

# Permitting decisions

## Bespoke permit including part refusal

---

We have decided to grant the permit for Horseley Field Waste Treatment Facility operated by Dunton Environmental Limited.

We have decided to refuse the section 5.3 Part A (1) (a) (ii) activity involving physico-chemical treatment of soil using cement kiln dust/lime and hydrogen peroxide for the reasons outlined in section 3.0 of this document.

The permit number is EPR/BP3331DD.

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

### Purpose of this document

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

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

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

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

# Key issues of the decision

## 1.0 Permitted activities

### **1.1 Re-submission of application and withdrawal of activities**

The Applicant, now the Operator, submitted an application that included a number of waste treatment activity proposals. Following discussions with the Environment Agency the following proposals were removed from the application:

- Treatment of soil containing hazardous levels of heavy metals via stabilisation and ion exchange;
- Treatment of waste contaminated with Japanese knotweed; and
- Crushing and screening of non-hazardous waste.

After further discussions with the Environment Agency the Operator resubmitted their application. The application revised their operating techniques to demonstrate the implementation of Best Available Techniques (BAT) for two of the remaining activities. We have assessed the revised application and operating techniques and are satisfied that for the activities included in the permit the Operator will implement measures considered to represent BAT as outlined in our sector guidance note S5.06, the Waste Treatment BREF, the relevant monitoring guidance and Health and Safety Executive (HSE) guidance. The reasons for our decision are discussed in further detail below.

### **1.2 Treatment of soil containing asbestos containing materials (activity reference AR2)**

The site will receive waste contaminated with asbestos containing materials under Section 5.3 Part A (1) (a) (ii) of the Environmental Permitting Regulations (England and Wales) 2016 ("EPR 2016"). The waste producer will sample and classify the waste at the pre-acceptance stage and the Horseley Fields site will sample the waste at the acceptance stage to ensure that free asbestos fibres are below hazardous waste thresholds. The site layout has been designed so that asbestos waste will be treated within a designated area. Asbestos will be stored in enclosed bays provided with negative pressure to prevent emissions. The negative pressure system will connect to a filtration system (electrostatic precipitators/bag filter) and a carbon filter to prevent the release of any free fibres and any volatile organic carbons (VOCs). Waste will be wetted down prior to removal from the asbestos storage bays to minimise dust emissions. These wastes are loaded onto a hopper which is equipped with spray bars for additional dust management. Waste will be processed via a purpose built picking station which will consist of a raised conveyor belt with spray bars, enclosed by an airtight cabin served by the filtration system. Picked asbestos will be placed in dedicated bins, within double bag liners (activity reference AR7) in accordance with HSE requirements. The Operator has outlined a sampling regime using sub and composite samples to ensure effective, representative sampling for the acceptance and waste treatment validation stages. To further ensure insignificant emissions are released from the process, the Operator has outlined ambient air monitoring to detect releases to ensure the measures proposed remain effective. To ensure appropriate ambient air monitoring is implemented we have inserted these ambient air monitoring requirements into the emissions monitoring tables.

The Operator has demonstrated that they have identified the potential risks associated with the asbestos picking process. In order to remove the pathway to the receptor they have enclosed the storage and treatment process and provided abatement systems to effectively manage the emissions. They have committed to ensuring all waste is dampened during each stage of transfer between the enclosed areas in line with the requirements of the relevant HSE guidance. They have also demonstrated they have an appropriate monitoring and sampling procedure in place pre and post treatment to ensure reliable waste acceptance and validation of waste treatment. We are therefore satisfied that the Operator has appropriately demonstrated they will implement BAT to manage emissions from this process.

### **1.3 Treatment of hydrocarbon contaminated wastes via bioremediation (activity reference AR1)**

Under this activity the Operator will apply a bioremediation formula (Bioaccelerator) containing bacteria and nutrients to hydrocarbon contaminated waste under Section 5.3 Part A (1) (a) (i). The Operator will apply the Bioaccelerator and thoroughly mix it into the waste to ensure even distribution throughout the waste. The waste will then be formed into a biopile, enclosed and served by an extraction and carbon abatement system fitted with HEPA (high efficiency particulate air) filter to abate all potential VOC and bioaerosol emissions from the bioremediation process. The Operator has selected this abatement method as BAT for this site based on the efficiency of capturing emissions, instead of trying to draw them through the base of the biopile. The chosen method is easily cleaned and maintained to ensure continuing optimal working conditions at all times.

The biopiles will be turned twice a week to aerate the waste. To control emissions during this period the Operator will ensure biopiles are turned one at a time immediately after the high density polyethylene (HDPE) liner is removed. The process will take less than 30 minutes. The biopile will be wetted and a site operative will be stationed to supervise dust levels in line with the site's dust management plan. If dust is detected, turning will cease while the pile is re-dampened. The Operator has committed to ensuring all waste is dampened during each stage of transfer between enclosed areas to manage emissions. The Operator has also demonstrated that they have identified the potential risks associated with the process and removed the potential pathways to the receptor by enclosing the bioremediation treatment process and providing abatement systems to effectively manage the emissions.

The Operator has demonstrated appropriate monitoring and sampling procedures are in place pre and post treatment to ensure reliable waste acceptance and validation of waste treatment. To ensure the process meets BAT they have also outlined how they will manage and optimise the process through applying tailored microorganism and nutrient mixes and maximising aeration through regular turning. We have reviewed these proposals in line with the requirements of our guidance S5.06 and are satisfied that the Operator has appropriately demonstrated they will implement BAT to manage the process effectively and minimise emissions from the process.

#### **1.4 Dewatering of non-hazardous wastes (activity reference AR10)**

The Operator will undertake dewatering of non-hazardous wastes as a waste operation on site. Wastes from this activity will be sent offsite for onward recovery or disposal. Wastes will be placed on an appropriately constructed, impermeable concrete surface with kerbed edging and a sealed drainage system. This will allow the water content to drain to a sealed sump or to evaporate from the pile. There is no other treatment of this waste undertaken other than dewatering. Therefore, we are satisfied the Operator will implement appropriate measures to manage the emissions from this non-hazardous waste.

## **2.0 Emissions Management**

### **2.1 Dust emissions**

In order to manage dust emissions from the site, the Operator has produced a dust management plan which outlines the measures they will take to manage emissions. These include, but are not limited to:

- enclosure of all treatment activities;
- dust abatement (electrostatic precipitators/bag filter) on asbestos containing material storage bays and the treatment enclosure;
- dampening of waste during transfer and storage outside enclosures;
- good housekeeping measures;
- minimal drop heights; and
- visual and Frisbee dust monitoring with asbestos ambient air monitoring.

We have assessed these techniques against the standards outlined in our guidance and are satisfied the proposed measures are considered BAT for this type of site and the activities permitted. We have therefore incorporated the proposed management plan into table S1.2 - operating techniques which will require the Operator to implement the measures as part of the conditions of the permit.

### **2.2 Odour emissions**

In order to manage odour emissions from the site, the Operator has produced an odour management plan which outlines the measures they will take to manage emissions. These include, but are not limited to:

- enclosure of treatment activities which represent an odour risk;
- active extraction and treatment of air from enclosed activities;
- pre acceptance and acceptance measures for the rejection or handling of malodourous waste;
- dampening of waste during handling;
- good housekeeping; and
- odour monitoring encompassing the whole site boundary taking into account wind direction and sensitive receptor locations.

We have assessed these techniques against the standards outlined in our guidance and are satisfied proposed measures are considered BAT for this type of site and the activities permitted. We have therefore incorporated the proposed management plan into table S1.2 - operating techniques which will require the Operator to implement the measures as part of the conditions of the permit.

## **2.3 Noise emissions**

In order to manage noise emissions from the site, the Operator has provided a noise management plan which outlines the measures they will take to manage emissions. These include, but are not limited to:

- vehicle speed limits;
- noise bunds will be constructed on the eastern and southern sides;
- designated storage areas are located close to the treatment facilities and the waste reception area to limit movement distances around the site;
- storage areas have been situated within the site to be as far as possible from sensitive receptors;
- the types of wastes to be accepted (i.e. soils and sludges and asbestos waste) will present an inherently low noise risk;
- all waste will be handled with care when being loaded or unloaded;
- drop heights will be minimised; and
- record decibel readings twice a day during times of full operation to ensure emissions from the site are below levels likely to cause pollution.

We have assessed these techniques against the standards outlined in our guidance and are satisfied proposed measures are considered BAT for this type of site and the activities permitted. We have therefore incorporated the proposed management plan into table S1.2 - operating techniques which will require the Operator to implement the measures as part of the conditions of the permit.

## **2.4 Surface water runoff and sewer discharge**

In order to ensure all surface water runoff is appropriately managed, processing areas of the site are provided with impermeable concrete surfacing with a sealed drainage system. Potentially contaminated surface runoff will be treated using a Granular Activated Carbon (GAC) system followed by an oil interceptor. Non-hazardous and hazardous waste processing areas will be separated and runoff will be collected in separate tanks (activity reference AR6) designated for non-hazardous and hazardous runoff. Water will then be tested prior to discharge to sewer and if the limits do not meet the sewer discharge limits, the water will be removed from site for appropriate treatment.

We have assessed the Operator's proposals in line with the requirements of our guidance and we are satisfied the Operator will implement sufficient measures to ensure there are no polluting emissions to surface water or land.

## **3.0 Refused activities**

### **3.1 Activity Overview**

The Operator proposed to undertake the chemical conditioning of waste soils to facilitate a bioremediation process through the staged application and mixing of waste with cement kiln dust/lime then hydrogen peroxide. Cement kiln dust would be applied to reduce moisture to facilitate bioremediation and increase pH to compensate for the application of hydrogen peroxide. Hydrogen peroxide would be applied to oxidise the waste, degrade hydrocarbon bonds and destroy inhibiting microorganism cultures to facilitate bioremediation.

### **3.2 How we took our decision**

The Environment Agency considers that Dunton Environmental Limited (the "Operator") has not demonstrated that they would apply the Best Available Techniques (BAT) to ensure the proposed waste soil conditioning treatment using cement kiln dust/lime and hydrogen peroxide applied for under Section 5.3 Part A (1) (a) (ii) of the Environmental Permitting (England and Wales) Regulations 2016 ("EPR 2016") will be carried out without endangering human health or harming the environment.

We are required by EPR 2016, to ensure that environmental permits contain all measures necessary to ensure operators apply BAT (Schedule 7, paragraph 5 EPR 2016) and to ensure compliance with the requirement that waste management is carried out without endangering human health or harming the environment (Schedule 9 Part 1 paragraph 3 EPR 2016).

We have given the Operator ample opportunities to demonstrate that they would operate the Section 5.3 Part A (1) (a) (ii) activity within the relevant requirements, including through issuing three Schedule 5 notices requesting further information. However, they have not satisfactorily demonstrated that this is the case.

Activities listed under Section 5.3 above must be operated by applying BAT. This 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.*

Guidance on BAT for facilities such as this site is available in the European Commission's Waste Treatment BAT Reference document (the "Waste Treatment BREF") and the Environment Agency's Sector Guidance Note, EPR S5.06, 'Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste' ("SGN S5.06") and web guidance. SGN S5.06 is based upon the Waste Treatment BREF.

During permit determination, we sent the Operator three separate notices requesting further information (Schedule 5 Notices). These concerned information on the operating techniques proposed for the Section 5.3 Part A (1) (a) (ii) soil conditioning activity in order to demonstrate that the treatment represents BAT. We have reviewed the operating techniques proposed by the Operator for this activity, as set out in the application and subsequent supporting information and compared these with BAT indicators in S5.06 and the Waste Treatment BREF. The reasons for our decision are explained in detail below.

### **3.3 Infrastructure and mixing techniques**

#### **3.3.1 Guidance**

S5.06 guidance outlines BAT for undertaking physico-chemical processes involving wastes. It requires applicants to demonstrate that treatment processes involving physico-chemical reactions are undertaken in enclosed vessels specifically designed and commissioned to be fit for purpose. These vessels should be vented to atmosphere via an appropriate scrubbing and abatement system. It states that as a general rule, no open-topped tanks, vessels or pits should be used for storage or treatment of hazardous or wastes.

S5.06 guidance outlines standards for mixing of hazardous wastes (using the immobilisation process as an example). It is understood that this process is not an immobilisation process however the general principles of mixing hazardous wastes with reagents apply. The guidance describes how controlled and enclosed methods of charging should be employed. It states specifically that manual charging of wastes and mixing with heavy plant such as JCBs or similar should not take place. Reagents and waste should be adequately mixed using impellers or mixing systems integral to the mixing vessel – not by JCBs or similar as they proposed to do. Bulk transfer of dry wastes and reagents should be by suitable handling systems, for example, screw feeder, gravity or pneumatic means.

S5.06 guidance outlines that given the degree of process control that is needed to ensure the correct ratios of waste and reagent enter the process and that sufficient mixing (and residence time) is achieved, these processes should take place within controlled reaction vessels. Automated loading, charging and mixing devices which can be monitored and controlled will be required. It also recommends that physico-chemical treatment such as neutralisation reactions should be carried out in the liquid phase to enhance mixing and process control. Solid-phase reactions of this type should not be carried out as the completion of the reaction cannot be guaranteed.

To demonstrate BAT in line with the standards expected above, when proposing an alternative technique applicants should follow the Environment Agency web guidance on demonstrating BAT. In the event an operator intends to undertake an alternative technique to those identified as BAT there is a requirement to demonstrate that the alternative technique will provide a level of environmental protection that's equivalent to the BAT. Operators are required to explain how their proposed techniques are equivalent to those BAT indicators outlined in our guidance through the operating techniques sections of the application form and supporting documents.

#### **3.3.2 Application**

Cement kiln dust/lime treatment - The Operator provided a description of the process which outlines how cement kiln dust (CKD) or lime is used to condition waste soil prior to applying a bioremediation formula. The process would take place externally with the waste being spread out on the surface of a treatment pad and involve mixing using a modified tractor. CKD or lime will be applied to the waste utilising a modified tractor with hopper applicator on the front of the tractor and an enclosed rotating feature on the back. The Operator stated this equipment can control the speed and the drop height of the delivery system and can make sure

the soil conditioner is delivered evenly over the surface of the waste which gives control over fugitive emission releases. If required as determined by the site manager, more soil conditioner will be applied and the waste will be remixed using the modified tractor and so on until the soil conditioner is evenly spread throughout the waste.

Hydrogen Peroxide treatment - Once the CKD has been applied, the Operator proposed to sieve the waste using an 'Allu' bucket system which involves a modified 360 excavator bucket with sieve feature which will break up the waste. The hydrogen peroxide will then be applied as the waste is laid down, this is done using a handheld lance wand by site operatives who will spray the hydrogen peroxide uniformly onto the waste as it undergoes the sieving process. The Operator stated utilising this method would ensure even application of the hydrogen peroxide and ensure that all of the waste is treated. The waste can then be mixed again if required utilising the tractor. They have highlighted that the reaction of CKD/lime with hydrogen peroxide will not result in emissions to air.

Comparison of application techniques to demonstrate BAT - The Operator provided a comparison of techniques to determine BAT, comparing the use of conveyers in the process and the application of treatments simultaneously. A BAT comparison to treatment/reaction vessels and utilisation of reactor vessels was deemed not applicable by the Operator.

### **3.3.3 Environment Agency - Description of Issues**

Cement Kiln Dust/lime and Hydrogen peroxide treatment - After three schedule 5 requests for information the Operator continued to propose an external process they considered to be BAT, taking place on the floor outside using a modified tractor with rotavator, excavator plant modified with an 'Allu' bucket and handheld lance wands applicators operated by site operatives. These proposed mixing/treatment methods do not meet the requirements of Sector guidance S5.06 which requires that treatment processes and charging of waste are carried out in enclosed and abated vessels/plant, specifically designed to be fit for purpose (BAT point 9 and 10, section 2.1.4) and are not considered to provide an equivalent level of process control or environmental protection to the standards set out in our guidance. This guidance also specifically states charging and mixing of waste using JCBs or similar mobile plant which the Operator has proposed, as not being BAT (BAT point 14, section 2.1.5) and advises against open vessel or pit storage and treatment of hazardous waste.

The proposed mixing methods and associated plant are not considered BAT in terms of process monitoring/control, preventing fugitive emissions (to air, land/water) and ensuring thorough/consistent mixing of waste with reagent – which could mean some waste is untreated and other areas contain elevated concentrations of the reagent/chemical applied. The Operator has identified that the reaction of CKD with hydrogen peroxide will not necessarily result in emissions to air however, they have not provided evidence to support this assertion or demonstrate that appropriate measures will be in place to prevent fugitive emissions to air, having regard to those identified in S5.06.

To demonstrate the alternative processing methods are BAT the Operator compared their process against other application methods including a conveyor system and the simultaneous application and mixing of reagents. They have not taken into account the BAT standards described in our guidance, stating that the enclosure, abatement, charging and mixing methods listed were not applicable. Therefore no justification has been provided as to why the Operator's proposals are equivalent to the BAT indicators in our guidance.

As a result of the issues outlined above, we are not satisfied that the design of the soil conditioning treatment process represents the BAT standards outlined in our S5.06 guidance for enclosure, abatement, charging and mixing to prevent emissions, ensure waste and any hazardous substances are fully treated prior to deposit or disposal to land in order to prevent pollution.

## **3.4 Objectives and treatment benchmarks**

### **3.4.1 Guidance**

S5.06 guidance requires waste treatment processes to have clearly defined objectives, end points and that the reaction chemistry is clearly defined. This is so that the reaction can be appropriately 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 streams.

Applicants therefore need to demonstrate the variability benchmarks in the process and the end point benchmarks for treatment in order to demonstrate how they will control the process to ensure optimum levels of treatment. The reaction should be monitored to ensure that the reaction is under control and proceeding

towards the anticipated result. It is also necessary to show at what point they will put action plans in place to adjust the process in the event that treatment rates drop below optimal levels.

### **3.4.2 Application**

Use of Cement Kiln Dust/lime - The Operator proposed in their application to apply CKD/lime to the waste in order to reduce moisture content to facilitate bioremediation and to increase the pH to compensate for the low pH of the hydrogen peroxide. They stated they would monitor the progress of the CKD/lime addition by determining the level of moisture within the waste using a moisture probe. This will determine the appropriate ratio of CKD/Lime that needs to be applied to control moisture to correct levels and to correctly adjust the pH of the waste. They also state that if more CKD/lime is required as determined by the site manager, more soil conditioner will be applied and the waste will be remixed and so on until the soil conditioner is evenly spread throughout the waste

Use of Hydrogen Peroxide - The Operator described how hydrogen peroxide would be applied to waste to denature the chemical bonds holding the hydrocarbon contamination and to target non-metabolising bacteria which could inhibit the bioremediation process. The Operator stated they would monitor the pH of the waste to determine that oxidation has been successful. Once successful application of the hydrogen peroxide has been undertaken, the Operator would then apply the Bioaccelerator nutrient mix.

### **3.4.3 Environment Agency - Description of Issues**

Use of Cement Kiln Dust/lime - As outlined above the S5.06 guidance requires waste treatment processes to have clearly defined objectives, end points and that reaction chemistry is clearly defined (BAT point 5 section 2.1.4). The Operator is also required to identify and manage any deviations/variation from the target value/benchmark associated with the treatment process. The reaction should be monitored to ensure that the reaction is under control and proceeding towards the anticipated result (BAT point 11 section 2.1.4). It is also necessary to show at what point they will put action plans in place to adjust the process in the event that treatment rates drop below optimal levels.

The Operator has stated they will check levels of moisture and add CKD/lime at a ratio which they state has been historically successful for reducing levels to those considered optimum for the bioremediation process. However, they have not explained how they will accurately monitor and assess whether or not the moisture content and pH has been successfully adjusted throughout the waste, in order to demonstrate that the mixing process has been successful and that the necessary reactions have taken place in order to meet the identified treatment objectives. The Operator states that more CKD/lime will be added if determined by the site manager, however it is not explained how the correct amount will be determined and how the waste will be monitored to ensure target objectives are being achieved.

The Operator has provided no indication of the limitations of the treatment process in relation to benchmarks for total moisture content and pH and there is no indication of how the Operator will identify and manage variations in treatment efficacy in order to ensure that the treatment objectives are achieved, other than further application of CKD/lime. The Operator has also not demonstrated that if wastes arrive at the site with an appropriate moisture content whether or not it is still appropriate to apply CKD/lime and, if not, how such soils will be pH adjusted whilst maintaining appropriate moisture content.

As a result of the issues outlined above we are not satisfied that the proposed treatment activity has the appropriate process controls, benchmarks and limited in place to ensure the treatment will achieve the required targets/objectives for appropriate treatment in order to ensure successful soil conditioning to facilitate effective bioremediation, ensure efficient use of raw materials and ensure hazardous substances are fully treated prior to deposit or disposal to land in order to prevent pollution. We are not satisfied that this aspect of the proposed soil conditioning process represents BAT.

Use of Hydrogen Peroxide - The Operator describes how once the hydrogen peroxide treatment has been determined as successful through a pH sample to check the balancing of pH has worked, they will move the waste to the Bioaccelerator microorganism and nutrient formula treatment stage. However, they have not demonstrated how they will ensure through utilising benchmarks and monitoring that the hydrocarbon bonds and inhibiting bacterial cultures have been successfully treated throughout the waste mass. The application does not outline how long (i.e. in terms of treatment duration) the hydrogen peroxide needs to achieve the desired results. As the end point has not been defined or justified there is no demonstration that the Operator will ensure residual hydrogen peroxide in the waste is not at levels which will inhibit the action of the Bioaccelerator micro flora/fauna.

As outlined by the guidance, each treatment reaction must have a clearly defined end-point and there must be monitoring to ensure that the reaction is under control and proceeding towards the anticipated result. The Operator has provided no indication of limitations of the treatment process in relation to achieving benchmarks (target values) relating to the physical or chemical characteristics of treated waste and there is no indication of how the Operator will manage variations in the treatment (or waste composition) in order to achieve these benchmarks, other than further uncontrolled and unmonitored application of hydrogen peroxide.

As a result of the issues outlined above, we are not satisfied that the Operator has appropriately demonstrated how they will control, measure and adjust the hydrogen peroxide application to ensure the process meets its objectives to facilitate effective bioremediation, ensure efficient use of raw materials and ensure hazardous substances are fully treated prior to deposit or disposal to land in order to prevent pollution. We are therefore not satisfied that this aspect of the proposed soil conditioning process represents BAT.

### **3.5 Impacts of the process and material flow**

#### **3.5.1 Guidance**

S5.06 guidance requires applicants to provide an assessment of the efficiency of the treatment in terms of the removal or partition of these substances within the process. This involves outlining the degree of transfer of materials between the incoming waste and the emissions (to air, solid waste to land and liquid effluent) from the process. This can be done through process mapping to identify the pathways within the process for the specific substance or substances. Efficiency can also be demonstrated through operational efficiency, monitoring may be carried out by instrumentation, direct applicant observation, and chemical analysis. Any monitoring programme will typically involve extensive record keeping, using a combination of computers, chart recorders, and manually completed paper logs. Through their permit application, applicants must show how they will maintain the optimisation of the process and outline action plans which will be implemented in the event the process is not meeting objectives or achieving its optimum treatment level.

The BREF guidance (chapter 4) goes into further detail outlining the need to demonstrate efficiency of waste treatments to improve the usefulness of the outputs, raw material consumption and material flow analysis. A facility must monitor operations carefully to assure that its performance achieves the desired results within appropriate timescales. Optimisation of the waste treatment installations typically helps to achieve lower emissions and lower raw material consumptions.

S5.06 also outlines that simple physical dilution or absorption, without any concurrent chemical change, is not an acceptable treatment process in itself. The presence of substances that are not subject to beneficial treatment, such as toxic metals, must be considered and limits proposed.

#### **3.5.2 Application**

The Operator's application outlined the CKD contains components such as metals which do not contribute to the treatment of the waste but undergo reactions as a result of the waste treatment. They have demonstrated that as a result of the treatment metal oxides in the CKD would be converted to metal hydroxides, water and oxygen as a result of exposure to hydrogen peroxide and concluded that the application of hydrogen peroxide to CKD will not cause any adverse impacts on the environment. They go on to describe how the application of the hydrogen peroxide will ensure that the waste is fully coated and mixed, and the current biological population is adequately disposed of, while denaturing the chemical bonds holding the contamination in place. They state that hydrogen peroxide will not release gas into the atmosphere and does not require abatement.

#### **3.5.3 Environment Agency – Description of Issues**

The Operator has outlined some basic measures and provided some brief justification as to what will happen to the components in the proposed reagents and the wastes as a result of the treatment reactions taking



place. S5.06 guidance outlines the requirement to understand what the degree of transfer is between the incoming waste and the resulting emissions through understanding the usefulness of the outputs, raw material consumption and material flow analysis (BAT Point 2 section 2.1.4). The Operator has not demonstrated in their application that they have accounted for the components of the waste, variability in the reagents and the intermediates produced during the treatment reactions. There is also little demonstration of the flow of these materials and their amounts throughout the process.

The application does identify some of the substances created in the process, but there is no indication as to the quality and fate of these products e.g. metal hydroxides produced or components mobilised by the treatment reactions. There is also no indication of what products will reside in the waste after the soil conditioning treatment and there is no indication whether the products of these reactions will or will not impact on the Bioaccelerator micro flora/fauna during the bioremediation process.

In relation to emissions we acknowledge that the reaction of CKD with hydrogen peroxide will not necessarily result in harmful emissions to air, however it has not been demonstrated the reactions will not result in changes to components in the waste types or intermediates produced in the reactions, which could result in emissions.

In addition our S5.06 guidance states (section 2.1.8) that the presence of substances that are not subject to beneficial treatment, such as toxic metals, must be considered and limits proposed. Dilution or buffering of hazardous substances as a result of mixing or material flow through the process is not treatment. The application has provided little information regarding the treatment or fate of hazardous substances in the CKD (e.g. metals) used in the proposed treatment process. It has not been demonstrated whether these substances will be subject to beneficial treatment by the process or diluted. The application has also not considered potential variability in the composition of CKD, with regards to the presence and fate of hazardous substances.

The Operator's application provides a brief outline of how the site identifies and maps the flow of substances components which would undergo chemical changes during the soil conditioning treatment reactions. We have reviewed the justification provided by the Operator and determined that insufficient information has been provided to demonstrate that the Operator fully understands the composition and flow of material through their process, or the fate of the hazardous substances that may be contained in this material and the associated products and intermediates produced by the process. We are also not satisfied they have demonstrated that the metals contained in the CKD will be subject to beneficial treatment during the proposed soil conditioning process, rather than dilution. We are therefore not satisfied the Operator has demonstrated they will ensure hazardous substances are fully treated prior to deposit or disposal to land in order to prevent pollution.

### **3.6 Appropriate application of reagent materials**

#### **3.6.1 Guidance**

S5.06 guidance outlines that an application should describe the raw materials selection and justify why it is BAT taking into account:

- the chemical composition of the materials;
- the appropriate quantities to be used;
- the fate of the material in the installation;
- the environmental impact potential; and
- alternative raw materials that may have a lower environmental impact based on the substitution principle and justification for the continued use of any substance for which there is a less hazardous alternative (e.g. on the basis of impact on product quality).

There must also be a clear demonstration that raw materials contain only what is required for the treatment activity, that the content is safe in regards to the environmental fate and human health and that the raw material is the most efficient material, and mixture to undertake the treatment.

The appropriate use and application of reagent materials should be demonstrated and reviewed in line with procedures considered BAT for the treatment activities. There should also be a description of how the application of raw material/reagents will be controlled based on the level of contamination and physical properties of material to be treated.

### **3.6.2 Application**

The Operator has selected CKD due to its pH and ability to reduce the moisture content of wastes in replacement of lime. The amount to be applied is calculated based on moisture content. They have also selected hydrogen peroxide based on its ability to oxidise the waste, denature hydrocarbon bonds and destroy inhibiting micro flora/fauna.

### **3.6.3 Environment Agency - Description of Issues**

The Guidance (section 2.4.1) requires that applicants demonstrate why it is BAT to use the raw material proposed. They are required to demonstrate that they are the most effective materials for the activity, and that they are safe in regards to environmental fate and human health. They should also show they use the minimum amount of waste and how the raw material will vary based on the type of contamination.

For both hydrogen peroxide and CKD the Operator has not demonstrated why these raw materials are BAT for the soil conditioning process in relation to their effectiveness and the environmental risk associated with their properties in comparison to reagents which are able to achieve the same treatment results. They have also not outlined the limitations of the raw materials and how they will account for this in the design/operation of the process.

For hydrogen peroxide the Operator has given no indication as to how the concentration will be varied based on the type or level of contamination in the waste received. Sufficient evidence has not been provided to justify why the natural bacterial population of the wastes needs to be destroyed as part of the treatment. It is not clear why the added microorganisms are so susceptible to naturally occurring microorganisms that the application of this raw material is necessary for this reason. It has also not been demonstrated or explained why added microorganisms would provide more effective/efficient levels of treatment than the natural population.

The application was made on the basis that the treated soils/wastes from the process would be classified as non-hazardous. If the CKD used in the treatment process contains heavy metals above the hazardous waste thresholds then the output from the treatment process would be considered hazardous waste, unless it could be demonstrated that the treatment process had beneficially treated (removed) the hazardous components of this waste (excluding any reduction in concentrations resulting from dilution). We have not been provided with any evidence from the Operator to suggest that the CKD is not hazardous.

The Operator has not demonstrated how they will control the metal content of the CKD (e.g. through waste pre-acceptance/acceptance procedures) or treat hazardous substances it may contain through the process to ensure that the output material could be classified as non-hazardous waste. They have not demonstrated why the CKD is an appropriate reagent for the proposed waste treatment process, taking into account its chemical and physical properties.

In conclusion, the Operator has not justified the selection of their raw materials in relation to why they are the most appropriate to ensure the proposed treatment activities or reactions are effective, why they are the most appropriate in relation to their impact through emissions to environment and how they will be appropriately controlled to manage any variation in the wastes treated to ensure wastes are fully treated prior to deposit or disposal to land. Therefore, we are not satisfied that the Operator has provided sufficient justification as to why the raw materials they have selected are BAT.

### **3.7 Conclusions of our assessment of the application**

We have assessed the Operator's proposals which have evolved through discussions with the Operator and the Operator's consultant. We are satisfied the activities included in the permit and the revised supporting operating techniques are in line with the standards expected for these activities as outlined in our guidance. For the activities which have been excluded from the permit, the proposals were not developed sufficiently by the Operator to the standards expected and therefore we were not satisfied that the design or operation of these processes is BAT. Based on the amount of support required by the Operator and compliance issues in relation to other operations undertaken by the Operator, the assessment of technical competence was a finely balanced argument. On balance we do not consider we have grounds to refuse the application outright. We have ensured that only those activities we are satisfied are acceptable are included in the permit and that appropriate controls are in place in the permit to allow effective regulation of this site. We will be closely monitoring the Operator's performance and will take appropriate action in respect of any non-compliance.

## Decision checklist

Aspect considered	Decision
<b>Receipt of application</b>	
Confidential information	<p>A claim for commercial or industrial confidentiality has been made.</p> <p>We have accepted the claim for confidentiality. We have excluded the treatment formula content appendix B. We consider that the inclusion of the relevant information on the public register would prejudice the applicant's interests to an unreasonable degree. The reasons for this are given in the notice of determination for the claim.</p> <p>The decision was taken in accordance with our guidance on confidentiality.</p>
Identifying confidential information	<p>We have identified information provided as part of the application that we consider to be confidential. We have excluded the treatment formula content appendix B from the public register.</p> <p>The decision was taken in accordance with our guidance on confidentiality.</p>
<b>Consultation</b>	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> <li>• Health and Safety Executive</li> <li>• Public Health England</li> <li>• Director of Public Health</li> <li>• Local Authority Environmental Health</li> </ul> <p>The comments and our responses are summarised in the <a href="#">consultation section</a>.</p>
<b>Operator</b>	
Control of the facility	<p>We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.</p>
<b>The facility</b>	
The regulated facility	<p>We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility' and Appendix 2 of RGN 2 'Defining the scope of the installation'.</p> <p>The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p>

Aspect considered	Decision
<b>The site</b>	
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. The plan is included in the permit.
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.
Biodiversity, heritage, landscape and nature conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process.</p> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p>
<b>Environmental risk assessment</b>	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>
<b>Operating techniques</b>	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.</p> <p>The operating techniques that the operator must use are specified in table S1.2 in the environmental permit.</p>
Odour management	<p>We have reviewed the odour management plan in accordance with our guidance on odour management.</p> <p>We consider that the odour management plan is satisfactory.</p>
Noise management	<p>We have reviewed the noise management plan in accordance with our guidance on noise assessment and control.</p> <p>We consider that the noise management plan is satisfactory.</p>

Aspect considered	Decision						
<b>Permit conditions</b>							
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.</p> <p>We are satisfied that the operator can accept these wastes for the following reasons:</p> <ul style="list-style-type: none"> <li>• they are suitable for the proposed activities</li> <li>• the proposed infrastructure is appropriate</li> <li>• the environmental risk assessment is acceptable.</li> </ul> <p>We have excluded the following waste code for the following reasons:</p> <table border="1" data-bbox="553 638 1409 772"> <tr> <td><b>17 03</b></td> <td><b>bituminous mixtures, coal tar and tarred products</b></td> </tr> <tr> <td>17 03 01*</td> <td>bituminous mixtures containing coal tar</td> </tr> <tr> <td>17 03 03*</td> <td>coal tar and tarred products</td> </tr> </table> <p>The wastes are considered hard to treat using traditional bioremediation. The application provides no indication that these waste can be effectively treated using the proposed traditional bioremediation aspect of the application, therefore these wastes have been excluded.</p>	<b>17 03</b>	<b>bituminous mixtures, coal tar and tarred products</b>	17 03 01*	bituminous mixtures containing coal tar	17 03 03*	coal tar and tarred products
<b>17 03</b>	<b>bituminous mixtures, coal tar and tarred products</b>						
17 03 01*	bituminous mixtures containing coal tar						
17 03 03*	coal tar and tarred products						
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions.</p> <p>Pre-operational condition 1 has been inserted to ensure the Environment Agency are aware of the date the site commences operation.</p> <p>Pre-operational condition 2 has been inserted to ensure all concrete infrastructure is installed prior to operation and to a certified standard to prevent emissions to ground.</p> <p>Pre-operational condition 3 has been inserted to ensure the Operator demonstrates the operating parameters of the emission abatement system they proposed to install for the bioremediation process are BAT and will allow effective treatment of emissions.</p> <p>Pre-operational condition 4 has been inserted to ensure the Operator installs the VOC abatement system outlined in their application, prior to undertaking any bioremediation onsite to prevent release of uncontrolled emissions.</p> <p>Pre-operational condition 5 has been inserted to ensure the Operator demonstrates the operating parameters of the emissions abatement system they proposed to install for the asbestos picking operation are BAT and will allow effective treatment of emissions.</p> <p>Pre-operational condition 6 has been inserted to ensure the Operator installs the dust abatement system outlined in their application prior to undertaking any asbestos picking onsite to prevent release of uncontrolled emissions.</p> <p>Pre-operational condition 7 has been inserted to ensure the Operator installs all emissions containment infrastructure before undertaking any dewatering activities.</p> <p>Pre-operational condition 8 has been inserted to ensure the Operator identifies the final position of the air emissions points from the proposed</p>						

Aspect considered	Decision
	<p>abatement systems prior to operation.</p> <p>Pre-operational condition 9 has been inserted to ensure prior to reclassifying any waste as non-waste and sending it offsite, the Operator provides a full justification for classifying waste as non-waste.</p>
Improvement programme	<p>Based on the information on the application, we consider that we need to impose an improvement programme.</p> <p>Improvement condition 1 has been inserted to ensure the Operator identifies any changes to the sites' operating techniques from those outlined in their application as a result of the site commissioning, and provides justification for these changes.</p> <p>Improvement condition 2 has been inserted to ensure the Operator demonstrates through monitoring that the emissions abatement systems chosen are being operated to a standard which allows effective treatment of emissions so exhaust emissions meet the manufacturers' stated benchmarks.</p> <p>Improvement condition 3 has been inserted to ensure the Operator demonstrates the bioremediation treatment is resulting in effective treatment of waste and if significant retreatment of waste or unsuccessful treatment occurs, to propose measures to improve the effectiveness of treatment.</p> <p>Improvement condition 4 has been inserted to ensure the Operator undertakes noise monitoring in line with appropriate standards to demonstrate the measures outlined in their noise management plan are effective in practice. It will also ensure that if the measures are not effective, further measures are implemented to effectively manage noise emissions.</p> <p>Improvement condition 5 has been inserted to ensure the Operator undertakes dust monitoring in line with appropriate standards to demonstrate the measures outlined in their dust management plan are effective in practice. It will also ensure that if the measures are not effective that further measures are implemented to effectively manage dust emissions.</p> <p>Improvement condition 6a has been inserted to ensure the Operator undertakes frequent asbestos emissions monitoring to ensure contaminant measures are effective. Improvement condition 6b then supports improvement condition 6a to allow the Operator to reduce the frequency of their emissions monitoring once it has been demonstrated that emissions are insignificant and containment is effective.</p>
Emission limits	<p>ELVs and equivalent parameters or technical measures based on BAT have been set for the following substances.</p> <p>Ambient air monitoring for particulate matter.</p> <p>Ambient air monitoring for asbestos fibres.</p> <p>Limits are proposed by the operator in line with the limits in our monitoring guidance. Limits are focused on ambient air quality due to the nature of the operation, the location of sensitive receptors and the designation of the area as an Air Quality Management Area (AQMA).</p>

Aspect considered	Decision
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>These monitoring requirements have been imposed in order to:</p> <p>Meet the standards outline in the M17 monitoring guidance. Monitoring is focused on ambient air quality due to the nature of the operation, the location of sensitive receptors and the designation of the area as an AQMA.</p> <p>Monitoring frequencies for asbestos are managed through improvement conditions 6a and 6b to ensure containment is effective and the risk is effectively management with reasonable onus on the Operator.</p> <p>We made these decisions in accordance with M17 monitoring guidance.</p> <p>Based on the information in the application we are satisfied that the Operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.</p>
Reporting	<p>We have specified reporting in the permit.</p> <p>We have inserted a 3 month reporting frequency to ensure the Operator is complying with the ambient air monitoring limits stated in the permit. Due to the risk associated with this facility we require frequent reporting to ensure any significant risk of pollution is dealt with quickly. This is due to the nature of the operation, the location of sensitive receptors and the designation of the area as an AQMA.</p>
<b>Operator competence</b>	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>
Technical competence	<p>Technical competence is required for activities permitted.</p> <p>The operator is a member of an agreed scheme.</p>
Relevant convictions	<p>The Case Management System has been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.</p>
Financial competence	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.</p>

Aspect considered	Decision
<b>Growth Duty</b>	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“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.”</p> <p>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.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>



# Consultation

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

## Responses from organisations listed in the consultation section

<b>Response received from</b>
Health and Safety Executive
<b>Brief summary of issues raised</b>
No comments.
<b>Summary of actions taken or show how this has been covered</b>
No comments were received so no further action was taken.

<b>Response received from</b>
Public Health England (PHE)
<b>Brief summary of issues raised</b>
<ul style="list-style-type: none"> <li>• The incoming waste could be contaminated with a range of contaminants, including asbestos, heavy metals and various hydrocarbons.</li> <li>• Based solely on the information contained in the application provided, PHE has no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice.</li> <li>• We recommend that any environmental permit issued for this site should contain conditions to ensure that the following potential emissions do not impact upon public health: noise, particulates, asbestos fibres and asbestos containing materials (ACM).</li> </ul>
<b>Summary of actions taken or show how this has been covered</b>
<p><u>Variety of waste to be accepted</u></p> <p>The Operator has confirmed that the site will not treat heavy metals. Therefore, for all waste accepted heavy metals will meet the benchmark limits for the final use at the pre-acceptance and acceptance stages.</p> <p>The Operator will accept waste contaminated by hydrocarbons. The Operator has controls in place to ensure the waste they accepted onsite is only contaminated with hydrocarbons which their treatment methods are designed to treat.</p> <p><u>Operation in line with relevant sector guidance</u></p> <p>We have reviewed the Operator's application and management plan and are satisfied they comply with the measures outlined in our sector technical guidance and industry best practice.</p> <p><u>Control of noise, particulates, asbestos fibres and ACM emissions</u></p> <p>The Operator has fully outlined all the measures they intend to implement in order to manage emissions of noise, particulates, asbestos fibres and ACM. We have assessed the Operator's proposals and are satisfied that they meet the standards in the appropriate guidance. Please see the key issues section of this document for further details.</p>

## Representations from the public and other organisations

<b>Response received from</b>
Two public consultation responses
<b>Brief summary of issues raised and summary of actions taken or show how this has been covered</b>
<p>We have summarised comments into the underlined sections below. These comments were made based on the Operator's original application submission. As a result of discussions with the Environment Agency the Operator has revised their proposals and resubmitted their application supporting documents removing some activities. We have assessed these revised document and addition supporting information and we are satisfied the activities permitted meet the requirements of our guidance.</p> <p><u>Sampling frequency and testing methods</u></p> <p>The Operator has provided a representative sampling system using 9 sub samples from every 100m<sup>3</sup> to form 3 composite samples for testing every 12 lorry loads which will be tested with the first lorry load always undergoing verification testing. If testing shows non-compliance, the Operator will increase testing to one sample every 20 tonnes. The site will use a QED analyser to undertake testing with samples which will be validated using certified external parties every 500 tonnes. We have reviewed these sampling and testing methods and are satisfied that the Operator will implement appropriate controls to ensure compliance with waste acceptance requirements.</p> <p><u>Asbestos monitoring</u></p> <p>Asbestos monitoring will be undertaken based on the requirement of Environment Agency Guidance Document 'M17 – Monitoring Particulate Matter in Ambient Air around Waste Facilities'. M17 outlines that manual sampling should be undertaken using air-sampling pumps and membrane filters. Sampling will be undertaken over a one hour reference period at rate of 8 litres per minute to achieve a total sample volume of 480 litres. The samples shall then be analysed for fibre count via phase contrast microscopy (PCM) by a certified third party.</p> <p><u>Asbestos monitoring frequency</u></p> <p>The whole asbestos treatment process will be enclosed with extraction, dampening will take place during transport and waste will contain only asbestos contaminated materials (e.g. bonded asbestos), not free fibres. The extraction and abatement system will be monitored to ensure the exhaust is achieving the required standards. We have inserted an improvement condition into the permit which ensures that the frequency of asbestos monitoring is varied based on compliance with relevant emissions limits. See decision checklist and permit for further details.</p> <p><u>Asbestos decontamination process</u></p> <p>The site is provided with an asbestos decontamination unit.</p> <p><u>Reclassification of asbestos soils, reuse or appropriate disposal</u></p> <p>The Operator has confirmed via the testing methods summarized above that only waste which is free of hazardous level of fibres at the acceptance stage will undergo treatment and be send for restoration. Wastes which are found to contain hazardous levels of asbestos fibres will be rejected from site or quarantined and removed for onward disposal. The site has been designed to isolate treatment and storage activities to prevent inadvertent mixing of waste.</p> <p><u>No planning permissions for tonnages</u></p> <p>The Operator has revised their tonnages to 200,000 tonnes per year. Planning permission is not required to issue a permit. It is the Operator's responsibility to comply with tonnage restrictions from other relevant authorities</p> <p><u>Emissions to air controls, emissions abatement, asbestos fibre emissions controls and lack of point source emissions</u></p> <p>The Operator has committed to the installation of enclosure and abatement equipment to manage emissions to air including VOCs and dust. To support this the Operator has also supplied comprehensive monitoring as well as an odour management plan and dust management which outlines sufficient controls in line with our guidance to manage emissions. To ensure the dust management plan, dust abatement and the odour abatement are effective is practice we have inserted improvement conditions into the permit requiring monitoring and a review of these emissions during operation of the site.</p> <p><u>Odour controls during treatment and acceptance of malodourous wastes</u></p> <p>The Operator has produced an odour management plan and demonstrated they have controls in place to manage waste which have potentially odorous levels of hydrocarbon contamination, including measures for identifying waste at pre-acceptance, arranging reception, reducing storage times prior to being subject to abatement and limited stockpiling.</p>

#### Suitability of waste codes for treatment

The Operator's application outlines that the sites treatment activities are very specific in what they are able to treat and that controls and benchmarks are in place to ensure the waste types accepted can be treated by the site to a state which will achieve a suitable standard for either recovery or disposal. We have reviewed the waste types and we are satisfied that the waste proposed for each permitted treatment activity are acceptable chemically and physically for successful treatment.

#### Pre acceptance measures

In their revised operating techniques, the Operator has fully outlined the criteria and benchmarks they will require for the waste classification at pre-acceptance and outlined how they will ensure the waste is suitable for the process and will allow to achieve the required waste treatment outcomes.

#### Best Available Techniques demonstration and referencing of appropriate standards

The Operator has developed their revised treatment operating techniques in line with appropriate guidance document including Health and Safety Executive Guidance for asbestos management, S5.06 recovery and disposal of hazardous and non-hazardous waste and the waste treatment BREF. They have demonstrated how they intend to implement indicative BAT measures include appropriate emissions management, containment and abatement as well as process control and optimization for those activities permitted. Where we were not satisfied BAT had been demonstrated we refused that part of the application.

#### Acceptance of liquid wastes and liquid spills

The Operator has revised their waste codes and they do not include liquid wastes. Liquid raw materials will be mixed within a building served by sealed drainage. There is no large scale liquid handled on site and the site is served by an impermeable surface with sealed drainage.

#### Control of fugitive emissions, bioaerosol control, emissions during application of lime and cement kiln dust and monitoring of dust in line with relevant monitoring standards

The Operator has provided revised dust management, odour management and noise management plans which give a thorough assessment of the risk the site poses and provide sufficient proposals for management of the emissions from the process which include enclosure, abatement, maximum raw material application distances and appropriate dampening of waste during transport and handling.

The Operator has stated they will monitor dust and PM<sub>10</sub> in line with Environment Agency Guidance note M17 undertaking monitoring using Frisbee Gauges using the benchmarks outlined in the M17 guidance. The Operator will also undertake visual monitoring.

The Operator's management plans include contingency measures to be undertaken in the event monitoring detects the potential of pollution outside the boundary of the site. These are outlined in the dust and odour management plans.

To manage bioaerosols the Operator has designed their bioremediation process to apply microorganisms within an enclosure served by an extraction and abatement system fitted with HEPA filter. We consider the Operator's proposals are in line with BAT.

#### Covering of sludges

The Operator has changed their operating techniques to remove the covering of sludges on the floor. All waste will now be enclosed in appropriate bays

#### Demonstration of adequate impermeable surfacing suitable for the storage and treatment of waste

Both hazardous and non-hazardous waste storage areas will benefit from impermeable concrete surfaces with sealed drainage. The Operator has provided a drainage plan to outline how the site will be appropriately served by a suitable drainage system.

#### Size of site and amount of waste stored

The Operator has restricted their operation to 200,000 tonnes per year and sized the site and turnover times to achieve this. We are satisfied that the Operator can handle the waste tonnages they have proposed.

#### Japanese knotweed

The Operator has removed the treatment of Japanese knotweed and the acceptance of waste containing Japanese knotweed from their application.

#### Control of the treatment process parameters

For the permitted activities the Operator has provided a full description of the raw materials and amounts used in their treatment process, the materials used at each stage of the treatment and how the operator will adapt and control these. Based on the information provided we are satisfied the Operator has developed the permitted processes to include appropriate process infrastructure, monitoring and control of parameters to optimise the biological chemistry involved.

Control of treatment formula application

The Operator has provided information on how they will hydrate the Bioaccelerator formula, which will be undertaken within a building. They have also described how they will apply the formula to ensure thorough mixing and maximum contact with the waste. This will take place in an enclosed area via a covered metal structure modified with spray bars.

Use of excavators and allu buckets for mixing waste

The mixing of soil with hydrogen peroxide and cement kiln dust/lime aspect of the application has been refused.

Treatment of cyanide

The Operator has removed this aspect of the application.

Release of pathogenic bacteria

The Operator has provide a full description of the microorganisms used in the bioremediation formula.

The Operator has committed to mixing the formula within a building and restricted application through an enclosed spray system incorporated into the biopile enclosure. Bioremediation processes are also located to maximise distance from receptors and abatement systems are fitted with HEPA filters.

Addition of oxidising agent and impact of bioremediation micro flora

The mixing of soil with hydrogen peroxide aspect of the application has been refused.

Treatment to remove metals from soils and validation of testing

The Operator has removed this treatment from the application.

The Local Authority Environmental Protection Department were consulted however, a consultation response was not received from this party - (receipt of comments to be received by 27/03/2017).