

Decision document refusal

We have decided to refuse the substantial variation for a Soil Washing and Heat Treatment (“SWHTF”) facility at Brookhurst Wood Aggregate Treatment and Recycling Centre operated by Biffa Waste Services Limited.

The location of the facility is Langhurstwood Road, Horsham, West Sussex, RH12 4QD.

We consider that in reaching this decision to refuse we have taken into account all relevant considerations and legal requirements.

Purpose of this document

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

- highlights key issues in the determination;
- gives reasons for refusal;
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account; and
- shows how we have considered the Consultation responses.

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

Read the permitting decisions in conjunction with the refusal notice.

Key issues of the decision

Structure of this document

Part A: The Application

Part B: The legal framework

Part C: Description of the facilities

Part D: Reasons for refusal

Part E: Decision considerations

Part F: Consultation responses

Appendix A: Chronology

Appendix B: Maps showing site location and proposed layout

Part A: The Application

Brookhurst Wood Aggregate Treatment and Recycling Centre is currently permitted as a waste operation, for the storage and treatment of non-hazardous waste. This substantial variation Application was for:

The addition of two new treatment processes, each falling under Schedule 1, Section 5.3 A(1)(a)(ii) of EPR, for the disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day, involving physico-chemical treatment:

- treatment of hazardous waste soils through soil washing; and
- treatment of hazardous waste soils and contaminated materials through heat treatment by thermal desorption.

These additional activities would be undertaken and regulated as waste installation activities at the regulated facility.

Receipt of the Application

We gave the Application the reference number EPR/AB3700LS/V003. We refer to the Application as “the Application” in this document in order to be consistent.

The Applicant for this variation and Operator of the current environmental permit for waste operations is Biffa Waste Services Limited. We refer to Biffa Waste Services Limited as “the Applicant” in this document. Where we are talking about what would happen after the Permit is granted we refer to “the Operator”.

The Applicant’s proposed facility is located at Brookhurst Wood Aggregate Treatment and Recycling Centre which is currently undertaking a waste operation. We refer to the proposed varied site as “the Installation” in this document.

The Application was originally received by the Environment Agency on 29 July 2019. A not duly made letter was sent to the Applicant on 7 October 2019 outlining further information required from the Applicant by 15 October 2019 to allow the Application to continue to the consultation and determination stage. After discussions between Biffa and the Environment Agency an extension was agreed until 28 October 2019.

The required information included:

- additional assessments and associated fee payment for the habitats assessment, dust management plan and noise and vibration plan.

- continuing competence certificates.
- clarifications relating to the discharge to sewer.

The Applicant responded to the not duly made letter on 25 October 2019 and 4 November 2019.

The Applicant's response included a change to the proposal for the discharge to sewer. The Application proposed an integral water treatment stage whereby liquids extracted from the air-liquid separators (condensers) would be pumped into a water treatment system comprising of:

- An oil water separator
- A sand filter
- A Granular Activated Carbon ("GAC") vessel

The Applicant's original proposal was to pump treated effluent and any discarded process water from the soil washing system and thermal desorption process, through a pipeline to a holding tank within the adjacent leachate treatment plant (operated under a separate permit for landfill of non-hazardous waste), prior to discharge to foul sewer. In this scenario the boundaries of the two permits would overlap. The overlapping area would include the pipework connecting the soil washing and heat treatment facility ("SWHTF") to the leachate treatment plant, as well as the storage tank and discharge point that are currently within the permitted boundary of the landfill permit. This scenario created implications for the permit variation Application. Considerations included:

- Whether the treated effluent from the SWHTF would be discharged through the same physical discharge point to sewer as the leachate treatment plant (emission point S1 on the landfill permit) and subject to the existing trade effluent consent from the sewerage undertaker.
- Whether it was appropriate to use the leachate treatment plant storage tank for the treated effluent from the SWHTF.
- The fact that we would be required to assess the discharge from the proposed installation as a combined discharge with the existing leachate treatment plant discharge.
- Concerns about management of the shared infrastructure in terms of suitable maintenance, accident management and secondary containment.

In the not duly made letter, the Environment Agency wrote to the Applicant regarding these concerns. In their response on 25 October 2019, the Applicant amended the proposal to consist of a separate dedicated discharge pipeline from the SWHTF to foul sewer. There would be no interaction with the landfill leachate

treatment plant or infrastructure. This new discharge would be subject to its own consent from the sewerage undertaker which at the time of writing the Applicant is yet to apply for.

On 4 November 2019 the Application was Duly Made because the Environment Agency considered it was in the correct form and contained sufficient information for us to begin our determination. That did not mean that the Application necessarily contained all the information we would need to complete that determination.

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

Consultation on the Application

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

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

- *West Sussex County Council – Public Health*
- *Horsham District Council*
- *Public Health England*

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

Requests for further information

Although we were able to consider the Application duly made, we did in fact need more information in order to complete the determination process, and issued information notices (Schedule 5 Notices) on 28 January 2020, 6 April 2020 and 14 April 2020. A copy of each information notice was placed on our public register.

In addition to our information notices, we received additional information, including clarifications following Schedule 5 responses, from the Applicant. We made a copy of this information available to the public in the same way as the responses to our information notices. A chronological summary of the information received and relevant communications between the Applicant and the Environment Agency can be viewed in ‘Appendix A: Chronology’.

Part B: The legal framework

The Environmental Permitting Regime (“EPR”) is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. The proposed regulated facility is:

- An installation, and
- A waste operation covered by the Waste Framework Directive.

As this regulated facility proposes to treat hazardous waste it is expected to meet the requirements of:

“Sector Guidance Note S5.06: Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste” (S5.06).

S5.06 provides national sector guidance on the appropriate measures that are considered to represent Best Available Techniques for the storage and treatment of waste. S5.06 is based upon the European Best Available Techniques (“BAT”) Reference Document (“BREF”) for the waste treatment and storage sector produced by the European Commission. Additional guidance:

“Treating waste by thermal desorption (An addendum to S5.06)”

expands upon the requirements of S5.06 by setting out the additional requirements and appropriate measures that we expect regulated facilities to meet for the treatment of waste materials by thermal desorption processes. In order to obtain an Environmental Permit to carry out listed activities an Operator must satisfy the competent authority (the Environment Agency) through the submission of an Application for an Environmental Permit that their proposals employ Best Available Techniques.

Part C: Description of the facilities

Existing treatment operations

The Applicant holds an existing environmental permit for a non-hazardous Aggregate Treatment and Recycling Facility (“ATRF”) for the storage and treatment (sorting, screening, separation, washing and dewatering) of street cleaning residues, gully waste, wastes from waste water treatment plants and wastes from soil and groundwater remediation. The maximum total quantity of waste accepted is limited to less than 60,000 tonnes per year. It is a waste operations permit and the limits of the permitted activities are set out in table 1.

Table 1 Existing permitted waste operation

Description of activities for waste operations	Limits of activities
<p>R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents</p> <p>R4: Recycling/reclamation of metals and metal compounds</p> <p>R5: Recycling/reclamation of other inorganic materials</p>	<p>Treatment consisting only of sorting, screening, separation, washing and dewatering of waste into different components for recovery.</p> <p>All incoming waste shall be stored and treated on an impermeable surface with a sealed drainage system.</p> <p>Wastes shall be stored for no longer than 3 years prior to recovery.</p> <p>Waste types as specified in Table S2.1 of the Permit.</p>

On 23 March 2020 the Applicant contacted the Environment Agency to request the addition of new European Waste Catalogue (“EWC”) codes for acceptance at the ATRF. We responded to the Applicant on 23 March 2020 informing them that a separate application would be required because the suitability of the EWC codes for existing activities would need to be fully assessed and the current Application had progressed too far for this change to be made at this time.

There are therefore no proposed changes to this waste operation under this variation. The existing facility has an area of approximately 0.7 hectares and is situated to the south-south-west of the Brookhurst Wood Landfill site.

Proposed treatment processes

The purpose of the variation Application submitted by the Applicant was to add two treatment processes:

- The treatment of hazardous waste soils by soil washing.
- The treatment of hazardous waste soils by thermal desorption.

The proposed treatment areas would extend the existing site by approximately 20 hectares and would be located adjacent to the southern boundary of the existing ATRF plant.

The site is located approximately 4km north of Horsham, 1.5km north east of Warnham and 2km south of Kingsfold. The centre of the site is located at National Grid Reference (“NGR”) 517105, 134659. There are farmhouses and other isolated dwellings in the surrounding area.

There are a number of statutory and non-statutory habitats sites within the relevant screening distances of the proposed installation:

- 1 Site of Special Scientific Interest (“SSSI”)
- 1 Local Nature Reserve
- 3 Local Wildlife Sites
- 22 Ancient Woodlands

We have not consulted Natural England on this Application because we have been unable to complete our assessment of point source and fugitive emissions for the reasons set out in this document. We cannot therefore be satisfied that there will be no significant pollution and no impact on statutory and non-statutory habitats sites.

The daily capacity of the two proposed treatment processes exceeds the threshold limits applicable under Schedule 1, Part 2, Chapter 5, Section 5.3 and Section 5.6 of the Environmental Permitting (England and Wales) Regulations 2016 (“EPR 2016”). The site would be permitted for installation and waste operation activities. The activities proposed by the Applicant are listed in table 2 below.

Table 2 Proposed Installation Activities

Description	Activity as listed in Schedule 1 of EPR
Treatment of hazardous waste soils by soil washing	Section 5.3 Part A(1)(a)(ii): Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
Treatment of hazardous waste soils and contaminated materials through a thermal desorption activity	Section 5.3 Part A(1)(a)(ii): Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
Temporary storage of hazardous waste	Section 5.6 Part A(1): Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2 and 5.3 and paragraph (b) of this Section, except –

Description	Activity as listed in Schedule 1 of EPR
	temporary storage, pending collection, on the site where the waste is generated, or activities falling within Section 5.2.

The Operator also applied for the treatment of non-hazardous waste soils by soil washing and thermal desorption as waste operations and these are listed in table 3.

Table 3 Proposed waste operations

Waste Operations
Treatment of non-hazardous waste soils by soil washing for recovery.
Treatment of non-hazardous waste soils and contaminated materials through a thermal desorption activity.

The Application stated that depending on the consistency, moisture content and homogeneity of the accepted waste, pre-treatment may be required. Proposed routes of pre-treatment mentioned included:

- Screening to remove oversize fractions which will be stockpiled and crushed using portable plant. Crushed material could then be treated in the soil or ATRF washing plant.
- Mixing or blending of incoming waste using an excavator.
- Addition of a drying agent or material to provide cohesion or compressive strength.

Based on the information received during the permit determination we are not satisfied that the Applicant has applied for the correct activities. If we were to permit the proposed SWHTF we would expect to do so as follows in table 4.

Table 4 Environment Agency expected listed activities

Description ¹	Activity as listed in Schedule 1 of EPR
Treatment of hazardous waste soils by soil washing (where the wastes will be recovered after treatment, or are not waste)	Section 5.3 Part A(1)(a)(vi): Recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation or inorganic materials other than metals or metal compounds.
Treatment of hazardous waste soils by soil washing (where the wastes will be sent to landfill after treatment)	Section 5.3 Part A(1)(a)(ii): Disposal of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
Treatment of hazardous waste soils and contaminated materials through a thermal desorption activity (where the wastes will be recovered after treatment, or are not waste)	Section 5.3 Part A(1)(a)(vi): Recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation or inorganic materials other than metals or metal compounds.
Treatment of hazardous waste soils and contaminated materials through a thermal desorption activity (where the wastes will be sent to landfill after treatment)	Section 5.3 Part A(1)(a)(ii): Disposal of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
Temporary storage of hazardous waste	Section 5.6 Part A(1): Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2 and 5.3 and paragraph (b) of this Section, except – <ul style="list-style-type: none"> • temporary storage, pending collection, on the site where the waste is generated, or • activities falling within Section 5.2.
Description ¹	Waste operation

¹ Where a process is always disposal or always recovery the Operator will be permitted specifically for that option only. If certain waste may be recovered or disposed depending upon its nature or chemical composition, the Operator will be permitted separately for disposal and recovery activities. A treatment cannot be both recovery and treatment at the same time. The recovery or disposal status of a treatment process must be decided by the Operator at pre-acceptance (as this can significantly influence the total cost of the treatment), and confirmed both at acceptance and prior to treatment.

Treatment of non-hazardous waste soils by soil washing (where the wastes will be recovered after treatment, or are not waste)	Treatment of non-hazardous waste soils by soil washing for recovery.
Treatment of non-hazardous waste soils by soil washing (where the wastes will be sent to landfill after treatment)	Treatment of non-hazardous waste soils by soil washing for disposal.
Treatment of non-hazardous waste soils by thermal desorption (where the wastes will be recovered after treatment, or are not waste)	Treatment of non-hazardous waste soils and contaminated materials through a thermal desorption activity for recovery.
Treatment of non-hazardous waste soils by thermal desorption (where the wastes will be sent to landfill after treatment)	Treatment of non-hazardous waste soils and contaminated materials through a thermal desorption activity for disposal.
Description	Other possible activities
Treatment of hazardous waste by crushing and screening	More information is needed about this process to determine how it would need to be permitted, for example, as an additional listed activity or directly associated activity.
Treatment of hazardous waste by stabilisation and solidification	More information is needed about this process to determine how it would need to be permitted, for example, as an additional listed activity or directly associated activity.

The Application stated that hazardous and non-hazardous wastes would not be mixed.

The soil treatment process is designed to treat 30,000 tonnes per year of hazardous soil and 70,000 tonnes per year of non-hazardous soil. The principal elements of the process are separation, washing, polymer addition, flocculation and dewatering at a capacity of between 40 and 50 tonnes per hour.

The thermal desorption process is designed to treat up to 10,000 tonnes per year of waste soils and contaminated materials. This involves forming waste materials into a large pile, approximately 1,000 tonnes, within which are installed networks of heating, vapour recovery and temperature monitoring tubes. The treatment pile is expected to be 29.5m in length, 16m in width and 3m in height. Gas burners provide heat to the heater tubes bringing the temperature of the waste up to 300°C. It is estimated to take 30 – 40 days for the target temperature to be reached, after

which it is maintained for up to 4 days. The heat volatilises (evaporates) the volatile organic contaminants from the solid matrix of the waste, which are drawn through the pile and collected by the vapour recovery tubes.

The vapour recovery system maintains a slight negative pressure within the pile to capture volatilised contaminants and convey them to a treatment system. This treatment system comprises a heat exchanger, air-liquid separator, oil-water separator and Granular Activated Carbon (“GAC”) or thermal oxidation treatment.

The majority of the volatilised contaminant mass will be recovered as condensed liquids from the air-liquid separator, however the gas and vapour might have residual contamination. Where any contamination is not captured by the GAC treatment, additional treatment by thermal oxidation treatment is proposed.

The thermal desorption facility is designed such that two batches can be treated at any one time, with incoming contaminated soils being offloaded directly into the treatment area.

A stabilisation and solidification process was also proposed for treated waste residues that cannot be reused or recovered and do not meet the hazardous waste acceptance criteria for landfilling. This treatment involves the intimate mixing of soils, cementitious materials and additives to produce a homogenous material that cures and hardens, immobilising hazardous substances such as inorganic chemicals. Limited information was provided for this treatment process, and more information would have been needed to determine whether it is BAT and could be included in the permit.

We are unable to approve the drainage plan at this stage as we do not have full understanding of the activities and operational techniques proposed for them.

Assessing the proposals

The proposed treatment activities and storage of hazardous waste are listed activities under EPR and they must be operated using Best Available Techniques (“BAT”). The term ‘Best Available Technique’ is defined in Article 3 of the Industrial Emissions Directive as follows:

‘best available techniques’ means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole.

S5.06 provides national guidance on the appropriate measures that are considered to represent BAT for the storage and treatment of waste. In order to obtain an Environmental Permit to carry out listed activities an applicant must satisfy the competent authority, the Environment Agency, through the submission of an application for an Environmental Permit that their proposals employ BAT.

During the permit determination, three Schedule 5 Notices were sent to the Applicant requesting further information on the operating techniques proposed for the soil washing and thermal desorption processes in order to demonstrate that they are BAT. We have reviewed the operating techniques proposed by the Applicant for the activities and compared these with S5.06 and the Waste Treatment BREF. Changes made to the Application, and additional information provided by the Applicant are discussed in part D.

The proposed operating techniques provided for the soil washing and thermal desorption activities depart from the appropriate measures contained in S5.06 and the BREF. The Applicant has not demonstrated through this application that the alternative techniques proposed provide an equivalent level of environmental protection to the appropriate measures detailed in the guidance and that they are BAT. We have concluded that we cannot permit the facility to undertake the proposed activities because, based upon the information provided, it has not been demonstrated that the proposed operating techniques are BAT.

It is our view that the application is premature and needs further developing before submission of a new application.

The specific reasons for this decision are detailed further in Part D below and demonstrate that the deficiencies in the current Application require more than merely fine tuning and would require a new application.

Part D: Reasons for refusal

The Application has been refused. The reasons for refusal are:

- The Applicant has not demonstrated that the proposed measures for the management and control of potential fugitive emissions to air (specifically, Volatile Organic Compounds (“VOCs”) and dust) from the proposed waste treatment activities (soil washing, thermal desorption, solidification and stabilisation process) are BAT. Alongside this, we have reviewed the Dust Emissions Management Plan (“DEMP”) provided as part of the Application and concluded that it is not adequate.
- The Applicant has not provided adequate waste pre-acceptance and waste acceptance procedures for the proposed waste treatment activities including the soil washing facility, thermal desorption facility and solidification and stabilisation, to demonstrate:
 - That the wastes proposed are suitable for treatment.
 - That only suitable wastes will be accepted for treatment following appropriate checking and characterisation (that is, sampling and testing).

- The Applicant has not provided a H1 risk assessment with accurate and appropriate data to enable us to assess the environmental impact of the proposed discharge to sewer.
- We are not satisfied with the information provided regarding the sampling of treated output materials.
- We are not satisfied with the information provided regarding the coding of treated output materials.
- We are not satisfied with the information provided regarding pre-treatment of waste for thermal desorption.
- We do not have enough information about the design and operation of the stabilisation and solidification process.
- The Applicant has not provided an adequate Odour Management Plan (“OMP”)

The next section of the document explains how we reached our decision in this respect.

1. Fugitive emissions and DEMP

We have significant concerns regarding the proposed prevention and containment of fugitive emissions to air of VOCs and dust during the construction, operation and deconstruction of the thermal desorption piles. A Dust Emissions Management Plan (“DEMP”) was provided for the entire site, including the ATRF, thermal desorption and soil washing processes, in response to the third Schedule 5 Notice. We have reviewed the DEMP and concluded that the measures contained in it are not sufficient to ensure that dust emissions will be prevented and where necessary, controlled.

The Applicant proposed to treat a wide range of wastes with the potential to generate dust and/or VOC emissions if not managed effectively. These processes take place outside and are not fully enclosed so there must be robust and proportionate measures in place to control fugitive emissions of dust and / or VOCs from causing human health and environmental impacts off site. This is particularly important as the wastes to be accepted have the potential to generate dust and/or VOC emissions if not adequately controlled.

BAT for waste treatment is to prevent or, where that is not practicable, reduce diffuse emission to air. Guidance S5.06 states that as far as possible and practical to do so, the thermal treatment process should be carried out in an enclosed chamber in order to minimise air ingress and to prevent the uncontrolled release of fugitive emissions.

We are not satisfied that the proposals for the containment and prevention of fugitive emissions during construction, operation and deconstruction of piles is BAT when compared to the use of a fully enclosed treatment chamber or vessel.

Based upon the information provided in the Application, including responses to three Schedule 5 notices and other additional information, we are not satisfied that the Applicant has demonstrated that the proposed design and operation of the thermal desorption process represents BAT for the prevention and control of fugitive emissions to air, specifically dust and VOCs.

We are also not satisfied that the DEMP contains appropriate measures to prevent and control fugitive emissions from the proposed waste storage and treatment activities. A DEMP is required in accordance with the Environment Agency's Dust and Particulate Emissions Management Plan Guidance 'Control and Monitor emissions for your environmental permit'.

The original application proposed an "ex-situ thermal desorption" pile with a network of heating, vapour recovery and temperature monitoring tubes placed within it which when fully constructed would have an insulated cover placed over the top.

In the response to the first Schedule 5 Notice the Applicant proposed to cover the treatment pile with sprayed concrete encasement in addition to an insulating cover.

In the response to the second Schedule 5 Notice the Applicant proposed further changes to the design and operation of the thermal desorption process including:

- joint sealed and insulated retaining walls on 3 sides.
- a poured or sprayed concrete upper surface and front face.
- thermal blankets on top of the concrete layer.
- the use of a retractable roof cover over the treatment area.

Materials reception and construction of the treatment pile will be completed using direct tipping into the treatment bay, followed by levelling with an excavator bucket, which would be a potential source of dust and VOCs. The BREF refers to the need for containment, collection and treatment of diffuse emissions and includes techniques such as storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and /or enclosed equipment. We are not satisfied that the proposal meets this BAT requirement.

In the second schedule 5 response the Applicant removed the proposal for centrifuging or dewatering prior to thermal desorption. They also removed the proposal to carry out any pre-mixing in order to avoid the issue of preventing or accounting for the potential dilution of hazardous substances prior to treatment. This also would have removed excavator mixing as a potential source of dust and VOCs. Treating (mixing) any hazardous waste by excavator is not BAT. BAT is

identified in the guidance as the use of enclosed plant for such mixing of hazardous wastes.

However, in the third Schedule 5 Response, section 4.1.5 states that mixing of waste to homogenise the material prior to treatment could be particularly important for heat treatment (thermal desorption) and that it will take place by excavator.

Therefore, it remains unclear from the application if the proposed thermal desorption process requires the pre-treatment of waste, for example, mixing. Mixing is usually employed to improve the homogeneity and characteristics of a waste load, as suggested in section 4.1.5 of the Schedule 5 response referred to above. Because we are unsure what the situation is regarding the use of mixing as pre-treatment, we are unable to complete our assessment of this aspect.

In S5.06 and the BREF, BAT is identified as the use of covered conveyors or equivalent systems for the handling and transfer of hazardous waste. This is not proposed in the Application, which will rely upon the direct tipping of waste from vehicles and the use of excavators.

We are not satisfied that the use of sprayed concrete to provide containment of the thermal desorption treatment process is BAT, compared to the use of an enclosed treatment vessel, which is identified as BAT in the technical guidance for the prevention and control of fugitive emissions. This is not the equivalent to the use of a fully enclosed and abated treatment vessel for the prevention and control of emissions particularly during construction and deconstruction of the treatment pile.

The construction and deconstruction of the concrete covered pile is likely to be a potential source of fugitive emissions itself for example through emissions of dust and VOCs released during the construction of the uncovered pile prior to treatment as well as breaking up of the concrete and pile following treatment. According to the application, the concrete will be dismantled by cracking and breaking it up with an excavator mounted demolition plant, such as a jaw crusher. When the cover and concrete are removed, and during disturbance of the material, any trapped residual volatile gases will be released from the pile along with dust.

Also, the use of the concrete raw material to provide containment will create an additional waste stream of post-treatment crushed concrete, which itself will require treatment and subsequent recovery or disposal. The reliance upon the use of concrete and the generation of an additional waste stream, associated with the containment and operation of the treatment piles, is not considered to be BAT. The IED Annex III criteria for determining BAT includes the use of low-waste technology and minimising the consumption of raw materials. Section 2.6 of EPR 5.06 states that the production of waste should be avoided wherever possible, in accordance with the waste hierarchy which gives top priority to the prevention of waste.

Dust Emissions Management Plan (“DEMP”)

Applicants must provide a DEMP if they are applying for activities for the keeping and /or treating of soils or similar materials. The DEMP must show how the Applicant has taken into account the principle of the source, pathway, receptor model in planning the site, the operations and the use of abatement to minimise emissions. In addition to the concerns set out above, we are not satisfied with the DEMP provided as part of the Application.

We have reviewed the Applicant's DEMP and are not satisfied that it is adequate to control emissions of dust and particulates from the installation.

In particular:

- 1) More information is needed about how dust will be controlled during the construction and dismantling of the thermal desorption pile.
- 2) The plan is vague in the commitment to identifying dry dusty wastes and how they will be conditioned with water prior to movement around the site.
- 3) The list of sensitive dust receptors is incomplete. For example, the local river and surrounding vegetation has not been included and a number of other receptors are missing or identified incorrectly.
- 4) No detail has been provided as to the specifications of the dust suppression system planned for the site and the areas or specific equipment it will cover. Use of the system depends on 'ambient conditions' but these conditions have not been defined.
- 5) No plan is included setting out the areas covered by the suppression equipment therefore we are unable to conduct a meaningful assessment of this control measure.
- 6) We do not have enough information about the sampling and analysis regime used to determine whether re-circulated water from the water treatment system is suitable for use in the dust suppression system.
- 7) We do not agree with the Applicant's categorisation of close, intermediate and distant as set out in table 6. Dust has the potential to travel much further than 200m which the DEMP identified as 'distant'. We disagree with this categorisation.
- 8) We do not agree with the Applicant's sensitivity levels in table 9. Farm houses that include a residential dwelling should be high risk and offices should be medium risk.
- 9) There are a number of tables in the plan without accompanying explanations and conclusions, in particular in relation to wind direction and rainfall.

- 10) It is not clear at what point loads arriving and leaving the site will be sheeted to ensure control of fugitive emissions.
- 11) The language used in the plan is vague and non-committal in terms of triggers for action and the associated time frames.

In summary, based upon the information contained in the Application, including the DEMP, we are not satisfied that the operating techniques and measures proposed for controlling fugitive emissions are BAT.

2. Waste pre-acceptance and acceptance

We consider that the Applicant has not demonstrated that the proposed waste pre-acceptance and acceptance measures meet the criteria for BAT. We are not satisfied that the proposed wastes are suitable for treatment or that only suitable wastes will be accepted for treatment.

In order for the site to be considered a soil treatment facility, only soils, or soil-like materials should be treated. The Application for the proposed activities included wastes which were not soils or soil-like. These include adhesives, combustion ashes and metal grinding sludges. We need a full breakdown of contents and full justification if we are to permit wastes which are not “soils”. We need additional information about the nature and composition of these wastes to be able to determine whether or not they are appropriate for the proposed treatment processes and waste disposal or recovery options. The wastes need to be soil-like or stone-like to be considered further for a “soil treatment facility”. Justifying treatment purely in terms of EWC code alone is not enough. We must be satisfied that the composition of the waste is appropriate and that they are suitable for treatment at the same time as soils and soil-like materials.

The composition of contaminated hazardous waste soil is likely to vary within and between loads due to:

- The quantities of material that may be generated by contaminated land sites.
- The possibility of contamination hotspots at the sites.
- The potential presence of a wide range of contaminants.

Also, each contaminated land site is likely to be different depending upon its history and use. Therefore waste pre-acceptance and acceptance procedures, and associated sampling/testing, need to be rigorous enough to be able to identify and manage any such uncertainty and variability within the waste streams and loads accepted for treatment.

In the first Schedule 5 Notice, we asked the Applicant to demonstrate that their pre-acceptance, sampling, and analysis procedures met the requirements set out in the SGN 5.06. We did not receive a satisfactory response and sought further

information in the second Schedule 5 Notice. The Applicant responded on 18 May 2020. Table 1 of the main response document provides the waste acceptance criteria for the thermal desorption process.

In the response to the second Schedule 5 Notice, the Applicant stated that post-treatment a waste would be classified as non-hazardous waste if it contained less than:

- 1,000 mg/kg total petroleum hydrocarbons (“TPH”)
- 1,000 mg/kg poly aromatic hydrocarbons (“PAH”)
- 1,000 mg/kg benzene
- 30,000 mg/kg toluene
- 100,000 mg/kg ethylbenzene
- 100,000 mg/kg xylenes
- 50 mg/kg PCBs

This is not appropriate because you cannot have 1,000 mg/kg of TPH if you have 30,000 mg/kg of toluene, because toluene is a TPH. This is also true for ethylbenzene and xylenes.

In the response to the third Schedule 5 Notice, the Applicant’s pre-acceptance analysis require as a minimum, information on:

- pH
- inorganics including calcium, sulphate, chloride, ammoniacal nitrogen
- metals and heavy metals
- petroleum hydrocarbons (TPH CWG suite)
- speciated PAHs
- speciated phenols
- VOCs, including BTEX compounds
- asbestos screen, and quantification and identification where screen results are positive
- other contaminants likely to be present as a result of the process producing the waste or the

- site history (for example ammonia, cyanides, Polychlorinated Biphenyls (“PCBs”))

Their acceptance criteria for thermal desorption indicates that:

- the waste contain organic contaminants treatable by thermal desorption
- the waste does not contain chlorinated organics
- the waste can support its own weight in stockpile
- no liquids or aqueous wastes accepted
- loads must not comprise wholly demolition rubble or oversize materials
- the waste must contain a fine soil-like fraction
- at certain criteria levels, for example, the total amount of organic carbon (“TOC”) or TPH indicate whether it is likely that a waste would be, for example, inert after treatment

The information provided does not include clear criteria identifying which organic contaminants are “treatable” by thermal desorption and which cannot be treated, for example high molecular weight hydrocarbons such as tars. There is no limit set on the total concentration of hazardous inorganic substances such as heavy metals although limits are set for leachate levels. There is also no limit on water / moisture content.

We also have concerns about the waste acceptance criteria for the soil washing facility. We asked the Applicant about waste acceptance criteria for the soil washing facility in the third Schedule 5 Notice. The Applicant responded on 29 May 2020. The proposed waste acceptance criteria are:

- wastes must contain contaminants that are amenable to reduction in concentrations by soil washing (notwithstanding specific exclusions below)
- chlorinated organics, dioxins and furans will not be accepted for treatment at this facility
- PCBs at concentrations that are likely to result in concentrations >50 mg/kg in the filter cake will not be accepted
- generally materials with greater than 30% fines will not be accepted without specific consideration by the Technical Manager
- no non-solid (liquid or aqueous) wastes. Only solids/ dewatered sludges (also described as pasty wastes) to be accepted, and only if of a consistency to support their own weight in stockpile
- no radioactive wastes

There is no determination as to which contaminants “are amenable to reduction in concentrations by soil washing” and which are not. There is no information about whether the presence of total metals will affect their appropriateness for acceptance for soil washing. The only limits for soil washing, if the waste is to be subsequently stabilised / solidified, are pH, benzene, VOCs, PCBs and TOC – there are no overall PAH or asbestos limits set, for example, for this pre-treatment.

The determination as to whether a treated waste is inert, non-hazardous (or hazardous) cannot be done by looking only at the leachability of the input or output substances. Assessment of whether the input or output materials will be hazardous or non-hazardous must be based upon the total concentrations of the substances present (for example metals or organics) in the waste. This must be done in accordance with technical guidance document “WM3 Guidance on the Classification and Assessment of Waste”. Leachate tests can only determine if a non-hazardous waste is inert or not. Based upon the information in the application, the Applicant appears to be basing the assessment of whether a waste is inert upon the inert landfill acceptance criteria, without also considering the WM3 criteria.

BAT point 11, Section 2.1.2 of S5.06 states that “operators must have clear and unambiguous criteria for the rejection of wastes”. Based upon the information in the Application, we are not satisfied that the Applicant has appropriately clear and unambiguous criteria for the acceptance / rejection of waste for the proposed activities and therefore we are not satisfied that the waste acceptance measures are BAT.

For the reasons set out above, we are not satisfied that the Applicant has the appropriate procedures in place to ensure that only suitable wastes are received and accepted for treatment.

3. Discharge to sewer and H1 risk assessment

The Applicant’s assessment of risk from the discharge to sewer is incomplete and does not contain accurate and appropriate data to enable us to fully assess its environmental impact.

The Applicant has provided a H1 Risk Assessment Tool and a Supplementary Impact Assessment in response to the third Schedule 5 Notice. The Environment Agency considers that the information provided in these documents with respect to the water discharge activity is insufficient, and does not enable us to fully assess the environmental impact of these additional effluent streams.

The Applicant proposed to treat the following waste water streams in an on-site waste water treatment plant:

- collected run-off and any leachates from the reception, quarantine and treatment areas for the thermal desorption processes.

- liquids recovered from the thermal desorption treatment process in the vapour stream and subsequently extracted from the air-liquid separators.

It is unclear whether runoff from the soil washing treatment area, recovered as precipitation to the treatment area and leachate from soil stockpiles, will be subject to treatment in the on-site waste water treatment plant. The Application also states that discarded process water from the soil washing process will be discharged to sewer, but we are unclear whether this will also be subject to treatment in the on-site water treatment plant. This needs clarification in order to ensure the assessment of the discharge to sewer covers all possible contaminants as a worst case scenario.

In the proposed water treatment system an oil water separator would separate non-aqueous phase liquids with recovery to oil storage tanks. It would also settle larger diameter suspended solids to the base sump of the tank. The sand filter would remove finer suspended solids prior to GAC treatment to adsorb remaining contaminants prior to discharge to a holding tank.

Outputs from the water treatment process are proposed to be re-circulated through the soil washing process or used in the dust suppression system.

The soil washing process involves separation, washing, polymer addition, flocculation, dewatering and wet physico-chemical treatment. It is designed to separate waste material into recyclable or reusable materials. Water used within the soil washing process will be re-used. The Applicant has confirmed that under normal operating conditions there will be no discharge from the soil washing process.

If the soil washing process is unavailable for the re-circulation of treated process waters, or if the water is not suitable for re-circulation, the Application proposes to discharge it to foul sewer prior to treatment at the Horsham Sewage Treatment Plant. The receiving watercourse is a tributary of the River Arun. It is anticipated that the worst case volume needing to be discharged to sewer would be 5.3m³/hr. It should be noted at the time of writing, Southern Water Services Limited who operate Horsham Wastewater Treatment Works have not issued a trade effluent consent permitting the discharge of the proposed wastewater into their network.

The proposed list of waste for treatment at the installation includes a number of wastes containing hazardous substances. It is not clear how washing these waste materials with ever increasing contaminated water (due to recirculation process using wastewater from thermal desorption process containing contaminants as well as a proportion of clean mains water or uncontaminated rainfall dependent runoff) would be effective for removing all potential contaminants.

We are not satisfied that the Applicant has clearly set out the criteria against which they will assess whether the treated process waters are suitable for re-circulation in the soil washing process, suitable for use in the dust suppression system, or suitable for discharge to sewer.

H1 Risk Assessment

The Applicant used the Environment Agency's H1 Risk Assessment Tool to assess the impact of the discharge to sewer on the receiving environment. Fundamental to the H1 Risk Assessment Tool is confidence that the input parameters are representative. There are a number of inconsistencies and deficiencies in the H1 assessment which mean we are unable to complete our assessment of the potential environmental impact of the discharge.

Given the wastes proposed for treatment at the installation contain hazardous substances, and the concerns we have about the efficacy of the treatment process we sought evidence from the Applicant to demonstrate that the input parameters were representative. In the third Schedule 5 Notice we asked the Applicant to provide more information about the source of the data used in the H1. The Application referenced "similar plants" but did not confirm whether or not the "similar" plants accepted the same or similar wastes or employed the same or similar treatment processes. Therefore we were not satisfied that the data used in the assessment was representative of the emissions likely to be produced by the proposed activities and that the results and conclusions of the assessment (using this data) were valid.

In response to the third Schedule 5 Notice the Applicant provided a revised H1 Risk Assessment Tool and a "Supplementary Impact Assessment". This response reiterated "Discharge Quality has been provided by the technology supplier based on what is achieved from similar sized plants". This response does not address our concerns.

The information provided to support the Application does not contain all of the information outlined within the H1 screening tool guidance and therefore we are unable to complete our assessment of the H1 screening tool and assess whether the conclusions are appropriate and accurate. The information that has been omitted is:

- Raw data used to calculate the maximum and typical release concentrations, identifying whether the metal data is total or dissolved.
- The minimum reporting value ("MRV") for the analytical technique for each parameter.
- The input parameters used to estimate the mass release in kg/year for example, duration of discharge per day and an explanation as to why this varies per parameter.

Without this information we are unable to verify whether the data that has been used is valid and representative.

In addition there are a number of inconsistencies or queries associated with the information presented within the Supplementary Impact Assessment and the H1 Risk Assessment Tool:

- In Table 2 of the Supplementary Impact Assessment the average concentrations for Cobalt, Cyanide, PAHs, PCBs and Phenol exceed the maximum concentrations, and some of the values for mass release in kg/yr appear to be inconsistent with the release concentrations.
- In Table 3 it is not clear why Predicted No Effect Concentrations (“PNECs”) have been provided for substances which already have an Environmental Quality Standard (“EQS”) such as manganese and ethylbenzene. In addition, there is an operational EQS for xylene of 30µg/l as an annual average.
- The PNEC for petroleum hydrocarbons is not appropriate. Petroleum hydrocarbons refer to a mixture of a wide range of chemicals which can vary in properties. Once in the environment, the individual components will dissipate. EQSs have been derived for a number of individual substances including benzene, toluene, xylene and ethylbenzene, as well as a number of PAHs that can potentially be found among petroleum hydrocarbons. Similarly gasoline is a mixture of a range of hydrocarbons and as with petroleum hydrocarbons, once released into the environment, it won't be present as gasoline but will dissipate into the constituent components such as benzene, toluene, xylene and ethylbenzene. PCBs are classed as persistent organic pollutants of high concern in the environment due to the fact that they are persistent, bioaccumulative and toxic, therefore under:

‘The Persistent Organic Pollutants Regulations 2007’

the effluent would need to be managed in such a way that destroyed the PCBs. Evidence has not been provided by the Applicant to demonstrate that the on-site treatment processes would destroy any PCBs in the effluent prior to discharge to the sewer.

- Discharge quality data has been based on red phosphorus, however we would expect phosphorus data to be provided as Orthophosphate (“ORP”), Soluble Reactive Phosphate (“SRP) or Total Phosphorus (“TP”). In terms of potential impact on the environment, phosphorus is generally present as inorganic or organic phosphorus compounds and is rarely present as the element, red phosphorus, due to it being highly reactive.
- The list of potential contaminants within the discharge is not listed consistently within the Supplementary Impact Assessment.
- The Supplementary Impact Assessment has incorrectly screened out substances including Zinc (Zn), Nickel (Ni), Benzo(a)pyrene, Benzo(g,h,i)

perylene, Benzo(b) or Fluor-anthene(k) based on the minimum reporting value (“MRV”).

Our guidance explains that only if all the results are below the MRV and the MRV used was sufficiently low does that substance not need to be run through screening.

The EQS are:

- Zn 10.9µg/l annual average (“AA”)
- Ni is 4µg/l (AA) and 34µg/l maximum allowable concentration (“MAC”)
- Benzo(a)pyrene 1.7×10^{-4} µg/l (AA) and 0.27µg/l (MAC)
- Benzo(g,h,i) perylene 1.7×10^{-4} µg/l (AA) and 8×10^{-3} µg/l (MAC)
- Benzo(b) or Fluor-anthene (k) – both have 1.7×10^{-4} µg/l (AA) and 0.017µg/l (MAC)

Therefore the MRV for Zn as a minimum would be 1.09µg/l, Ni is 0.4µg/l, Benzo(a)pyrene, Benzo(g,h,i) perylene and Benzo(b) or (k) Fluor-anthene (k) 0.000001.7µg/l. Given that Table 2 gives a typical concentration of 245µg/l for Zn, Ni 164µg/l, Benzo(a)pyrene 100µg/l, Benzo(g,h,i) perylene 41µg/l and Benzo(b) or (k) Fluor-anthene 100µg/l, this would suggest that the MRV used was not sufficiently low.

- The data provided in the Supplementary Impact Assessment is in mg/l however in the H1 Risk Assessment Tool some data appears not to have been converted into µg/l.
- Some of the Sewage Treatment Reduction Factors (“STRF”) used in the H1 Risk Assessment Tool do not match those given in our guidance. In some instances a STRF has been given for substances that our guidance doesn’t cover but no source is provided.
- Aluminium is not included as a parameter however it will be used in the soil washing process as a flocculant in the form of poly aluminium chloride. Whilst the use of the flocculant is to agglomerate fine particles together, there may be potential for carry over into the effluent. We would expect some explanation why this parameter was not included in the Applicant’s assessment as Aluminium has an operational EQS of 1mg/l Total as an AA.

The Environment Agency considers that the information provided in in relation to the discharge to sewer is insufficient, and does not enable us to fully assess the environmental impact of these additional effluent streams.

4. Sampling of treated waste materials

S5.06 states that *“For each treatment process, the objectives and reaction chemistry should be clearly defined. There must be a defined end-point to the process so that the reaction can be monitored and controlled. The suitable inputs to the process must be defined, and the design must take into account the likely variables expected within the waste stream.”*

In order to satisfy the appropriate measure above and ensure that all waste is fully treated by the on-site activities, the Applicant needs to demonstrate how they will reliably know:

- what substances are in the waste loads received for treatment, and at what concentrations
- what substances remain in the waste following treatment, and at what concentrations

Demonstrating this is reliant upon the reliable and representative sampling of waste before and after treatment.

Technical guidance document WM3 Guidance on the Classification and Assessment of Waste provides guidance on the sampling of waste and sets out how sampling should be designed and undertaken to ensure that it produces representative and reliable data. Representative and reliable sampling data in this sense would be capable of accurately characterising the composition of the waste material in question, taking into account the size/number of waste loads/batches and any variability within or between them.

Soils for treatment by thermal desorption should contain organic substances that are able to be removed from the soil during to the treatment. The thermal treatment is only proven to be successful if these substances are sufficiently removed by the treatment. The Applicant is proposing to take one sample of treated waste per 100m³ and at least 5 samples per 500 tonnes, to check and confirm that the waste has been fully treated (i.e. that the relevant organic substances have been treated and removed). This would be 10 samples for the 1000 tonne treatment pile that is proposed. We would also need to know more information about the sampling method including the size and location of samples taken.

Based upon the information provided in the application, taking into account the variability of the waste material that may be received for treatment and uncertainties regarding the provision or extent of any pre-treatment of waste (which could help improve the consistency or homogeneity of the material prior to treatment), we are not satisfied that the proposed sampling of treated wastes is sufficient. Their post-treatment sampling protocol may not be enough to account for any variability in the loads received.

We would expect the applicant to provide additional information to demonstrate how their sampling procedures will account for any variability in the treatment pile.

This should be informed by the waste characterisation information obtained from waste pre-acceptance and acceptance.

5. Coding of output wastes

The Applicant has identified the EWC codes for the output materials from their treatment processes. Table 5 shows the EWC codes allocated by the Applicant, however:

- Remediated soils should be classified under sub-chapter 19 13 where they are still wastes. The Applicant is coding waste remediated “sand” and “gravel” as “minerals” under sub-chapter 19 12 09 which is an absolute non-hazardous waste code. An assessment of the treated material is needed and the relevant hazardous or non-hazardous 19 13 code given for each relevant output if the treated material is designated waste.
- Contaminated fines are coded by the Applicant as absolute non-hazardous minerals when they may be hazardous. This is a consequence of coding under sub-chapter 19 12. “Fines” should be coded under 19 13 as part of the remediation process and, where hazardous, get the relevant hazardous waste code. The fines are most likely to contain inorganic and organic contaminants that make the soil hazardous.
- Since the “filter cake” is from a water treatment process it is not a 19 12 waste. If it is a simple dewatering of fines then the waste is 19 13 after treatment. If it is a more intense chemical process 19 02 05*/06 may be appropriate.
- Where soils are thermally treated to remediate them, and the treatment process is complete, 19 13 should once again be used. If the thermal treatment is a pre-treatment, the treated waste can keep the code prior to treatment, for example 17 05 03* soil and stones.
- Spent GAC filters should be coded 15 02 02*.
- The Applicant has not indicated what the outputs from stabilisation / solidification are – these wastes are usually coded 19 03 04* and are absolute hazardous.

Table 5 EWC output codes

Material	Source	Applicant EWC code for output wastes
Fines (contaminated)	Mechanical separation process	19 12 09

Material	Source	Applicant EWC code for output wastes
Fines (uncontaminated)	Mechanical separation process	19 12 09
Organic fraction	Mechanical separation processes.	19 12 11* 19 12 12
Metals	Mechanical separation processes.	19 12 02
Sand Fraction	Mechanical separation processes.	19 12 09 only for material not achieving EOW
Aggregate Fraction	Mechanical separation processes.	19 12 09 only for material not achieving EOW
Filter Cake	Mechanical separation processes.	19 12 11* 19 12 12
Oil	DAF Water treatment	19 08 10*
Soils (contaminated)	Thermal desorption process	19 02 04*
Soils (uncontaminated)	Thermal desorption process	19 02 03
Oil	GAC Water treatment	19 02 07*
Spent GAC	GAC Filters	19 2 04*

6. Pre-treatment of waste for thermal desorption

As stated in Part D, we are unsure whether wastes will be mixed or pre-treated prior to treatment by thermal desorption. In the absence of mixing, it is our understanding that the Applicant proposes to combine similar wastes in the treatment pile and that this will be determined by the EWC code rather than the substance concentration. Only wastes that are very similar in substance concentration to their co-treated wastes should be treated together to avoid dilution occurring.

It is unclear if the proposed thermal desorption process requires pre-treatment, for example, mixing.

Mixing is usually employed to improve the homogeneity and characteristics of a waste load. Without pre-mixing or pre-treatment, contaminant type and concentration could vary significantly across and within the large treatment pile, for example, with some areas of high concentration and others of lower contamination. Similarly, the composition within and across the pile could vary by contaminant type and other parameters, such as material density, moisture content and size fraction. Without pre-treatment, in order to ensure all of the waste pile is fully treated the process would potentially need to heat the pile to the temperature and for the time required to treat the contamination “hotspots”. These are areas of the pile that will take the longest time or highest temperature to treat. Any such hotspots would need to be identified and taken into account by the treatment process to ensure they are fully treated, otherwise unknown areas of contamination may remain in the pile following treatment.

As explained above, pre-treating or pre-mixing the waste could increase the homogeneity of the material and improve its treatability by helping to optimise and reduce the treatment time and temperature required. However, we are unclear what, if any, pre-treatment is proposed for the thermal desorption process. Based upon the information contained in the application, we would not consider the use of an excavator to be BAT for the mixing and pre-treatment of hazardous waste.

7. Stabilisation and solidification (“S/S”) process

Based upon the application provided, we do not have enough information to know whether this activity needs to be permitted in its own right or whether it can be included within the listed activities as a directly associated activity to the soil washing or heat treatment activities.

Whilst it can be a follow on activity for wastes pre-treated on site, it may also be carried out on wastes that have not been treated. We need to know further details of the process, for example:

- whether the bound wastes are intended for recovery or disposal.
- the type of binders to be used and whether they are waste materials themselves.
- whether the process is specifically intended to produce a monolithic waste as all the cup tests appear to make a monolithic material.

It should be noted that S/S of filter cake is not S/S of soil because filter cake is not deemed to be a soil or soil like material and is likely to affect options for disposal.

The Application proposes that the process will be carried out in using either a batching plant or a semi-enclosed vessel, but there is no defined procedure for deciding which will be used. The propose batches are between 24 tonnes and 45 tonnes each.

The treatment vessel design is subject to finalisation. We would need further details regarding the design and operation of the proposed treatment vessel to determine if it is BAT. The vessel should be enclosed and routed to an abated and dedicated point-source emission point.

S/S must be carried out on an impermeable surface yet the picture provided in the Application shows the ground is not impermeable.

8. Odour Management Plan

The Odour Management Plan (“OMP”) was developed in accordance with the Environment Agency’s Horizontal Technical Guidance Note H4 – Odour Management (April 2011) and the Environment Agency Guidance “Odour Management Plans for Waste Handling Facilities”.

The fugitive emissions and VOCs discussed in Part D, part 1 are likely to be odorous and we have similar concerns about the OMP as we do about the DEMP.

Some of the key issues are:

- The list of sensitive odour receptors is incomplete. A number of receptors are missing or allocated incorrect risk levels.
- There is no commitment to covering stockpiles to reduce odour.
- BAT has not been met in terms of waste treatment in an enclosed vessel.

Conclusion

We have reached the decision that we are unable to permit the facility and are refusing the Application for variation because:

- The Applicant has not demonstrated that the proposed measures for the management and control of potential fugitive emissions are BAT or provided an adequate DEMP.
- The Applicant has not provided adequate waste pre-acceptance and waste acceptance procedures.
- The Applicant has not provided a H1 risk assessment with accurate and appropriate data to enable us to assess the environmental impact of the proposed discharge to sewer.
- We have concerns about the acceptance procedures, sampling of output materials, the coding of output materials and the stabilisation and solidification process. We remain unclear whether waste will be pre-treated prior to thermal desorption.
- The Applicant has not provided an adequate OMP.

Part E: Decision considerations

Section 108 Deregulation Act 2015 - Growth Duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 100 of that Act in deciding whether to grant this variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections. This also promotes growth amongst legitimate Operators because the standards applied to the Operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Part F: Consultation responses

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

Responses from organisations

Response received from: Public Health at West Sussex County Council

Brief summary of issues raised: no comments

Summary of actions taken: n/a

Response received from: Public Health England

Brief summary of issues raised: The main emission of potential concern from this variation is dust from the movement, treatment and sorting of soils. In addition, the heating of contaminated wastes gives rise to the potential for the emission of

vapours including VOCs and hydrocarbons. Mitigation is proposed through working practices and process design; the Applicant already operates soil processing facilities at the site which is part of an active landfill site. Emissions have been estimated via atmospheric dispersion modelling.

Based on the information contained in the Application supplied to us, Public Health England has no significant concerns regarding the risk to the health of the local population from the new processes which this permit variation would allow.

This consultation response is based on the assumption that the permit holder shall take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice.

Summary of actions taken: As outlined in Part D we have refused the Application and have not approved the Dust Emission Management Plan submitted by the Applicant.

Appendix A: Chronology

Date	Description
6 November 2018	Enhanced pre-Application advice request submitted.
6 December 2018	The Environment Agency confirmed receipt of the pre-Application advice and informed Biffa that due to a high volumes of requests, there would be a delay in responding to Biffa's request.
17 December 2018	The Environment Agency contacted Biffa to arrange a pre-Application meeting. Biffa agreed to progress the meeting by email and telephone.
14 February 2019	The Environment Agency provided Biffa with a pre-Application cost estimate letter.
27 February 2019	Biffa agreed the pre-Application costs.
15 March 2019	The Environment Agency provided Biffa with the pre-Application advice.
29 July 2019	Biffa submitted the permit Application to the Environment Agency.
20 August 2019	The Environment Agency confirmed receipt of the Application.
30 September 2019	The Application was allocated to a Senior Permitting Officer.
7 October 2019	The Environment Agency issued a 'non-duly made' letter.
15 October 2019	The Environment Agency held a teleconference with Biffa to discuss the additional information which the Environment Agency required.
25 October 2019	The Environment Agency received a response from Biffa.
4 November 2019	The Application was Duly Made.
19 November 2019	The Environment Agency requested the noise modelling files in an alternative format.
26 November 2019	Biffa provided the requested noise modelling files in an alternative format.
27 November 2019	The Environment Agency sought clarifications regarding the air emission point numbering. Biffa replied the same day.
27 November 2019	The Environment Agency informed Biffa that due to the work commitments in the Agency's Air Quality Management Assessment Unit ("AQMAU"), the review of the noise and potentially the air assessment was estimated to be April 2020.

11 December 2019	Biffa raised concerns with the Environment Agency regarding the potential impact on their business as a result of the timeframes quoted by AQMAU. The Environment Agency advised Biffa that they should submit a business case explaining the strategic importance of the development.
18 December 2019	The Environment Agency received a business case from Biffa in support of the Application.
18 December 2019	The Environment Agency prioritised the technical assessments by advancing Biffa's Application in AQMAU's work queue.
18 December 2019	In response to the Environment Agency's request Biffa provided an image of the cover/membrane in relation to the thermal process.
13 January 2020	The Environment Agency informed Biffa that the noise impact assessment audit was complete.
22 January 2020	The Environment Agency sent Biffa a draft Schedule 5 Notice.
27 January 2020	A telecom was held between the Environment Agency and Biffa to discuss the content of the draft Schedule 5 Notice.
28 January 2020	The Environment Agency issued a Notice of Request for More Information Issued under Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2016.
28 February 2020	The Environment Agency received Biffa's Schedule 5 response.
8 March 2020	Biffa provided diagrams that were incomplete within the Schedule 5 Response.
18 March 2020	The Environment Agency sent Biffa a draft of the second Schedule 5 Notice.
23 March 2020	Biffa emailed a request for additional EWC codes to be added to the list of waste for acceptance at the existing Aggregate Treatment and Recycling Facility (ATRF).
23 March 2020	The Environment Agency informed Biffa that a separate Application was required for the addition of waste codes to the ATRF.
31 March 2020	A telecom was held between the Environment Agency and Biffa to discuss concerns regarding the Best Available Technology or Best Available Techniques ("BAT").

6 April 2020	The Environment Agency wrote to Biffa to outline the Agency's concerns regarding the information provided by Biffa in relation to BAT.
6 April 2020	The Environment Agency issued a second Notice of Request for More Information Issued under Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2016.
20 April 2020	The Environment Agency received Biffa's response to the letter dated 6 April 2020.
18 May 2020	The Environment Agency received Biffa's response to the second Schedule 5 Noticed dated 6 April 2020.
14 April 2020	The Environment Agency issued a third Notice of Request for More Information Issued under Schedule 5 of the Environmental Permitting (England and Wales) Regulations 2016.
29 May 2020	The Environment Agency received Biffa's response to the third Schedule 5 Noticed dated 14 April 2020.
2 June 2020	The Environment Agency raised further points of clarification in relation to the second Schedule 5 Notice.
9 June 2020	The Environment Agency raised further points of clarification in relation to Biffa's response to the third Schedule 5 Notice.
9 June 2020	Biffa responded to the Environment Agency's request for further clarification regarding the second Schedule 5 Notice.
16 June 2020	Biffa responded to the Environment Agency's request for further clarification regarding the third Schedule 5 Notice.
1 July 2020	<p>During a telecom between the Environment Agency and Biffa, the Environment Agency informed Biffa that it was minded to refuse the Application.</p> <p>The Environment Agency also informed Biffa that it had used all the funds provided by Biffa to determine the Application. Biffa informed the Environment Agency that it was willing to provide further funds for the Agency's work to continue. The Environment Agency agreed to set up further meetings with Biffa.</p>
30 July 2020	Biffa provided a revised Technical Plan that consolidated all responses throughout the determination.
3 August 2020	The Environment Agency informed Biffa that a meeting to discuss any outstanding matters regarding the Application was no longer possible and they were minded to refuse.

2. Proposed site layout

