a) above relates to the operation of (i) an open windrow composting facility; and (ii) an anaerobic digestion (AD) facility. Point (b) above relates to the operation of a reed bed system for the treatment of liquid process effluent.

In this document we may refer to the above activities as '*listed*' activities.

An installation may also comprise "directly associated activities" (DAAs) which at this Installation includes several activities associated with the AD facility, for example, the upgrade of the biogas produced by the AD process to enable the gas to be exported to the national gas grid.

Together, the listed activities and DAAs comprise the Installation.

A number of 'waste operations' covered by the WFD will also be carried on at the Installation. Several of these are currently undertaken under the terms of the existing Permit, including soil recycling, wood recycling and road sweepings recycling. The new 'waste operations' proposed in this Application includes the production of animal bedding from clean processed wood waste, and the recovery of non-recyclable materials from the site to produce a solid fuel.

4.1.2 What the Installation does

Under the existing Permit, the Operator currently carries on the following waste management activities:

- (a) Open windrow composting, involving physical treatment, composting and maturation

- (b) Soil recycling including sorting, separation, screening, blending of compost and soils, and the washing of oversized gravels
- (c) Wood recycling consisting only of sorting, separation, cutting, pulverising, shredding and chipping
- (d) Road sweepings recycling involving physical treatment (washing, shredding, screening, crushing, baling, and pelletising), and biological treatment (composting and maturation).

The existing Permit also allowed for the activity of 'In-vessel composting', however this activity no longer takes place at the site. Following agreement with the Operator in April 2015, this activity has been removed from the draft varied Permit.

The Operator wishes to expand operations at the site and has applied to vary the Permit to add the following activities:

- AD plant which will process biodegradable, non-hazardous wastes from household and commercial collections, to produce both biogas and digestate
- Biomethane plant which will upgrade the biogas produced by the AD process so that it can be exported to the national gas grid
- Digestate treatment plant which will turn the digestate produced by the AD process into agricultural fertiliser
- Two reed beds for the treatment of process water prior to discharge to foul sewer
- Two reed beds for the treatment of surface water run-off prior to discharge to surface waters
- Bedding plant which will produce animal bedding from clean processed wood waste
- Plastics and Rejects Drying plant which will heat and dry residual waste produced on-site, prior to processing in the Solid Recovered Fuel (SRF) plant
- SRF plant which be used to shred and bale various non-recyclable materials to produce a solid fuel for transfer off-site
- The bulking up, storage and subsequent transfer off-site of waste subject to the Animal By-product Regulations (ABPR) and other food wastes
- The recovery of waste for use in the construction of engineered surfacing on the proposed site extension
- The treatment of hazardous waste comprising of oil contaminated drilling muds in the road sweepings plant.

The Operator also applied to:

- (a) extend the site to include an additional area of land immediately due east of the existing permitted boundary. The extended Installation boundary is shown outlined in green on Figure 1:

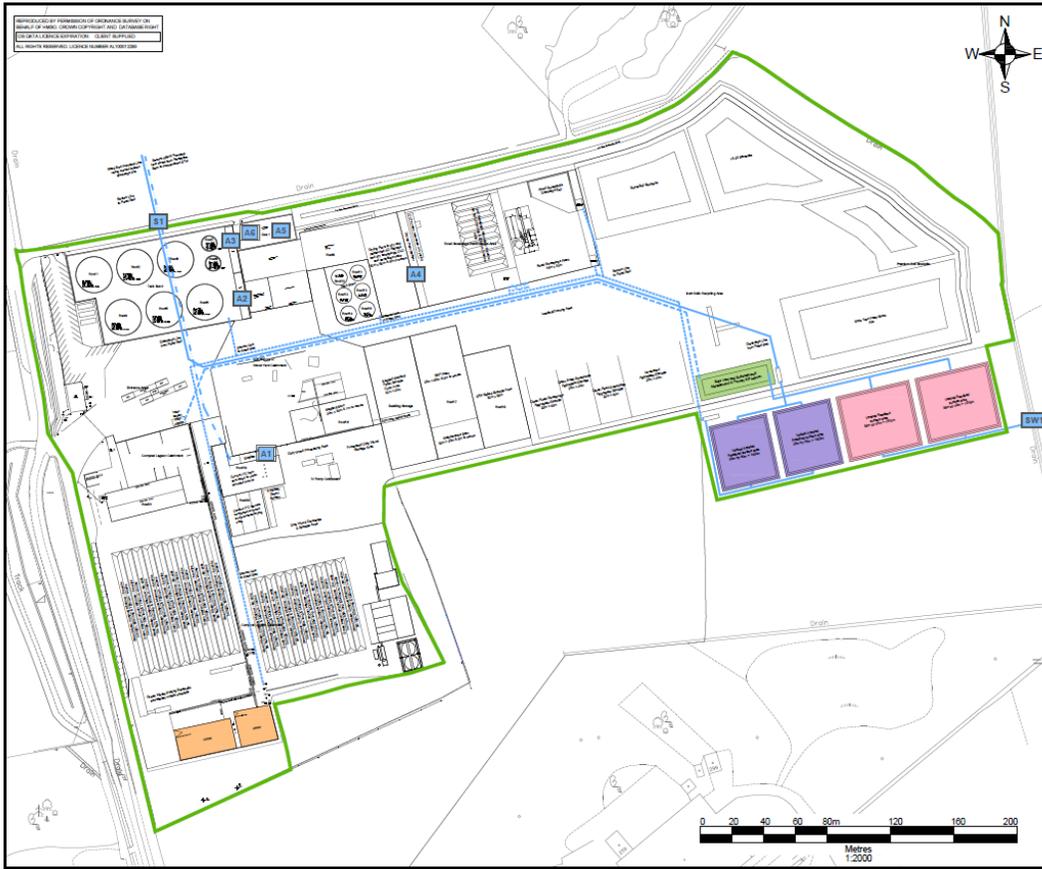


Figure 1 – Installation boundary

- (b) increase the overall amount of waste they can process each year from the currently permitted 215,000 tonnes per annum to approximately 315,000 tonnes per annum. The proposed increase in throughput includes wastes processed via the new activities and increases in wastes processed through their existing activities.

During the course of our determination this figure has been revised downwards to 306,098 tonnes per annum as shown in Table 1.

Activity type	Existing annual tonnages	Proposed annual tonnage on draft permit
Open Windrow Composting	50,000	50,000
In-Vessel Composting	20,000	N/A
Soils Recycling	85,000	100,000
Wood Recycling	30,000	33,000
Road Sweepings Recycling	30,000	42,000
AD Plant	N/A - New activity	33,000
ABPR Waste Acceptance/Transfer	N/A - New activity	15,000
Bedding Plant	N/A - New activity	13,300
Plastic and Reject Drier	N/A - New activity	10,000
SRF Plant	N/A - New activity	9,798
Total	215,000	306,098

Table 1 – Proposed waste throughput for the installation

The annual throughput on our draft varied Permit for all wastes of 306,098 tonnes represents a 42% increase over the previous permitted figure of 215,000 tonnes.

The Operator also applied to operate a 'clean' biomass plant, to burn clean, untreated wood in a furnace in order to produce heat and electricity. While the scale of the plant was not large enough to be an activity listed under Part 1 of Schedule 1 to the EPR, we initially considered the activity to be directly associated with the AD plant because the heat produced was to be used to warm the digesters. During the course of our determination the Operator confirmed that the energy produced by the clean biomass plant would not support the AD plant or any other principal ('listed') activities of the Installation. They stated that the heat would only be used to dry the wood destined to fuel the clean biomass plant and the electricity would be exported to the national grid. We therefore concluded that the clean biomass plant was not a DAA. Due to the nature of the fuel, which the Operator confirmed would be *virgin timber* (in accordance with the definition within the Environment Agency's position statement on The Environmental Regulation of Wood), neither would the clean biomass plant be subject to waste regulatory controls. We are therefore satisfied that the operation of the plant does not fall within the scope of the EPR and our permitting remit.

4.2 The site and its protection

4.2.1 Site setting, layout and history

The site of the Installation is located approximately 1km north of Bournemouth Airport, and approximately 8km north of Bournemouth City Centre, at National Grid Reference SZ 10156 98862. The site is located in a mixed industrial and rural setting, with Bournemouth Airport and the associated business park located immediately due south of the site. The area to the north and east is predominantly a mixture of rural and residential land use. The nearest residential property is located within approximately 60 metres of the site boundary.

The site is largely surrounded by designated conservation sites, principally the Dorset Heaths Special Area of Conservation (SAC), the Dorset Heathlands Special Protection Area (SPA)/Ramsar site, and the New Forest SAC/SPA/Ramsar site. A number of SSSI's (Sites of Special Scientific Interest) are also located nearby, including Parley Common SSSI, Hurn Common SSSI, and the Moors River System SSSI.

The site is located on a minor aquifer but not within a groundwater source protection zone.

A small part of the proposed site extension, towards the south and east of the proposed soils yard, overlaps with the Environment Agency indicative flood plan map. We are satisfied that the Operator does not require a Flood Defence Consent from the Environment Agency for works in the floodplain because planning permission for the proposals has been granted by the Local Planning Authority.

The site is not located within an AQMA (Air Quality Management Area).

The Operator 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 draft varied Permit, and the Operator is required to carry on the permitted activities within the site boundary.

4.2.2 Proposed site design: potentially polluting substances and prevention measures

Articles 11(a) and 11(c) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principles of taking all appropriate measures against pollution and ensuring no significant pollution is caused.

We set out below the key features of the Installation for the prevention of pollution to soil and groundwater. We have also considered the pollution of other environmental media (i.e. surface water and air) which we consider elsewhere in this decision document, in particular sections 6.1 and 6.2.

The key features of the Installation for the prevention of pollution to soil and groundwater are set out below.

An engineered sealed drainage system will serve the entire Installation. Depending on the location within the site, surface water run-off will either:

- (a) drain or be pumped via an interceptor to a new silt lagoon on the area of the site extension. Once the silt has been allowed to settle, the water will be re-cycled if possible, to reduce the requirement for imported clean water. Any excess water from the silt lagoon will be pumped to two new 'surface water' reed beds on the area of the site extension for treatment ('polishing') prior to discharge to surface water.
- (b) drain to the existing 'southern' lagoons which serve the open windrow composting facility. These lagoons also receive composting liquor from the composting activity. Run-off contained within these lagoons will either be recirculated in the composting process when necessary or pumped to two new 'process water' reed beds, where following treatment the effluent will be discharged to sewer and onwards to Wessex Water's Palmersford STW.

Potentially contaminated water from the AD plant areas, the ABPR/food waste reception building, and the road sweepings plant area, will also be pumped to the new process water reed beds.

The area upon which the AD facility will be constructed will have an impermeable surface (with a permeability of at least 10^{-9} m/s) and will be formed using a bentonite geotextile membrane either laid to the top of the surrounding earth bund or in places sealed to the base of a concrete panel wall. To save space within the site boundary, the western, southern and eastern internal walls of the bund will be formed of pre-cast concrete panels, bedded into a foundation beam and sealed into the geotextile floor. The bunded area will have sumps to enable the collection and pumping out of rainfall.

The Operator submitted a bund assessment with their Application. Secondary containment will be provided for all tanks containing liquids whose spillage could be harmful to the environment. The proposed earth and concrete bund area is designed to hold a minimum of 110% of the capacity of the largest tank or 25% of total tank volume, whichever is the greater. The bund will enclose a total of 6 digesters, and 8 storage tanks of various sizes. The bund will provide approximately 4900m³ of storage capacity, which is equivalent to approximately 27% of the total volume of all the tanks. We have checked the Operator's figures and consider them to be appropriate. We have included our standard pre-operational condition (PO3) in the draft varied Permit requiring the submission of a report confirming that the construction and integrity of the bund is fit for purpose and in accordance with current industry standards, namely, CIRIA C736 - *Containment Systems for the Prevention of Pollution - secondary, tertiary and other measures for industrial and commercial*

premises, prior to the commencement of site operations. This will ensure that the proposed bund is properly constructed to minimise risks to the environment and reduce the risks of accidents and their consequences.

Within the banded area, the digesters and storage tanks will comprise a 300mm thick reinforced concrete base onto which is bolted and sealed a stainless steel tank wall. The digesters will all be roofed with a double membrane gas roof fitted with over pressure valves, set to release should the pressure within the tank become excessive or the tank begin to foam. Should the valves activate the discharge will be directed vertically downwards in pipes onto a concrete pad within the banded area. The storage tanks will be roofed with a solid, sealed roof and will be individually valved. They will be supplied from and discharge via a central site manifold with all pipework being located above ground, running within the banded area with no bund wall penetrations. All storage tanks, the associated pipework and process equipment will be subject to regular inspection and maintenance and replacement as necessary.

The operational buildings associated with the AD plant will be constructed with a 300mm high kerb around the perimeter, formed as part of the cast concrete floor to provide the buildings with internal banded storage. Floor sumps will collect any internal spills and washdown water, with the collected liquid being automatically pumped back into the AD process.

The Operator has included within their Environmental Management System (EMS) those measures and procedures that they will implement in order to ensure that surface and groundwater is protected. We discuss the EMS further in section 4.3.2.

Under Article 22(2) of the IED the Operator is required to provide a baseline report containing at least the information set out in points (a) and (b) of that Article before starting operation.

The Operator has submitted a site condition report which includes a report on the baseline conditions as required by Article 22 of the IED. The baseline monitoring results for soil and groundwater are from site investigations undertaken in 2012. These results however do not sufficiently cover the full extent of the Installation, including the site extension as proposed in the Application. We have therefore included a pre-operational condition and associated improvement condition on the draft varied Permit. Pre-operational condition PO1 requires the Operator to provide an updated baseline report prior to the commencement of commissioning. Improvement condition IC5 requires the Operator to submit an updated Site Condition Report which references the additional ground investigations required under PO1 and which includes a full list of permitted activities.

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.

4.2.3 Closure and decommissioning

Article 11(h) and Article 22 of the IED and paragraphs 5(e) and 5(m), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principle of taking necessary measures to avoid groundwater or soil pollution upon cessation of the activities.

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, as outlined in the Operator's BATOT document, (v2, Jan 2015). The Operator has committed to submitting a Site Closure Plan for approval prior to the commencement of operations. Pre-operational condition PO2 requires that the Operator submits their Site Closure Plan prior to the commencement of any of the additional activities contained in the Application.

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 use at the time or approved future use. To do this, the Operator must apply to us to surrender 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

Eco Sustainable Solutions Limited (the Operator) is the sole operator of the Installation.

While it is understood that the biogas upgrading plant will be operated by a third party under contract we are satisfied that the Operator will have overall control over the operation of the Installation after the granting of the varied Permit; and that the Operator will be able to operate the Installation so as to comply with the conditions included in the varied Permit.

4.3.2 Management

The Operator has submitted an updated EMS to take into account the new activities proposed in the Application. They use their own EMS which is not certified under ISO14001 or EMAS, however we understand that the Operator plans to develop and implement a company-wide EMS to the ISO 14001:2015 standard in the near future.

We have reviewed the current EMS and 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 Permit conditions.

However, in recognising what can often be lengthy lead times and construction periods on such projects, and the technical complexity and potential risks associated with operating an AD plant and biogas upgrading plant, we have included pre-operational conditions (PO5 & PO6) requiring that the Operator, within 4 weeks prior to the start of commissioning:

- submits a copy of the EMS, clearly identifying any amendments since issue of the varied Permit; and
- confirms (with appropriate evidence) that their staff have the required technical qualifications to operate the AD plant and the biogas upgrading plant.

The Operator currently employs one technically competent member of staff with the appropriate certification for operating an AD facility (including the use of the resultant biogas.) This staff member oversees operations at the Operator's permitted AD facility at Piddlehinton, Dorset. Pre-operational condition PO6 is designed to ensure that when the new AD plant and biogas upgrading plant are in place, the Operator has an appropriate level of technical competence across the workforce to manage the new facility.

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. These measures include the boundary itself which consists of close boarding fencing, stock fencing, planted hedgerow and earth bunding, as well as lockable main gates, CCTV cameras and alarm system monitored 24 hours per day.

4.3.4 Accident management

Article 11(g) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principle of taking necessary measures to prevent accidents and limit their consequences.

The Operator 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 Installation must be operated in accordance with the following documents contained in the Application:

Description	Parts Included
Application for variation EPR/ GP3793FY/V010	Application forms C2, C3 & C4 and relevant supporting information
Responses to Schedule 5 Notice dated 18/05/15	Q1. Fire Prevention Plan (approved by Environment Agency on 23/06/16)
	Q2. Odour Management Plan (approved by Environment Agency on 08/01/16)
	Q4. Main bunded area for the AD facility
	Q6. Hazardous waste management following processing in the road sweepings plant
	Q7. Monitoring of outputs from the road sweepings plant
	Q8. Accident Management Plan
	Q9. Optimisation and control of the AD facility
	Q11. SRF plant, bedding plant, digestate plant, biogas safety flare and vertical flow reed beds
Response to Schedule 5 Notice Dated 04/03/16	Q1&2. Clean biomass plant
	Q3. Waste Recovery Plan (approved as a 'recovery' operation by Environment Agency on 27/05/16)
Final response to Environment Agency email dated 04/07/16	Environmental Management System (EMS) (approved by Environment Agency on 07/09/16)
Response to Environment Agency email dated 30/09/16	Confirmation of the size of the biogas auxiliary/emergency flare, rated at 6MW thermal input

Table 2 – Operating techniques

The documents set out above describe the techniques that will be used for the operation of the Installation. Article 11(b) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principle of applying Best Available Techniques (BAT). Article 13 WFD and paragraph 4(1)(b) of the EPR require that we exercise our functions to take necessary measures to ensure that waste management is carried out without endangering human health and without harming the environment.

BAT means the available techniques which are the best for preventing or, where that is not practicable, reducing emissions and impacts on the environment as a whole. 'Techniques' within the meaning of BAT include both the technology used and the way an installation is designed, built, maintained, operated and decommissioned. The concept of BAT and how it should be applied is set out in the IED and applies specifically to the 'listed' activities and DAAs set out in section 4.1.1.

For proposed new installations that are also waste operations we also consider whether an operator is using 'appropriate measures' for meeting the requirements of Article 13 of the WFD. European directives have used various terms to describe what type of measures should be taken to prevent pollution such as "all appropriate preventative measures", "reasonable", "best available" and "best practicable". While these can all be interpreted slightly differently they all have the same general meaning that we call 'appropriate measures'.

The Environment Agency has assessed the documents listed in Table 2 above and concluded that they demonstrate that the Installation will be operated applying BAT and that appropriate measures will be used to ensure that waste management is carried out without endangering human health and without harming the environment.

These documents form part of the varied Permit through Permit condition 2.3.1 and Table S1.2 in the Permit Schedules.

4.3.7 Waste acceptance procedure

The site has been operating for a number of years under the existing Permit. We are satisfied that appropriate measures are already in place for accepting wastes processed via the existing permitted activities, i.e. open windrow composting, wood recycling, soil recycling and road sweepings recycling. The Operator follows a company-wide waste acceptance procedure which details how waste is managed from initial delivery to the site and how checks for compliance with company policy and governing legislation are completed. The document details the procedures for:

- dealing with wastes upon arrival
- checking waste descriptions and transfer notes
- using 'tipping tickets' specific to each waste load for recording information such as waste type, quantity, EWC code, waste source, producer, haulier, etc
- discharging wastes to the relevant site process
- completing documentation following tipping
- departure of vehicles, and
- inspection and rejection and/or quarantine of unsuitable loads.

We are satisfied that the existing waste acceptance procedure is broadly consistent with our sector guidance *S5.06 Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste*.

The 'new' wastes proposed to be accepted at the Installation will be managed under the above procedure with additional measures applied as necessary.

We are satisfied that the additional measures described in the Application for the acceptance of oil containing drilling muds for treatment in the road sweepings plant are consistent with our S5.06 guidance. We discuss this further in section 5.5.

We are not satisfied that the measures described in the Application for the acceptance of food wastes, (including ABPR waste) either for processing in the AD plant or for bulking and transfer are robust enough in their detail to meet the requirements of our Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013). We have included a pre-operational condition (PO4) in the draft varied Permit requiring the Operator to submit for approval an addendum to their existing Waste Acceptance Procedure confirming the specific details of their waste pre-acceptance and acceptance procedures, taking into account the indicative BAT requirements contained in the above guidance.

4.3.8 Energy efficiency

Article 11(f) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principle of using energy efficiently. The Application details a number of measures that will be implemented at the Installation in order to increase its energy efficiency, which include:

- motors and drives, i.e. use of variable speed drives
- water minimisation, i.e. re-cycling of digestate to dilute feedstock materials
- use of low-energy technology, e.g. wet digestion compared to dry digestion
- optimised design and layout to minimise unnecessary movement of materials
- use of automated process control and instrumentation, and
- the specification of equipment with low energy consumption where possible.

The Operator states that basic, low cost physical techniques which will avoid inefficiencies on site will be used where possible, e.g. the appropriate use of insulation, seals and self-closing doors, and the reduction of unnecessary releases of heated water or air through fitting simple control systems such as timers and sensors.

In accordance with Permit condition 1.2.1 the Operator must review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the Installation, and take any further appropriate measures identified by such a review.

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.

4.3.9 Efficient use of raw materials

Article 11(d) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the principle of preventing the generation of waste as required by WFD. The Operator has stated that they will take appropriate measures to ensure that raw materials are used efficiently at the Installation, with opportunities for re-use and recycling taken wherever possible. Raw materials that minimise environmental impact will be selected with consideration being given to such factors as degradability, bioaccumulation potential and toxicity. Records of raw materials used on site will be maintained, with regular reviews undertaken to ensure that (a) ongoing usage is appropriate (b) consumption is optimised, and (c) opportunities for reduction in quantities and/or the use of alternative materials are identified, evaluated and implemented.

The Operator has set out in the Application how they will manage the use of water. They state that re-use and recycling of water around the site will be implemented wherever possible and that the following measures will be considered:

- use of water efficient techniques at source
- recycling of water within the process
- use of uncontaminated roof and surface water within the process
- separate contaminated and non-contaminated streams of water
- direct measurement of fresh water consumption
- vacuuming, scraping or mopping in preference to hosing down, and
- use of trigger controls on all hoses and washing equipment.

Water consumption will be monitored on a regular basis with the data used as part of the ongoing review of water efficiency. Water minimisation audits will seek to identify and evaluate ongoing options for further re-use and recycling.

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 to prevent generation of waste.

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

Article 11(e) of the IED and paragraph 5(e), Schedule 7A of the EPR require that we ensure that installations are operated in accordance with the waste hierarchy set out in Article 4 of the WFD. This requirement addresses how the Installation is operated and does not apply to waste generated elsewhere being received by the Installation. The Operator has stated that they will:

- apply waste acceptance procedures which help minimise the delivery of waste that cannot be processed at the facility
- recover waste where practicable and if recovery is not possible, ensure that waste is disposed of to an appropriate licensed facility
- store waste in suitable sealed facilities in a designated area of the site until removal by a specialist contractor or to segregate waste to allow for recycling
- dispose of waste oil off-site via a specialist contractor to an appropriately licensed facility, returning empty drums and containers to the supplier for re-use where possible
- make provision for the safe storage of rejected loads
- keep records on site of wastes generated including type, quantity, source and waste disposal or recovery option taken
- undertake regular audit of waste disposal and recovery routes to ensure waste is appropriately dealt with, and to enable further waste prevention and minimisation opportunities to be identified.

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

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.

4.3.11 Emissions and Monitoring

Article 14 of the IED and paragraph 5(g), Schedule 7A of the EPR require that we include emission limit values (ELVs) and appropriate monitoring conditions in the varied Permit. We have included ELVs and associated monitoring requirements for the parameters indicated in the tables within Schedule 3 to the varied Permit. Monitoring is required to be carried out using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with the ELVs; to check the quality of composting leachate, surface water and groundwater; and to check that site biowaste activities are operating effectively. Some of the monitoring requirements relate to the open windrow composting activity and these have simply been carried over unchanged from

the existing Permit. ELVs and monitoring requirements are set out in Schedule 3 of the draft varied Permit, in Tables S3.1-S3.8, as follows:

- New table S3.1: Emissions to air via new emissions points A1-A6
- New table S3.2: Emissions to water via new discharge point W1
- New table S3.3: Emissions to sewer via existing discharge point S1
- Existing table S3.4: Surface water monitoring, open windrow composting
- Existing table S3.5: Groundwater monitoring, open windrow composting
- Existing table S3.6: Leachate monitoring, open windrow composting
- Existing table S3.7 – Process monitoring, amended to reflect the requirements of our current biowaste permit templates
- Existing table S3.8 – Bioaerosol monitoring, amended to reflect the requirements of our current biowaste permit templates

Based on the information in the Application and the requirements set in the conditions of the varied Permit we are satisfied that the Operator's techniques, personnel and equipment will have either MCERTS certification or MCERTS accreditation as appropriate.

4.3.12 Reporting

Article 14 of the IED and paragraph 5(g), Schedule 7A of the EPR require that installation permits include conditions governing reporting and the provision of information by the Operator to the Environment Agency. We have specified the reporting requirements in Schedule 4 of the draft varied Permit either to meet the reporting requirements set out above, 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 site processes including abatement measures.

5 Key Issues in the Determination

The key issues arising during this determination are as follows:

- waste types and amounts
- assessment of odour emissions
- consideration of fire prevention
- the use of waste for recovery
- management of hazardous waste.

We discuss these issues in detail in this section of the decision document.

5.1 Waste types and amounts

5.1.1 Waste types

Article 45(1) of the IED requires that the varied 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 2005/532/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 Operator will accept in the waste streams entering the site and which the facility is capable of processing 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 the following tables in the draft varied Permit:

- Table S2.2 (anaerobic digestion)
- Table S2.3 (open windrow composting)
- Table S2.4 (soils recycling)
- Table S2.5 (wood recycling)
- Table S2.6 (road sweepings recycling)
- Table S2.7 (SRF plant)
- Table S2.8 (bedding plant)
- Table S2.9 (plastics and rejects drier)
- Table S2.10 (ABPR and food waste bulking and transfer)
- Table S2.11 (waste recovery for construction of hardstanding).

We are satisfied that the Operator can accept the wastes contained in the above tables as the majority are unlikely to contain harmful components that cannot be safely processed at the Installation. However with respect to oil contaminated drilling muds (EWC 01 05 05*), which is hazardous waste, we are not yet satisfied that the treatment of such material can be passed through the road sweepings plant without residual contamination remaining before the next batch of non-hazardous waste is introduced into the plant. The risk is that the output from the subsequent treatment of non-hazardous waste, i.e. aggregates, compost-like output, is rendered hazardous and poses an increased risk to the environment. We have included a pre-

operational condition (PO8) on the draft varied Permit requiring the Operator to submit a commissioning plan which shall include a method statement for the effective removal of hazardous waste residues from the plant prior to the treatment of non-hazardous waste. A follow-up Improvement Condition (IC4) requires the Operator to submit a report on the commissioning process which clearly demonstrates with appropriate evidence, e.g. monitoring data, that hazardous waste residues are effectively removed.

We have identified two waste types which we do not consider suitable for processing in the AD plant. These are biodegradable waste plastic (EWC 04 02 99) and wastes from preserving agents (EWC 02 03 02). These waste types are not listed on our current AD sector permit template. They are not listed in Appendix B of the industry recognised Quality Protocol for Anaerobic Digestate (ADQP) which lists those types of biowaste acceptable for the production of quality digestate. The Operator did not provide any additional justification on why 04 02 99 waste (originating from the textile industry) is acceptable for anaerobic digestion. The Application states that it is the Operator's intention to produce a digestate which is compliant with the ADQP and the PAS110 standard. The digestate specification requirements under PAS110 preclude the use of any input materials that are not listed in Appendix B of the ADQP. Therefore we have not included EWC codes 04 02 99 or 02 03 02 in Table S2.2 of the draft varied Permit. Should the Operator wish to include these wastes in the varied Permit in the future they will need to apply to further vary the Permit and provide detailed justification in accordance with Environment Agency guidance "Framework for assessing suitability of wastes going to anaerobic digestion, composting and biological treatment, Framework Guidance Note, July 2013".

We have also identified two waste types which we do not consider suitable for processing in the bedding plant at the current time. These are wood from the construction and demolition industry (EWC 17 02 01) and wood contained in municipal wastes, i.e. household waste and similar commercial, industrial and institutional wastes, (EWC 20 01 38). We are aware through our consultation with the Food Standards Agency (FSA) that the FSA are currently conducting research into the uptake of contaminants into food animals from animal bedding derived from waste wood. They have raised concerns about the visual inspection of 'clean' wood insofar as they consider this to be insufficient to detect wood treatments which may be a source of organic contaminants. Given that this is a developing policy area for the FSA we consider it reasonable to restrict the types of waste wood that the Operator may use to produce animal bedding to those that are akin to virgin materials which have not been treated. In addition, Table S1.1 (Activity reference A21) on the draft varied Permit provides further clarification on the use of waste from wood processing activities and from the production of panels and furniture (EWC 03 01 05), by restricting the acceptance of material containing resins and/or adhesives which are commonly used in the manufacture of particle board (chip board) and veneers.

5.1.2 Waste amounts

Where the Operator has proposed to accept greater quantities of an existing permitted waste type we have considered their justification and potential capacity to cope with such increases.

The Operator proposes to increase the annual throughput of waste soils for recycling from 85,000 tonnes to 100,000 tonnes. They describe the need for this as being two-fold, i.e. (a) increased hours of operation (subject to a current planning application) and (b) to keep pace with an expected increased local demand for recycling services. The existing soils yard operation processes on average 500 tonnes of material per working day, giving an annual potential throughput of material of 125,000 tonnes (based on a 5 day working week). The plant therefore appears to have sufficient capacity to cope with processing 100,000 tonnes per annum. Furthermore the area of the new soils yard is considerably larger than the existing yard, with the capacity to store the incoming waste soils and the various grades of recycled soils and aggregate produced by the process. As described elsewhere in this decision document the new soils yard will have appropriate pollution prevention measures in place. We are therefore satisfied with the proposed increase in throughput for the soils recycling activity.

The Operator proposes to increase the annual throughput of wastes for recycling at the road sweepings plant from 30,000 tonnes to 42,000 tonnes, in order to allow for an increase in operating hours and for the acceptance of up to 2,000 tonnes per annum of oil contaminated drilling muds. They report that the road sweepings plant is currently processing 50 tonnes per working day which is equivalent to about one third of its capacity. We are therefore satisfied that the plant has the capacity to cope with the proposed increased throughput.

The Operator proposes an increase in the annual throughput of wood for recycling from 30,000 tonnes to 33,000 tonnes, in order to allow for an increase in operating hours. We are satisfied that the Operator has the capacity within the wood recycling area to accommodate this relatively small increase in throughput.

With regard to open windrow composting the Operator applied to reduce the throughput of green waste from 50,000 tonnes per annum to 38,250 tonnes per annum. The figure of 38,250 tonnes per annum was to be realised once the new AD plant was in operation, however until such time the Operator wished to increase their composting throughput to 55,000 tonnes per annum. We have not agreed to this temporary increase in throughput due to odour complaints received during 2016 which we have determined is due to issues with management of the composting process. We consider it reasonable not to allow any increase in waste throughput until the Operator can demonstrate sufficient control over the process such that it does not give rise to odour pollution outside the Installation boundary. Therefore we have not changed the permitted throughput from the current figure of 50,000 tonnes per annum.

5.2 Assessment of odour emissions

5.2.1 Point source emissions of odour

The Operator has used detailed dispersion modelling to assess the impact of point source odour emissions arising as a consequence of the proposals in the Application.

The modelling method commonly used in the UK calculates a 98th percentile of hourly average odour concentrations over a year. The results are expressed as odour unit contours on a map. Unacceptable levels of odour pollution can be checked against exposure benchmarks. When the results are presented and interpreted, they must take uncertainty into account, especially in terms of emissions and weather data.

Odour exposure benchmarks are based on the 98th percentile of hourly average concentrations of odour modelled over a year at the site/installation boundary. The benchmarks are:

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

Any modelled results that project exposures above these benchmark levels, after taking uncertainty into account, indicates the likelihood of unacceptable odour pollution.

The Operator has modelled the potential impact of odour emissions from three proposed biofilters. These biofilters will treat odorous air extracted from the areas associated with AD / ABPR waste reception and processing, digestate treatment, and plastics and rejects drying. Air extracted from the AD / ABPR waste reception and processing building will pass through 2 biofilters located to the west of that building, and vented to atmosphere via emission points A2 and A3. The plastics and rejects drying plant will draw odorous air from the digestate treatment area (which is part of the AD facility), heat it and pass it through the drier, from where it will be extracted to the third biofilter and vented to atmosphere via emission point A4.

Biofilters work by using micro-organisms (yeast, bacteria, fungi, etc) and macro-organisms (insects, protozoa, etc) to consume and biologically break down odorous volatile organic compounds (VOCs) in the extracted air by converting these to odourless products, i.e. carbon dioxide, water and salts. The bio-filter media (in this case shredded wood) provides an environment for the micro-organisms to live in a “bio-film” attached to the media particles.

The proposed biofilters will be similar to those already in use at the Operator’s permitted AD facility at Piddlehinton in Dorset. They will be comprised of 2 metres of clean shredded wood (or 3m in the case of the drying plant biofilter, to cope with a greater airflow), laid on top of a 200mm drainage layer, above a plenum chamber into which the odorous air is fed. The surface of each

biofilter will be open to atmosphere. A single, main manifold duct alongside the reception building for each biofilter, taking feed pipes from each extraction point, will ensure that there is a uniform airflow to the biofilter media above. The residence time for odorous air within the biofilter will be in the order of 30-40 seconds. An irrigation system will be installed to enable the top surface of the filter to be regularly wetted to ensure the optimum moisture content is maintained within the wood layer, preventing it from drying out and killing off the micro-organisms. The temperature, moisture content and the integrity of the biofilters will be monitored on a daily basis. The AD / ABPR waste reception building and the digestate treatment plant will benefit from multiple extraction points located at the key processing areas, to ensure only highly odorous air is extracted close to source. This is because it is more effective to treat small quantities of highly odorous air than it is to treat large volumes of less odorous air. Individual fans with non-return shutters will be fitted at each extraction point to maintain air flow in the event of a motor failure. The extracted air will be ducted to the biofilters and released to the atmosphere via the media. The proposed biofilters will be sized to provide 4 air changes per hour, with a residence time, i.e. the time the odorous air is in contact with the bio-film on the media, of at least 30 seconds, in accordance with Environment Agency guidance. To ensure the bio-filter is performing adequately odour sampling will be conducted every 6 months by an MCERTS accredited sampling technician.

Emissions from the proposed biofilters were modelled using the air quality modelling software, ADMS 5 which is a commonly used computer model for regulatory dispersion modelling. The model used 5 years of meteorological data (2008-2012) collected from the weather station located 2km due south of the site at Bournemouth Airport. This was supplemented with cloud cover data from the nearby Boscombe Down measurement station. With reference to our H4 Odour Management guidance, the Operator has considered that odours from the proposed plant should be classed as 'highly offensive' and as such, they modelled impacts against an indicative odour criterion (Environmental Assessment Level) of 1.5 OUE/m³. We consider that this benchmark, typically used for the most offensive odours, is appropriate for the facility.

As well as calculating the peak ground level odour concentration across the modelled domain (based on a 2km x 2km grid centred on the Installation), the Operator has modelled the odour concentration at a number of specified locations within the surrounding area. We have checked the locations of the sensitive (residential) receptors used in the model and are satisfied that they are likely to be reasonably representative.

The results from the Operator's odour modelling for the residential receptors considered in the model are presented in the table 3 below. The closest residential receptor is located at Whitemere House, approximately 200m from the biofilters, and 60m from the Installation boundary.

Receptor reference	Receptor name	Distance / direction from biofilters	Hourly average odour ($C_{98\ 1\ hour}\ OUE / m^3$)	% of EAL
RR01	Whitemere House	0.2 km to north west	0.59	39
RR02	Church House	1.0 km to south	0.10	7
RR03	Chapel Gatehouse	1.0 km to south	0.09	6
RR04	Hurn Honey Farm	0.7 km to west	0.11	8
RR05	West Lyn	0.6 km to west	0.13	9
RR06	Heathlands	0.6 km to west	0.12	8
RR07	Virginia Cottage	0.7 km to north west	0.06	4

Table 3 - Maximum modelled odour concentrations at residential receptors

The Operator's modelling results show that the indicative odour criterion of 1.5 OUE/m^3 was not exceeded at any of the residential receptor locations. On the basis of these results the Operator concluded that there should be no reasonable cause for annoyance at nearby residential premises. Furthermore the Operator stated that "an odour concentration of 1 OUE/m^3 is the threshold for detection by members of the general public with a "typically average" sense of smell. Accordingly, the maximum Process Contribution at the above receptor locations is likely to be imperceptible to all but those with the most sensitive sense of smell."

The Environment Agency has audited the Operator's odour modelling. The way in which the Operator has used the dispersion model, its selection of input data, use of background data and the assumptions made have been reviewed by our modelling specialists to establish the robustness of the Operator's odour impact assessment. Having carried out our own check modelling and sensitivity analysis we agree with the Operator's conclusions that exceedances of the 1.5 OUE/m^3 odour benchmark at sensitive receptors are unlikely.

The Operator has based their odour modelling on a measured odour concentration of 289 OUE/m^3 , which was the level measured in the biofilter which served the former IVC (in-vessel composting) building. This is of a similar woodchip based design to that proposed for the new biofilters. At the time of sampling of the IVC biofilter it was reported to be performing optimally with an overall odour abatement efficiency of approximately 71% based on measurement of inlet and outlet odour emission rates.

Well designed, operated and maintained biofilters are capable of achieving significant and sustainable reductions in biowaste odours with typical outlet concentrations ranging from 200 to 5500 OUE/m^3 . While we consider that biofilter efficiencies of up to 95% are achievable, such levels of performance require effective management with close adherence to regular checks and maintenance. As stated above, based on the modelling results we consider it

unlikely that odour emissions should have an impact on local residents, however in practice whether or not odour nuisance is likely will depend heavily on the effective management of the site and its biofilters. Such management techniques are set out in the Odour Management Plan (OMP) for the site (see section 5.1.3 below).

Until the new AD / ABPR facility is constructed and commissioned, the biofilter serving the former IVC building (emission point A1) will be used to abate odorous air associated with the bulking up and transfer of ABPR waste and other food waste, which will take place in this building until completion of the new facility. When this facility is completed, the former IVC building will be redeveloped to house a clean biomass plant, with the biofilter remaining to serve this operation. The Operator did not include this biofilter in their modelling assessment. However, having considered the fact that (a) the modelling results above show that there is considerable headroom available before an EAL breach is likely; (b) the location of this biofilter is nearer to the middle of the site and further away from the closest residential receptor, and (c) the potentially less offensive nature of any odorous air from the clean biomass plant building, our view is that additional emissions from this biofilter are unlikely to lead to exceedances of the 1.5 OUE/m³ odour benchmark at sensitive receptors.

5.2.2 Fugitive emissions of odour

We have considered whether the Operator has proposed appropriate odour control measures to minimise any impact due to fugitive emissions on nearby sensitive receptors by examination of their OMP (see section 5.1.3 below).

5.2.3 Odour Management Plan

An OMP sets out the appropriate measures that an operator will use to prevent or, where that is not practicable, minimise off-site odour arising from the potentially odorous activities which will take place on their site, covering both point source and fugitive emissions.

The Operator maintains an OMP for the site, the previous version of which related to the permitted activities of open windrow composting, wood recycling, soils recycling, and road sweepings recycling. It also contained control measures in relation to the site lagoons for containment of surface run-off and composting leachate; and mushroom composting which is undertaken by a third party on the site. Their OMP was last reviewed and approved by the Environment Agency in December 2014 during the determination of variation V009 when the Operator applied to add the road sweepings recycling activity to their Permit.

As part of the Application the Operator submitted a revised and updated version of their OMP, covering the following additional activities:

- ABPR and food waste bulking and transfer
- AD, digestate processing and biogas management

- Plastics and Reject Drier
- SRF plant
- Bedding plant

An inventory of odorous materials forms part of the OMP which sets out the expected characteristics of each incoming waste (by EWC code), its odour potential, and the preferred processing route under normal circumstances. In considering each of the above site activities, the OMP describes material waste acceptance procedures, storage (and transfer) arrangements, processing locations, odour abatement techniques, process monitoring, and procedures to deal with emergencies and incidents such that odour releases are minimised under such circumstances. The OMP also describes the construction philosophy and design details of the air extraction system within the AD facility and the biofilters used to control point source emissions. It also identifies local sensitive receptors and outlines the Operator's approach to engagement with local stakeholders.

The Operator states that the OMP will be reviewed annually at a minimum or following the implementation of any new management measures or a change to work practices at the site.

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

Permit conditions require the Operator to comply with the measures proposed in their Operating Techniques which includes their OMP. The odour condition in the draft varied Permit is included to ensure that odour emissions from the facility do not cause annoyance. Process monitoring conditions including daily olfactory tests at the site boundary will also ensure that emissions of odour are not causing annoyance.

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 odour and to prevent pollution from odour.

5.3 Consideration of fire prevention

Waste fires are harmful to human health. The Environment Agency has a statutory duty to regulate certain activities, including waste management facilities in order to protect the local community. Our Fire Prevention Plan (FPP) guidance aims to improve the standards at all permitted sites storing combustible waste so that fires are less likely and, when they do occur, their duration and impact on the public is minimised. Our guidance requires operators that store combustible wastes to have in place an FPP approved by

the Environment Agency. FPPs must meet the minimum standards in our guidance, or where there is deviation from these standards, this must be fully justified by the operator and agreed by the Environment Agency.

The Installation will store and process non-hazardous combustible waste, such as wood, compost, plant material, and paper, cardboard and plastics (mostly from waste food packaging). The proposals contained in the Application have the potential to increase the risk of fire due to (a) the storage of new types of combustible wastes and (b) an increase in the quantity of combustible wastes to be processed.

We requested that the Operator submit an FPP as part of the Application. Having considered their FPP we are satisfied that appropriate measures will be in place to prevent waste fires, but that if fire did occur, the impact on people and the environment will be reduced. We have approved the Operator's FPP as it meets the minimum regulatory standards that we expect operators to follow, with the exception of one particular aspect where we have agreed to the Operator's proposal to deviate from the guidance, as discussed below.

With regard to the management of oversize material from the composting of green waste, our guidance requires that the 'oversize' is stored in stockpiles which do not exceed 150m³ in volume, with at least a 6 metre separation distance between the stockpile(s) and any other stockpile or building. Due to reported difficulties with space at the site the Operator is unable to comply with the 6 metre separation distance when using 150m³ stockpiles. They therefore proposed the following alternative for managing the oversize material:

- The compost oversize material will be reprocessed on a daily basis.
- If the site is not processing on a given day then the oversize material will be stored in stockpiles no greater than 150m³ in volume, with a separation distance of 3m. This material will be stored for no longer than 7 days.
- The temperature of any oversize stockpiles will be monitored on a daily basis. If the temperature of the stockpiled material exceeds 50°C it will be immediately moved using a wheeled loading shovel to the quarantine area where water will be applied.

We have given consideration to this proposed deviation from our guidance, i.e. the reduced separation distance from 6m to 3m. We have agreed the above operating procedure as part of the Operator's FPP.

Reprocessing the oversize material on a daily basis will reduce the need to store significant quantities of such material on-site. In the event that stockpiling is necessary any risk associated with a reduced separation distance of 3m will be offset by the fact that this material will be stored for no more than 7 days thereby reducing the risk of combustion due to self-heating within the waste mass. Daily temperature monitoring of any stockpiles together with a well-defined contingency procedure to deal with any material

showing elevated temperatures demonstrates that the Operator will have appropriate measures in place to deal with the risks from this specific activity.

We are therefore satisfied that the above operating procedure will offer an equivalent level of protection to people and the environment from the risk of fire. The approved FPP is referenced within Table S1.2 of the draft varied Permit as it forms part of the Operating Techniques for the Installation.

5.4 Use of waste for recovery

The Operator has applied to extend the Installation boundary, principally to accommodate the relocated soils yard and a new primary silt lagoon and the new reed beds for the treatment of process water and surface water run-off. Soils recycling is currently undertaken on the north-west corner of the site but this activity will be displaced upon construction of the new AD plant. The area of the site extension is shown outlined in red on Figure 2.

The Operator has applied to use up to 42,200 tonnes of waste for the construction of engineered surfacing, which will cover an area of approximately 5.63 hectares (13.9 acres). They have stated that once the engineered surface is in place the site will be developed so the company can expand and develop their waste operations at the site.

The Operator submitted a Waste Recovery Plan (WRP) with the Application. The WRP was produced with reference to our EPR13 guidance “Defining Waste Recovery: Permanent Deposit of Waste on Land”. The objective of the WRP was to demonstrate the proposed construction of engineered surfacing on the area of the site extension constituted ‘recovery’ of waste rather than ‘disposal’ of waste.

Whether an activity constitutes disposal or recovery depends on a legal test derived from the WFD and European case law. Waste recovery is about using waste to replace other non-waste materials to achieve a beneficial outcome in an environmentally sound manner. Or in other words, putting materials that would otherwise be disposed of to a beneficial use, saving the use of non-waste materials and conserving natural resources. Waste disposal is about getting rid of waste in an environmentally sound manner.

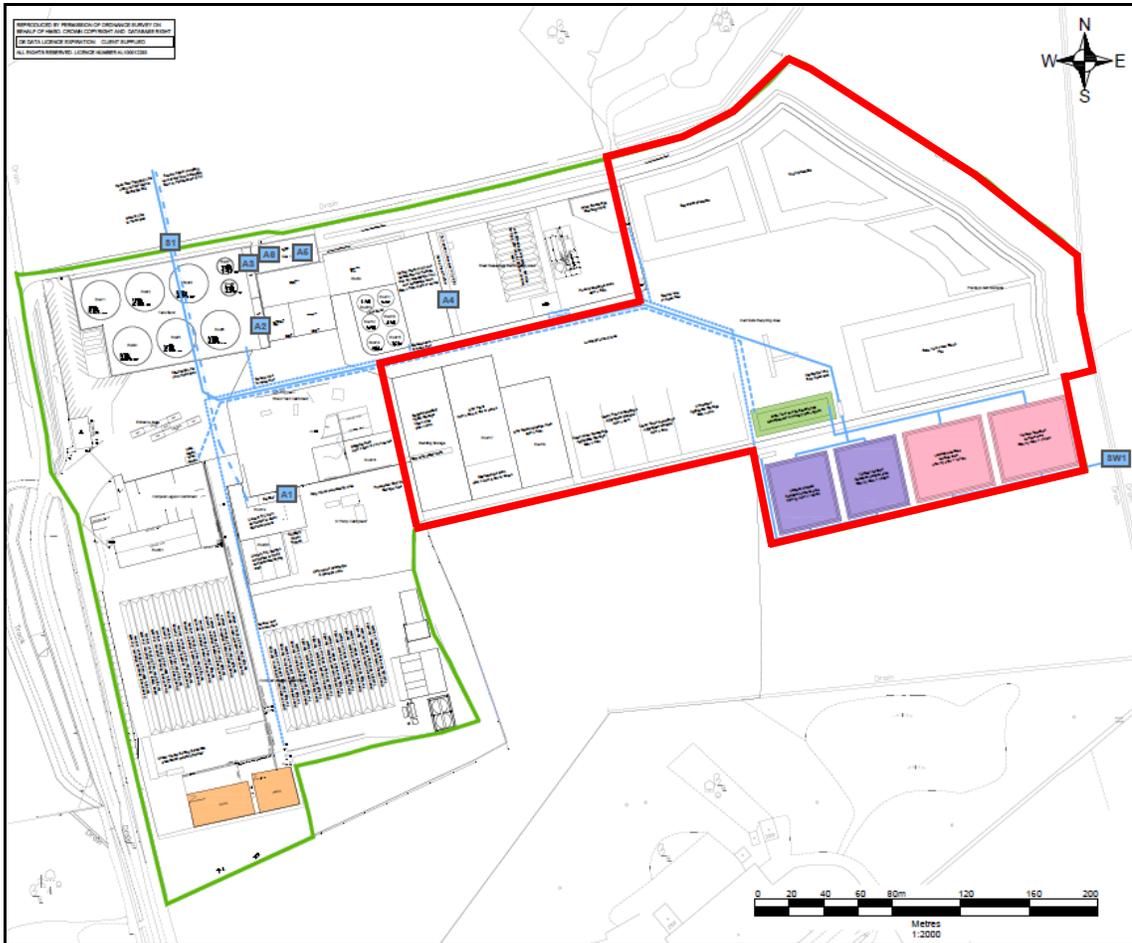


Figure 2 – Area of site extension (enclosed by red boundary)

The Operator states that “only inert and specific non-hazardous waste material that is suitable for its intended use will be used in the recovery activity”. They propose to use EWC wastes 17 01 07, 17 05 04 and 19 12 12 as shown in Table 4 below. These waste types are all listed in our guidance EPR13, Appendix 2: Waste types that may be suitable in typical waste recovery to land uses.

Waste code	Description
17	Construction and demolition wastes (including excavated soil from contaminated sites)
17 01	concrete, bricks, tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	soil and stones other than those mentioned in 17 05 03
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletizing) not otherwise specified
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

Table 4 – Waste types proposed in the Waste Recovery Plan

While the WRP states that “there is no intention of accepting contaminated materials” we are not satisfied that the measures contained within the Operator’s WRP are robust enough to ensure that only uncontaminated soils and stones are accepted under waste code 17 05 04. We have therefore included a pre-operational condition (PO10) in the draft varied Permit requiring that the Operator submit a report detailing the waste pre-acceptance and/or acceptance procedure that will be followed, including details of the sampling and analysis that will be undertaken, to prove that the waste is not contaminated. The Operator will not be allowed to commence construction with this material until we have approved their report.

In terms of waste code 19 12 12, the Operator has confirmed that only aggregates in the form of clean, inert hard-core, brick rubble and broken concrete will be used.

Overall we have considered several questions in assessing the Operator’s WRP, including

- is there a clear benefit to the activity?
- is the recovered waste material(s) suitable?
- is only the minimum amount of waste being used?
- is the recovered waste a substitute for non-waste?
- will the work be completed to an appropriate standard?

We have concluded that the proposed activity, based on the information that has been provided, is a waste ‘recovery’ activity. We have approved the WRP and referenced it within Table S1.2 of the draft varied Permit as it forms part of the Operating Techniques for the Installation.

The WRP also included a method statement for the construction of the engineered surfacing. We have included an Improvement Condition (IC6) on the draft varied Permit requiring the Operator to submit a construction report including photographic evidence of the works at key stages in the process. We have included this condition to ensure that the work is of an appropriate standard for the protection of soil and groundwater beneath the site.

5.5 Management of hazardous waste

The Operator proposes to treat up to 2,000 tonnes per annum of oil containing drilling muds in the road sweepings plant. This is hazardous waste with the EWC code 01 05 05*. They are already permitted to treat non-hazardous gulley washings and freshwater drilling muds in the road sweepings plant.

The Operator states that hazardous waste will not be accepted on site unless it is pre-booked with the following information:

- the date of proposed arrival on-site
- producer's details
- type of process producing the waste
- the specific process from which the waste derives
- the quantity of waste
- chemical analysis of the waste
- the form the waste takes
- handling requirements
- hazard characteristics of the waste, and
- chain of custody notes.

The Operator states that all hazardous waste arriving on site will be covered and transported separately to other non-hazardous waste destined for treatment at the road sweepings plant. Waste acceptance will be decided on the basis of laboratory analyses to confirm the nature of the waste and whether it is within treatable ranges. Any non-conforming wastes will be rejected. Rejected wastes will be stored and/or segregated appropriately according to their hazard potential, prior to removal off-site. Computerised record keeping will form part of their waste tracking system information.

Hazardous waste accepted at the road sweepings plant area will be stored, separately to non-hazardous waste, on impermeable surfacing within a recessed, concrete sided bay. Any excess run-off from the bay will be captured by the sealed drainage system and directed via an interceptor to the process water reed beds for treatment prior to discharge to sewer.

The drillings muds will be subjected to a series of treatments within the plant including washing, flocculation, shredding, screening, crushing, baling, and pelletising. The process water used for (a) treatment and (b) flushing the plant prior to any introduction of non-hazardous waste will be stored in a purpose built tank (separate to that for the storage of the non-hazardous

process water) until it is too contaminated for further use, upon which it will be removed off-site for disposal.

As discussed in section 5.1.1 we have included a pre-operational condition (PO8) on the draft varied Permit requiring the Operator to submit a commissioning plan which shall include a method statement for the effective removal of hazardous waste residues from the plant prior to the treatment of non-hazardous waste. A follow-up Improvement Condition (IC4) requires the Operator to submit a report on the commissioning process which clearly demonstrates with appropriate evidence, that hazardous waste residues are effectively removed.

Following treatment two residual fractions will be produced from the plant:

1. Grit, sand and stone which will be stored in a specified bonded area with sealed drainage, within the confines of wider road sweepings plant area. This material will be sampled at the end of each working day to gain a number of representative samples of the material. The material will be segregated awaiting results from these samples and if the material is deemed to be non-hazardous in nature it will be sold as a product. If the material is still deemed to be hazardous, the material will be treated again and re-tested.
2. Dry fine material / filter cake which will contain the hazardous contaminants removed from the stone and sand which is the major component of the drilling muds. The Operator initially proposed to bioremediate this fraction but subsequently decided that this hazardous material would not be further treated on-site. Once removed from the plant, they propose to store it in a sealed skip within the road sweepings plant area prior to removal off-site for disposal. Before removal off site, they propose to sample the material to determine the appropriate type of disposal method, depending on whether the material is hazardous or non-hazardous waste.

There will be no emissions to air or ground from the storage and treatment of the oil contaminated drilling muds. We have compared the measures submitted by the Operator with our sector guidance *S5.06 Guidance for the recovery and disposal of hazardous and non-hazardous waste*, and are satisfied that these are consistent with our requirements and appropriate for the facility.

6. Other emissions to the environment

6.1 Emissions to air

6.1.1 Point source emissions

In addition to the biofilter emissions discussed in section 5.2.1 there will be two other point source emissions to air. These are associated with the management of the biogas produced by the AD process. The source of these emissions are (a) the off-gas stack, and (b) the auxiliary/emergency gas flare.

6.1.1.2 *Off-gas stack*

The Operator has proposed that the daily running of the biogas upgrading plant will be contracted to a third party who have considerable experience of operating such plants in the UK. The contractor will also be responsible for ongoing maintenance, emergency call-out to ensure safe operation of the plant, performance testing and training of those staff employed by the Operator who will assist the contractor as required.

The biogas produced in the AD plant will be upgraded to enable it to be exported to the National Grid. The biogas upgrading system will remove carbon dioxide (CO₂), oxygen (O₂), hydrogen sulphide (H₂S), and other soluble gases to produce a gas primarily comprised of methane (CH₄) (approximately 97%) which is clean and dry. The resultant gas, called biomethane, will be produced using the following techniques:

- activated carbon filtration (to remove H₂S from the incoming biogas)
- compression (to increase pressure to drive the gas through the subsequent membrane separation stage)
- heating (to provide the optimal temperature for membrane separation)
- condensation (to remove water from the saturated biogas)
- membrane separation (to separate CH₄ from CO₂, O₂, and any residual H₂S).

The upgrading plant is controlled by a programmable logic controller coupled with a gas analysis system which measures various parameters of the biomethane, including its calorific value, oxygen, carbon dioxide, hydrogen sulphide and water vapour content. The system will enrich the biomethane by injecting vaporized propane to the required level, and for safety purposes a tetrahydrothiophene odour component will be added to give the biomethane the characteristic smell of gas and allow leaks to be recognised. Following propane injection, the enriched biomethane will be validated in accordance with UK gas quality requirements to confirm its suitability for injection into the National Grid.

The upgrading plant contains an off-gas exhaust stack through which waste gases removed from the incoming biogas are vented to atmosphere at up to 470m³/h. The off-gas will consist predominantly of carbon dioxide (98.5%) with residual gases including methane and hydrogen sulphide. Methane slip,

i.e. the amount of methane gas in the off-gas stream, is expected to account for no more than 0.3-0.5% of the off-gas due to the membrane technology proposed, and as such no additional off-gas treatment is proposed. The Operator states the membrane technology proposed has been selected due to its favourable performance in terms of methane slip compared to other available technologies. They have considered other options including amine (chemical wash) technology but consider that membrane separation offers a reasonably practicable level of performance. They have proposed to keep the issue of methane slippage under review.

The emissions data from the biogas upgrading plant were obtained from the manufacturer and not based on real-time operational monitoring data. Our experience of emissions data provided by applicants proposing biogas upgrading plants show that the impact on human health is often insignificant. As a precautionary measure, we consider it appropriate to set an Improvement Condition (IC2) which requires the Operator to undertake a monitoring survey following the commissioning of the biogas upgrading plant to obtain actual (real-time) operational monitoring data. A further Improvement Condition (IC3) requires the Operator to undertake an air emissions impact assessment (H1 software tool) using the results of the monitoring survey and compare the long and short term impacts of pollutants in accordance with the Environment Agency's Air Emissions Risk Assessment guidance. Following the review of results from the monitoring survey and impact assessment, the Environment Agency shall consider whether or not emission limits are appropriate at emission point A6. In the event that emission limits are not considered necessary, the use of surrogate monitoring shall be employed. We have used this approach for biowaste treatment facilities proposing to install biogas upgrading plants across England.

6.1.1.3 Auxiliary/emergency flare

The biogas upgrade plant has an associated auxiliary/emergency enclosed (ground) flare. This will only be used to combust biogas generated by the AD plant when the biogas upgrading plant is unavailable due to routine maintenance or in the event of a breakdown. The flare provides a means of safely disposing of biogas in these situations and is an essential safety requirement on all AD facilities in order to prevent the dangerous build-up of explosive biogas. The Operator expects that the flare will operate for less than approximately 5% of the year. They contend that the likely air quality impacts associated with gas flaring will be insignificant. They did not undertake an H1 screening of short-term emissions to air.

In order to check whether short term emissions from the flare could have an impact upon local air quality we have undertaken a screening assessment of short term emissions, based on the expected parameters of a biogas flare of 6MW thermal input at the location proposed within the Installation. The closest residential dwelling to the Installation is Whitemere House, located approximately 200m northwest from the proposed biogas flare. We have determined the potential air quality impact at this residential receptor due to the emission of the following pollutants typically emitted from biogas flares:

- oxides of nitrogen (NO_x (as NO₂))
- carbon monoxide (CO)
- and volatile organic compounds (VOCs)

Our risk based screening methodology uses a concept of 'process contribution' (PC), which is the estimated concentration of emitted substances after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest. The methodology provides for a simple method of calculating the PC primarily for screening purposes and for estimating process contributions where environmental consequences are deemed to be relatively low. It is based on using dispersion factors which assume worst case dispersion conditions, therefore the calculated PC is likely to be an overestimate of the actual maximum pollutant concentrations.

Once the PC has been calculated we compare it with Environmental Quality Standards (EQS) for air quality. We consider the PC to be insignificant if the short-term process contribution is less than 10% of the relevant EQS. Where an emission is screened out in this way, we would normally consider that an applicant's proposals for the prevention and control of the emission to be BAT. That is because if the impact of the emission is already insignificant, it follows that any further reduction in this emission will also be insignificant.

We derived flare emission rates based on the following Emission Limit Values (ELVs) taken from Table S3.1 of our draft varied Permit:

- NO_x (as NO₂), 150 mg/Nm³
- CO, 50 mg/Nm³
- Total VOCs, 10 mg/Nm³

Again, this is conservative because it assumes that the flare is operating at the maximum permitted emission concentrations which in reality may not be the case.

Using the hourly landfill gas flare dispersion factors in the Environment Agency's Air Emissions Risk Assessment guidance we have screened for emissions of hourly NO₂, 8 hour CO and hourly benzene (assuming 100% of total VOCs are benzene) at the nearest residential receptor. We are satisfied that the use of landfill gas flare dispersion factors is also appropriate for the screening of AD biogas flare emissions.

Our checks have indicated that for short-term emissions, the PCs at the nearest residential receptor are all likely to be less than 10% of the relevant EQS and well below the short-term insignificance criterion. The maximum calculated PC was for NO₂, at 2.7% of the EQS. Therefore as the emissions screen out as insignificant we are satisfied that in terms of human health, the short-term risk to air quality from the proposed flare operations is low.

The draft varied Permit includes emission limits for the flare in relation to emissions of NO_x (as NO₂), CO and total VOCs. Following commissioning the

Operator will be required to undertake monitoring if the flare operates for more than 10% of a year and they will be required to record the number of operational hours per year.

We have reviewed the proposals for biogas upgrading and the associated use of the auxiliary/emergency biogas flare and are satisfied that these are consistent with our Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013). Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and/or minimise point source emissions to air.

6.1.2 Fugitive emissions

Fugitive emissions to air from the Installation will consist of odour (discussed in section 5.1.2) and dust (including bioaerosols.) Due to the existing composting operations a 'Dust and Bioaerosol Management and Monitoring Plan' is already in place for the site. This is subject to review annually or following a change to work conditions or practices at the site. The key control measures within the plan include:

- undertaking waste activities within buildings whenever possible
- implementing speed limits for vehicles using the site
- requiring all vehicles entering and leaving the site to be sheeted/covered
- use of a water bowser (on permanent standby) to dampen down surfaces
- minimisation of drop heights when moving waste to prevent windblown dust
- regular maintenance of site roads and surfacing on operational areas
- regular sweeping of roads and operational areas to prevent excessive dust build-up
- daily, visual inspection at all areas of the site and site boundary and action taken to deal with / suppress excessive dust build-up
- recording of inspection findings and remedial action taken within the site diary
- having in place a formal recording and investigation of environmental complaints procedure
- use of an automated weather station on-site to plan operational activities during periods of higher winds and to aid with correlation of complaints received against site activities on any given day
- routine bioaerosol monitoring undertaken in accordance with environmental permit requirements
- responsibility for implementing the above management plan is at Site Manager level.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and/or minimise fugitive emissions to air.

6.2 Emissions to water

Emissions to surface water will be made via emission point SW1 to a tributary of the Moors River. The discharge will consist of surface water run-off arising from the soils yards (in the area of the site extension) and from the area around the site entrance. Run-off from the soils yard will drain directly to a primary silt lagoon which will allow the larger particles to settle out. Run-off from around the site entrance will be pumped to the primary silt lagoon via an oil interceptor. Following storage in the lagoon the clarified run-off is then either re-cycled on site for the washing of gravels, or piped to two vertical flow reed beds prior to discharge to surface water.

We recognise that reed beds are increasingly used to treat a wide range of industrial effluents. Typically they are planted with the reed *Phragmites australis* which has an extensive root system which provides a habitat for natural soil bacteria. These bacteria degrade pollutants through a combination of aerobic and anaerobic digestion, ion exchange and filtration processes, depending upon the nature / strength of the incoming wastewater.

The proposed vertical flow reeds beds will provide additional treatment to the run-off through filtration and degradation of suspended solids, and through microbiological breakdown of any residual organic material. The Operator has submitted a report which details the fundamental aspects of reed bed design, including system sizing, hydraulics and general civil engineering aspects of vertical flow systems. Although we have not seen details of the final design we are satisfied in principle that the proposed 'surface water' reed beds will provide an effective means for improving the quality of the run-off prior to discharge, and consider that this treatment technology (which represents an environmental improvement) is appropriate for the facility.

The Operator currently holds a water discharge activity permit, reference SW/401724/A001, from the Environment Agency for the existing discharge of site run-off to surface water. With regard to the discharge from the new reed beds via emission point SW1, we have considered this to all intents and purposes to be a new discharge. This is because the area of the soils yard and the proposed treatment system, and the location of the emission point itself are all different to those in relation to the existing discharge permit. However, the composition of the influent is expected to be similar in nature so we have copied the existing emission limits from permit SW/401724/A001 across into the draft varied Permit. Table S3.2 of the draft varied Permit contains emissions limits for 'suspended solids' (50mg/l) and for 'visible oil or grease' (no visible trace present). The discharge is likely to be intermittent as it is rainfall related and as such there is no flow condition(s) on the draft varied Permit. The Operator will be required to monitor suspended solids on a monthly basis and to make a daily visual inspection of the outfall for any signs of oil or grease. Once the new discharge point SW1 is operational our understanding is that the existing discharge point on permit SW/401724/A001 will be decommissioned and that permit surrendered by the Operator.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and/or minimise emissions to surface water.

6.3 Emissions to sewer

The Operator already holds a trade effluent consent issued by Wessex Water, reference 51792. The discharge of process water will therefore continue to be made to sewer via emission point S1, which leads to Palmersford STW. The discharge will consist of contaminated water arising from within the AD plant bunded area, the two green waste composting lagoons and the road sweepings plant storage area. This effluent will be pumped to two new vertical flow reed beds for treatment prior to discharge to sewer. These reed beds are additional to those mentioned in section 6.2.

Our view on these proposed 'process water' reed beds is the same as that described in section 6.2.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to minimise emissions to sewer.

6.4 Noise and vibration

The Operator has submitted a qualitative risk assessment for noise and vibration in accordance with our H1 Annex A guidance. They consider the main sources of noise from the site to be from vehicles (contractor lorries and on-site mobile plant) including noise from reversing beepers and the operation of plant and equipment (e.g. auxiliary/emergency gas flare, pumps, drying plant, SRF plant). They state that noise will be potentially intermittent throughout the day and that with the proposed on-site mitigation in place, the residual risk to be low. Overall they conclude that there will be no significant noise impact on surrounding sensitive receptors.

The Operator has proposed to implement the following methods and procedures to control noise emissions:

- consideration will be given to the proximity of receptors and also the prevailing wind direction when siting any noisy plant or equipment
- treatment processes will either be confined within a building or in such a manner that allows noise attenuation to be provided by the positioning of material stockpiles around that process
- buildings will be constructed using materials with sound reduction properties
- all plant and equipment will be fitted with noise control measures, such as silencers, where deemed necessary
- all plant and equipment will be regularly maintained to minimise noise resulting from inefficient operation, including plant exhausts which will be maintained in accordance with statutory requirements

- where plant or equipment defects or disrepair cannot be remedied within a reasonable time-scale, the plant or equipment will not be used until such action is completed
- vehicles using the site will travel across designated routes that have been designed and located so as to minimise nuisance to receptors located outside the site boundary
- access roads will be regularly maintained to minimise emissions of noise due to uneven and poor surfacing
- a 10mph speed limit will be imposed for vehicles delivering waste to the site to reduce noise associated with higher engine speeds – traffic calming measures will be used to help enforce this speed limit
- the possibility of using alternative alarms or technology in the event that reversing alarms are found to give rise to substantiated complaints will be investigated
- the doors of the waste reception buildings will be kept closed at all times when appropriate
- when handling waste material, drop heights will be kept to a minimum where possible
- all site personnel will be trained in the need to minimise site noise.

In addition to the above measures the Operator has constructed a noise attenuation bund along the northern boundary of the site. There is also an earth bund along the western boundary on Chapel Lane to attenuate noise impacts at residential receptors to the west along Barrack Road. It is proposed to extend these bunds during the construction phase of the proposed development.

We consider that the above measures represent BAT and broadly follow the noise hierarchy outlined in our H3, Part 2 guidance on 'Noise Assessment and Control'.

The Operator has also provided details of their procedure for dealing with any complaints received about noise experienced outside the site, i.e. how they would investigate the complaint, and the remedial actions they would take if the complaints were substantiated.

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 and to prevent pollution from noise and vibration outside the site.

The draft varied Permit includes our standard condition which requires the Operator to submit to the Environment Agency for approval a Noise and Vibration Management Plan should the activities at the Installation give rise to pollution outside the site boundary.

7 Habitats sites, Sites of Special Scientific Interest and non-statutory conservation sites

7.1 Habitats sites

Under Regulation 9 of The Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations) the Environment Agency has a general duty such that we “in exercising any of [our] functions, must have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions.” Regulation 61 is a specific duty requiring the Environment Agency to “make an appropriate assessment...” wherever granting a permit is “...likely to have a significant effect on a European site... (either alone or in combination with other plans or projects)”.

The EU Habitats Directive (92/43/EEC) established a network of designated conservation sites of European importance, known as ‘Natura 2000’ sites, made up of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SACs support rare, endangered or vulnerable natural habitats, plant and animal species. SPAs support significant numbers of wild birds, for example wintering wildfowl, and their habitats. SPAs were established by the EU Birds Directive (79/409/EEC). The following SACs and SPAs are located within 10km of the Installation:

- Dorset Heaths SAC
- New Forest SAC/SPA
- River Avon SAC
- Dorset Heathlands SPA
- Avon Valley SPA

Ramsar sites are wetlands of international importance designated under the Ramsar Convention. Although there are no legal protections for Ramsar sites, it is the Government’s policy that such sites be accorded the same protection as European sites. The following Ramsar sites are located within 10km of the Installation.

- New Forest Ramsar
- Dorset Heathlands Ramsar
- Avon Valley Ramsar

In undertaking our Habitats assessment we have considered (a) point source emissions to air from the Installation, namely the off-gas stack on the biogas upgrading plant, and the auxiliary/emergency gas flare, and (b) point source emissions to water from the surface water reed beds.

7.1.1 Off-gas stack

In considering this emission to air we have made reference to our Operational Instruction (OI) 66_12, *Simple assessment of the impact of aerial emissions from new or expanding IPPC regulated industry for impacts on nature*

conservation. We have considered whether the emission is 'relevant' for assessment under the Habitats Regulations (i.e. whether it is likely to have a significant effect on the relevant European and Ramsar sites) by thinking about whether the constituent gases within the off-gas emission, principally carbon dioxide, but also including small amounts of methane and hydrogen sulphide, could pose a risk to the features of the designated site, and if the site is sensitive to them.

Potential risks can be direct or indirect. Direct risks include toxic contamination, nutrient enrichment and acidification. Indirect risks include habitat loss, physical damage and smothering. In considering direct risks, we make reference to the environmental standards that have been established in order to protect the habitats and species that are found within nature conservation sites. These standards are known as Critical Levels and Critical Loads.

The Critical Level is the gaseous concentration of a pollutant in the atmosphere above which direct adverse effects on receptors, including plants and ecosystems, may occur, according to current knowledge. Critical Levels for the protection of vegetation and lower plants such as lichens and bryophytes, have been set for the following pollutants: oxides of nitrogen (NO_x (as NO₂)), sulphur dioxide (SO₂), ammonia (NH₃) and hydrogen fluoride (HF).

The Critical Load relates to the quantity of pollutant deposited from air to the ground. It is a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on sensitive elements of the environment are not expected to occur, according to current knowledge. Critical Loads have been set for nutrient-N deposition and acid deposition (N and S) but these are long-term standards. There are no Critical Loads for assessing short-term emissions.

Given the scope of the above standards, our view is that the pollutants in the off-gas will not pose a direct risk to the designated habitats. Neither do we consider there to be the potential for any indirect risks. In following the aforementioned OI we have therefore concluded that the off-gas emission to air is not considered 'relevant' for assessment under the Habitats Regulations and that no further action is necessary.

7.1.2 Auxiliary/emergency flare

In considering this emission to air we firstly made reference to our Air Quality Technical Advisory Group (AQTAG) guidance, *AQTAG14 Guidance on identifying 'relevance' for assessment under the Habitats Regulations for PPC installations with combustion processes*. This guidance sets out supplementary criteria for use in assessing whether specific combustion processes at an installation are 'relevant' for the purposes of assessment under the Habitats Regulations. Having determined that a combustion activity process is within the relevant Stage 1 distance screening criteria, i.e. which in this case is within 10km of a designated site, we then apply the supplementary criteria which is based on the size (in megawatts, MW) of the combustion process under consideration. This identifies whether the

combustion process is 'relevant' for assessment under the Habitats Regulations.

The Operator stated that the proposed auxiliary/emergency flare has a thermal input of 6MW and as such it could not be 'screened out' from further assessment at Stage 1 as it exceeds the 5MW minimum threshold. Therefore we considered whether emissions from the flare could have a likely significant effect on a designated site, via a Stage 2 assessment.

As already reported in section 6.1.1.3 we have undertaken a screening assessment of short-term emissions from the flare. In addition to screening for impacts upon human health we have also considered the likely impact upon Habitats sites by comparing the PC against the short-term Critical Level for NO_x (as NO₂) of 75µg/m³. This was the only Critical Level relevant to the assessment. For SACs/SPAs/Ramsar sites, a pollutant is considered insignificant if the short term PC is less than 10% of the Critical Level.

Our checks have indicated that for short-term emissions, the PC for NO₂ at the nearest designated Habitats site, located approximately 325m from the proposed flare, is likely to be less than the short-term insignificance criterion of 10%. The maximum calculated PC equated to 6.4% of the Critical Level. We therefore consider the emission to be insignificant and that the proposed flare operations will not have a likely significant effect *alone* on any designated Habitats site.

We have also considered the potential combined effects of emissions to air from the proposed flare, as required by Regulation 61(1)(a) of the Habitats Regulations. This helps to ensure that designated Habitats sites are not damaged by the cumulative effects of multiple permissions, plans or projects (PPP). We have considered whether the flare emissions could act in combination with any other Environment Agency PPP or the PPP of another competent authority. We have concluded that the proposed flare operations will not have a likely significant effect *in combination* with other PPPs on any designated Habitats site.

7.1.3 Surface water reed beds

This emission to watercourse is not considered 'relevant' for assessment under the Habitats Regulations. This is because the point of discharge from the surface water reed beds to a tributary of the Moors River is not within 10km (measured along the receiving watercourse in a downstream direction) of any designated Habitats site. We use a 10km screening distance to quickly identify those emissions which could not, based on distance alone, have a likely significant effect on a designated site, and which can therefore be screened out from further assessment. In this case the emission is screened out at Stage 1 of our process and no further action is necessary.

7.1.4 Summary

We have concluded that the proposed emissions from the Installation, whether alone or in combination with other plans or projects, will not have a likely significant effect on any of the designated Habitats sites. We recorded this assessment on an Appendix 11 form and sent it to Natural England (for information only) in accordance with our permitting procedures.

7.2 Sites of Special Scientific Interest

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 a Site of Special Scientific Interest (SSSI).

The following SSSIs are located within 2km of the Installation:

- Parley Common SSSI
- Moors River System SSSI
- St Leonards and St Ives Heaths SSSI
- Town Common SSSI
- Hurn Common SSSI

With the exception of the Moors River System SSSI all of the other identified SSSIs are also either SAC, SPA or Ramsar sites as well and overlap in spatial terms with those designated Habitats sites.

7.2.1 Emissions to air

With regard to emissions to air from the off-gas stack and auxiliary/emergency biogas flare we principally follow the same assessment process as for European and Ramsar sites in order to determine whether the proposed emissions could damage any SSSI. The insignificance criterion that we apply is the same as before, in that we consider a pollutant to be insignificant if the short term PC is less than 10% of the Critical Level for NO_x (as NO₂). We therefore consider the assessment methodology and the results described in sections 7.1.1 and 7.1.2 to be equally valid for our SSSI assessment. In accordance we have concluded that the proposed emissions to air will not damage the special features of any SSSI.

7.2.2 Emissions to water

With regard to emissions to water from the proposed surface water reed beds, we have assessed whether the discharge could damage the Moors River System SSSI. There is a clear source-pathway-receptor relationship involving the discharge of treated surface water run-off from the Installation to a ditch which is in downstream continuity with the Moors River. The “dumping, storage, spreading or discharging of any materials or substances (including

effluent disposal)" is contained within Natural England's Operations Likely to Damage (OLD) list for the Moors River System SSSI. This is because the river and its associated invertebrates and fish could potentially be affected by the proposed discharge due to changes in water quality.

Natural England's Views about Management (VAM) of the SSSI with respect to discharges are listed below, and we have taken these views into account in our assessment:

- The maintenance of good water and sediment quality are essential to maintaining a healthy river system.
- Effluents entering the river directly or indirectly should be treated to reduce the levels of phosphorus contained within them to concentrations that will not lead to a proliferation of algae or the disappearance of characteristic plants and animals.
- Organic pollution should also be controlled to avoid de-oxygenation of the water or any toxic effects on aquatic animals and plants.
- Siltation of the river bed can smother and infill coarse gravels, which can affect fish spawning success and the establishment of submerged plants, as well as having an impact on the invertebrates living in and on the riverbed.

The proposed discharge will be made to a drainage ditch at National Grid Reference (NGR) SZ 10688 98900 and from there it will flow in a north-northeasterly direction until it meets the Moors River (within the SSSI) approximately 900m downstream. The discharge will consist of surface water run-off arising from the relocated soils yard and from the area around the site entrance. Oil/water separators will be installed on the drainage system to remove any oils from the site run-off. Following storage in the proposed primary silt lagoon where larger suspended material will settle out, the clarified run-off will then either be re-cycled on-site for the washing of gravels, or piped to the two proposed vertical flow reed beds. The reeds beds will provide additional treatment to the run-off through filtration and degradation of suspended solids, and through microbiological breakdown of any residual organic material. We are satisfied that the reed beds are appropriate technology for the facility.

The Operator is already permitted via a 'water discharge activity' (WDA) permit from the Environment Agency, ref. SW/401724/A001, to discharge settled surface water run-off from the site. The discharge is made to a drainage ditch at the site boundary and thereafter enters the Moors River downstream. We have carried over the emission limits from the existing WDA permit for the parameters 'suspended solids' and 'visible oil and grease' because the proposed discharge will be very similar in nature to the existing discharge. However due to the construction of the new reed beds we consider that the Operator's variation proposals represent an environmental improvement over the existing situation and as such will offer additional protection to the receiving waters and the SSSI.

While we have carried over the existing numeric emission limit for suspended solids of 50mg/l onto the draft varied Permit, we would expect the discharge to be of a better quality following treatment in the reed beds. Combining this with the fact that the discharge point is almost 1km upstream of the Moors River our view is that any residual suspended material will have settled out within the ditch system. We therefore do not consider that fish and invertebrates within the SSSI will be damaged through increased sedimentation upon the river gravels. Neither do we consider that eutrophication will be an issue as the discharge should not contain phosphorus. Furthermore as the discharge should not be rich in organic matter, de-oxygenation of the receiving waters will not be an issue. As stated previously we consider that the proposed discharge will be an improvement over the existing situation. We have therefore concluded that the proposed discharge from the surface water reed beds will not damage the Moors River System SSSI.

7.2.4 Summary

We have concluded that the proposed emissions from the Installation will not damage any of the designated SSSIs. We recorded this assessment on a CROW Appendix 4 form, a copy of which can be found on our public register.

7.3 Non-statutory conservation sites

Conservation sites are protected in law by legislation. The Habitats Directive provides the highest level of protection for SACs and SPAs, while domestic legislation provides a lower but important level of protection for SSSIs. Finally the Environment Act 1995 and Natural Environment and Rural Communities Act 2006 provide more generalised protection for flora and fauna rather than for specifically named conservation designations (as set out in sections 8.2.1 and 8.2.4 below). It is under these Acts that we assess other sites (such as local wildlife sites).

The following non-statutory local wildlife sites and conservation sites are located within 2km of the Installation:

Local Wildlife Sites

- Fillybrook-Crabs Field
- Hurn Forest
- Hurn-Airport-NE Industrial Area
- Ferndown Golf Course
- Berry Hill
- East Parley Common
- Fir Grove Copse

Local Nature Reserves

- Stour Valley

As shown in the previous sections, for SACs, SPAs, Ramsar sites and SSSIs we consider the PC in making an assessment of impact. In assessing these other sites under the Environment Act and Natural Environment and Rural Communities Act we look at the impact from the Installation alone in order to determine whether it would cause significant pollution. This is a proportionate approach, in line with the levels of protection offered by the conservation legislation to protect these other sites (which are generally more numerous than Natura 2000 or SSSIs) whilst ensuring that we do not restrict development.

Critical Levels and Critical Loads are set to protect the most vulnerable habitat types. Thresholds change in accordance with the levels of protection afforded by the legislation. Therefore the thresholds for SAC, SPA and SSSI features are more stringent than those for other nature conservation sites. We would generally conclude that the Installation is not causing significant pollution at other non-statutory sites if the PC is less than the relevant Critical Level or Critical Load, provided that the Applicant is using BAT to control emissions. We consider a pollutant to be insignificant if the PC is less than 100% of the Critical Level or Critical Load.

As before, our view is that the assessment methodology and the results described in sections 7.1.1 and 7.1.2 to be equally valid for our non-statutory sites assessment. None of the identified non-statutory sites are located closer to the Installation than the statutory sites considered in the previous sections. In accordance we have concluded that the proposed emissions to air will not cause significant pollution at the non-statutory conservation sites.

In addition, we are satisfied that there are no potential risks to the non-statutory sites from the surface water reed bed discharge to the Moors River tributary as there is no mechanism for impact. The proposed discharge is not in downstream continuity with any of the non-statutory conservation sites and therefore could not lead to significant pollution of those sites. Therefore this emission will not cause significant pollution at the non-statutory conservation sites.

7.3.1 Summary

We have concluded that the proposed emissions from the Installation will not cause significant pollution to any of the designated non-statutory conservation sites.

8 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.

8.1 The EPR and related Directives

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

8.1.1 Schedules 1 and 7A to the EPR – IED

We address the requirements of the IED in the body of this document.

There is one requirement not addressed above, which is that contained in Article 5(3) IED. Article 5(3) requires that “In the case of a new installation or a substantial change where Article 4 of Directive 85/337/EC (now Directive 2011/92/EU) (the EIA Directive) applies, any relevant information obtained or conclusion arrived at pursuant to articles 5, 6 and 7 of that Directive shall be examined and used for the purposes of granting the permit.”

- Article 5 of the EIA Directive relates to the obligation on developers to supply the information set out in Annex IV of that Directive when making an application for development consent.
- Article 6(1) requires Member States to ensure that the authorities likely to be concerned by a development by reason of their specific environmental responsibilities are consulted on the Environmental Statement and the request for development consent.
- Articles 6(2)-6(6) make provision for public consultation on applications for development consent.
- Article 7 relates to projects with transboundary effects and consequential obligations to consult with affected Member States.

The grant or refusal of development consent is a matter for the relevant local planning authority. The Environment Agency’s obligation is therefore to examine and use any relevant information obtained or conclusion arrived at by the local planning authorities pursuant to those EIA Directive articles.

In determining the Application we have considered the Environmental Statement submitted with the planning application (which also formed part of the Application), and the response of the Environment Agency to the local planning authority in its role as consultee to the planning process.

We have complied with our obligation under Article 5(2) so far as we are able in that no conclusion has yet been arrived at by the local planning authority. From consideration of the Environmental Statement and our response as consultee to the planning process we are satisfied that no additional or different Permit conditions are necessary.

The Environment Agency has also carried out its own consultation on the Application which includes the Environmental Statement submitted to the local planning authority. The results of our consultation are described elsewhere in this decision document.

8.1.2 Schedule 9 to the EPR – WFD

As the Installation involves the treatment of waste, it is carrying out a *waste operation* for the purposes of the EPR, 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 WFD is applied to the generation of waste and that any waste generated is treated in accordance with Article 4 of the WFD.

The conditions of the varied 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 WFD; ensuring that the requirements in the second paragraph of Article 23(1) of the WFD are met; and ensuring compliance with Articles 18(2)(b), 18(2)(c), 23(3), 23(4) and 35(1) of the WFD.

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.

Energy efficiency is dealt with elsewhere in this document but we consider the conditions of the Permit ensure that the recovery of energy take place with a high level of energy efficiency in accordance with Article 23(4).

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

8.1.3 Schedule 22 to the EPR – Water Framework and Groundwater Directives

To the extent that it might lead to a discharge of pollutants to groundwater (a “groundwater activity” under the EPR), 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. The requirements of the Water Framework Directive are considered at section 7.3.2 below.

8.1.4 Directive 2003/35/EC – Public Participation Directive

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

This Application is being consulted upon in line with this statement, as well as with our guidance RGN6 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 Application and later, separately, on the draft varied 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.

8.2 National primary legislation

8.2.1 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 the varied Permit to take account of the Section 4 duty.

For waste the guidance refers to ensuring waste is recovered or disposed of in ways which protect the environment and human health. 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 the varied Permit to take account of the Section 4 duty.

(ii) *Section 5 (Preventing or Minimising Effects of Pollution of the Environment)*

We are satisfied that our pollution control powers have been exercised for the purpose of preventing or minimising, remedying or mitigating the effects of pollution.

(iii) *Section 6(1) (Conservation Duties with Regard to Water)*

We have a duty to the extent we consider it desirable generally to promote the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and the land associated with such waters, and the conservation of flora and fauna which are dependent on an aquatic environment. We consider that no additional or different conditions are appropriate for the varied Permit.

(iv) *Section 6(6) (Fisheries)*

We have a duty to maintain, improve and develop fisheries of salmon, trout, eels, lampreys, smelt and freshwater fish. We consider that no additional or different conditions are appropriate for the varied Permit.

(v) *Section 7 (Pursuit of Conservation Objectives)*

This places a duty on us, when considering any proposal relating to our functions, to have regard amongst other things to any effect which the proposals would have on sites of archaeological, architectural, or historic interest; the economic and social well-being of local communities in rural areas; and to take into account any effect which the proposals would have on the beauty or amenity of any rural area. 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.

(vi) *Section 39 (Costs and Benefits)*

We have a duty to take into account the likely costs and benefits of our decisions on the applications ('costs' being defined as including costs to the environment as well as any person). This duty, however, does not affect our obligation to discharge any duties imposed upon us in other legislative provisions. In so far as relevant we consider that the costs that the varied Permit may impose on the Operator are reasonable and proportionate in terms of the benefits it provides.

(vii) *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 the varied Permit.

8.2.2 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.

8.2.3 Countryside and Rights of Way Act 2000 (CROW)

Section 85 of CROW 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. Cranborne Chase and West Wiltshire Downs AONB is closest to the Installation at a distance of 10km due west.

8.2.4 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 varied Permit are required.

8.3 National secondary legislation

8.3.1 Water Environment (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 compliance with the requirements of the Water Framework Directive and the EQS Directive through (amongst other things) environmental permits, and its obligation in regulation 17 to have regard to the river basin management plan (RBMP) approved under regulation 14 and any supplementary plans prepared under regulation 16. We have concluded that existing Permit conditions are sufficient in this regard and no other appropriate requirements have been identified. We are therefore satisfied that granting the Application with the Permit conditions proposed would not cause the current status of the water body to deteriorate and that it will not compromise the ability of this water body to achieve good status by 2027.

8.4 Other relevant legal requirements

8.4.1 Duty to Involve

Section 23 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. Section 24 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 3. Our public consultation duties are also set out in the EPR, 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 RGN6 and the Environment Agency's Building Trust with Communities toolkit.

ANNEX 1: Pre-Operational Conditions

Based on the information in the Application, we consider that we do need to impose pre-operational conditions for future development. 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	Operation	Pre-operational measures
PO1	All proposed additional activities contained in variation application EPR/GP3793FY/V010	The Operator shall submit to the Environment Agency an updated report on the baseline conditions of soil and groundwater at the Installation. The report shall be written by an appropriately qualified person and shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already referenced in the application Site Condition Report (SCR) dated October 2014, such that the full extent of the installation is characterised in order to meet the information requirements of Article 22(2) of the IED.
PO2	All proposed additional activities contained in variation application EPR/GP3793FY/V010	The Operator shall submit to the Environment Agency for approval a Site Closure Plan which shall describe the techniques that the Operator will rely upon to manage the decommissioning and closure of the site following the cessation of operations. The plan shall include (but not be limited to) those measures specified in the application (within BATOT document, v2, Jan

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		2015).
PO3	Anaerobic digestion plant	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning, the Operator shall ensure that a review of the design, method of construction and integrity of the proposed site secondary containment is carried out by a qualified structural engineer. The review shall compare the constructed secondary containment against the standards set out in section 7.9.1 of the Environment Agency Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013) and CIRIA C736 - Containment Systems for the Prevention of Pollution - secondary, tertiary and other measures for industrial and commercial premises.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> • 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; and • a preventative maintenance and inspection regime <p>A written report of the review shall be submitted to the Environment Agency detailing the review's findings and recommendations. Remedial action shall be taken to ensure that the secondary</p>

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		<p>containment meets the standards set out in the guidance documents and implement the maintenance and inspection regime.</p> <p>No operations shall commence or waste accepted unless the Environment Agency has given prior written approval under this condition.</p>
PO4	Anaerobic digestion plant and ABPR/food waste bulking and transfer	<p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning, the operator shall submit to the Environment Agency for approval an addendum to their existing Waste Acceptance Procedure confirming the specific details of their waste pre-acceptance and acceptance procedures, which shall take into account the indicative BAT in section 3.1.4 and 3.2.2 respectively of our Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013).</p> <p>No operations shall commence or waste accepted unless the Environment Agency has given prior written approval under this condition.</p>
PO5	Anaerobic digestion plant and biogas upgrading plant	<p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to commissioning, the operator shall submit a written copy of the site Environmental Management System (EMS) and make available for inspection all documents and procedures which form part of the site EMS.</p> <p>The EMS shall cover all activities at the installation and shall be in</p>

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		<p>accordance with the Environment Agency Guidance – How to develop a management system: environmental permits and section 8.2.1 of the Environment Agency Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013). The EMS shall include the techniques the operator relies upon to manage the operation, accidents (including flooding), closure and decommissioning of the site. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.</p> <p>The Operator shall clearly indicate via accompanying cover letter any updates to their EMS since the issue of variation notice EPR/GP3793FY/V010.</p> <p>No operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written approval under this condition.</p>
PO6	Anaerobic digestion plant and biogas upgrading plant	<p>Within 4 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning, the Operator shall provide written evidence to the Environment Agency of the Technically Competent Manager (TCM) at the proposed installation. The report shall confirm that the person(s):</p> <ul style="list-style-type: none"> hold the relevant qualifications under the CIWM/WAMITAB scheme or other equivalent qualifications for the operation of the anaerobic digestion plant, and

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		<ul style="list-style-type: none"> • have appropriate competence for operating the biogas upgrading plant (including the injection of biomethane into the National Grid). <p>No operations shall commence or waste accepted unless the Environment Agency has given prior written approval under this condition.</p>
PO7	Anaerobic digestion plant and biogas upgrading plant	<p>At least 8 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning, the Operator shall provide a written commissioning plan, including timelines 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 actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions.</p> <p>Commissioning shall be carried out in accordance with the commissioning plan as approved by the Environment Agency.</p>
PO8	Road sweepings plant (hazardous waste treatment)	<p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to commissioning of the road sweepings plant with hazardous waste (oil contaminated drilling muds), the Operator shall</p>

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		<p>provide a written commissioning plan, including timelines 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 actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions.</p> <p>The commissioning plan must also include a method statement (including monitoring proposals) for ensuring that hazardous waste residues are effectively removed from the plant prior to the treatment of non-hazardous waste.</p> <p>Commissioning of the plant with hazardous waste shall be carried out in accordance with the commissioning plan as approved by the Environment Agency.</p> <p>Commissioning shall not commence unless the Environment Agency has given prior written permission under this condition.</p>
PO9	SRF plant, Bedding plant and Plastics and Rejects dryer	At least 4 weeks (or any other date as agreed with the Environment Agency) prior to commissioning, the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include (as appropriate) the expected emissions to the environment during the different

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
		<p>stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions.</p> <p>Commissioning shall be carried out in accordance with the commissioning plan as approved by the Environment Agency.</p>
PO10	Waste recovery (site extension)	<p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of construction of the engineered surfacing, the Operator shall submit a written report to the Environment Agency detailing the waste pre-acceptance and/or acceptance procedure to be applied to EWC 17 05 04 waste. The report shall detail the procedures for ensuring that only inert, non-hazardous waste is used during construction, including details of the sampling and analysis undertaken to prove that the waste is not contaminated.</p> <p>The procedure shall be implemented in accordance with the report as approved by the Environment Agency.</p>

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 is 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	Requirement	Date
IC1	The Operator shall submit a written report to the Environment Agency on the commissioning of the anaerobic digestion facility and biogas upgrading plant. The report shall be written by an appropriately qualified person and summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 6 months of the completion of commissioning.
IC2	<p>The Operator shall carry out a monitoring study to quantify the emissions in relation to the releases of pollutants to air from the installation. The study shall include the monitoring of point source releases to air from the biogas upgrading plant (emission point A6) during normal operation, having regard to the Environment Agency technical guidance M2 and to MCERTS standards.</p> <p>Two separate monitoring campaigns in a year shall be completed as follows:</p> <ul style="list-style-type: none"> • one monitoring campaign 6 months following operation of the biogas upgrading plant; and • one monitoring campaign 12 months following operation of the biogas upgrading plant. <p>The following pollutants to be monitored shall include: Total Volatile Organic Compounds (VOCs); and Hydrogen sulphide</p>	Within 12 months following the operation of the biogas upgrading plant

Reference	Requirement	Date
IC3	<p>Following the completion of IC2, the Operator shall undertake an environmental impact assessment of point source releases to air from the biogas upgrading plant, using the information obtained through the emissions monitoring. The environmental impact assessment and all associated monitoring reports shall be submitted in writing to the Environment Agency for review.</p> <p>The environmental impact assessment shall include:</p> <ul style="list-style-type: none"> • details of the monitoring undertaken and the results obtained; • results of the assessment of long and short term impacts from the emissions in accordance with Environment Agency Guidance on undertaking risks assessments for environmental permits • a completed H1 assessment software tool <p>If the H1 assessment shows that long or short term impacts from the emissions are not insignificant, the operator shall propose an action plan to reduce the impacts of the substances identified.</p> <p>Following the submission of the documentation, the Environment Agency shall assess whether setting of emission limits or routine monitoring is required.</p>	Within 1 month following the completion of IC2
IC4	<p>The Operator shall submit a written report to the Environment Agency on the commissioning of the road sweepings plant with hazardous waste. The report shall be written by an appropriately qualified person and shall summarise the commissioning process undertaken and clearly demonstrate with appropriate evidence, e.g. monitoring data, how effectively hazardous waste residues have been removed from the plant prior to treatment of non-hazardous waste.</p>	Within 1 month following the completion of commissioning

Reference	Requirement	Date
IC5	The Operator shall submit to the Environment Agency an updated Site Condition Report which references the additional ground investigation(s) required under pre-operational condition PO1, and which contains a full list of permitted activities at Section 3 of the SCR.	Within 3 months following the submission of the PO1 report
IC6	The Operator shall submit to the Environment Agency a report on the construction of the engineered surfacing on the area of the site extension. The report shall be written by an appropriately qualified person and shall include, but not be limited to, details of the method of construction and photographic evidence of the work taken at key steps in the construction process.	Within 1 month following the completion of construction

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ANNEX 3: Consultation Responses

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 18th February 2015 to 31st March 2015 and in the Bournemouth Daily Echo on 18th February 2015. Copies of the Application were placed in the Environment Agency's Public Register at Rivers House, Blandford, Dorset, and the Public Register at Christchurch Borough Council offices in Christchurch, Dorset.

The following statutory and non-statutory bodies were consulted:

- Christchurch Borough Council environmental protection department
- Food Standards Agency
- Health and Safety Executive
- Public Health England and the Director of Public Health
- Civil Aviation Authority
- National Grid
- Dorset Fire and Rescue Service.

1) Consultation Responses from Statutory and Non-Statutory Bodies

We have not received a response to our consultation from any of the statutory and non-statutory bodies listed above other than the FSA. We set out below the FSA's response and how we have taken this into account in our draft decision.

Response Received from Food Standards Agency	
Brief summary of issues raised:	Summary of action taken / how this has been covered
The FSA commented in relation to the proposed activity of animal bedding production from clean wood waste. They stated that they were currently conducting research into the uptake of contaminants into food animals from animal bedding derived from waste wood. They stated that they had concerns that a visual inspection of clean wood is insufficient to detect wood treatments which may be a source of organic contaminants. They	We have restricted the waste types of wood that the Operator may use to produce animal bedding to those that are akin to virgin materials which have not been treated. This includes plant tissue waste, forestry waste, and non-hazardous wood, sawdust, shavings and cuttings from wood processing activities and from the production of panels and furniture. It does not include any materials that contain resins and/or adhesives.

<p>concluded by saying that this policy area was currently under review and that their advice regarding the practice could be subject to change in the future.</p>	<p>We have not included the following EWC waste codes in the draft varied Permit:</p> <ul style="list-style-type: none"> • 17 02 01 - wood from the construction and demolition industry, and • 20 01 38 - wood contained in municipal wastes, i.e. household waste and similar commercial, industrial and institutional wastes.
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2) **Consultation Responses from Members of the Public and Community Organisations**

No representations were received.

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B) Advertising and Consultation on the Draft Decision

This section reports on the outcome of the public consultation on our draft decision carried out between <insert date> and <insert date>.

To be completed following the public consultation.

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