

## Permitting Decisions- Bespoke Permit

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We have decided to grant the permit for Ellesmere Port Waste Treatment Facility operated by Dunton Technologies Limited.

The permit number is EPR/HP3403BL.

The application is for a new bespoke waste treatment facility on North Road in Ellesmere Port. The permit will authorise the biological treatment of hazardous waste soils by bioremediation; physico-chemical treatment of hazardous waste soils (asbestos picking); including temporary storage of hazardous waste pending treatment; screening of waste prior to treatment; storage of treated wastes; collection and storage of clean and process water (prior to dispatch for treatment off-site); and storage of fuel and raw materials.

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:

- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account;
- highlights key issues in the determination; 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 environmental permit.

# Key issues of the decision

## An overview and amendments to the initial application proposals

The initial application proposal submitted by Dunton Technologies Limited was to operate a hazardous and non-hazardous waste treatment facility for the following activities:

- Physico-chemical treatment of hazardous waste (asbestos picking);
- Physico-chemical treatment of hazardous waste (soil washing);
- Biological treatment of hazardous waste (in-vessel bioremediation);
- Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes
- Storage of hazardous wastes pre-treatment; and
- Physico-chemical treatment of non-hazardous wastes (soil washing of non-hazardous soils stones etc into separate factions).

This application proposal was amended following the Schedule 5 Notice dated 03/11/2020. In response to the Schedule 5 Notice (received 22/01/2021 and amended on the 29/01/2021), Dunton Technologies Limited advised the Environment Agency to withdraw the following activities from the application:

- Physico-chemical treatment of hazardous waste (soil washing);
- Physico-chemical treatment of non-hazardous wastes (soil washing of non-hazardous soils stones etc into separate factions).

In the same response, the operator also advised the Environment Agency that in-vessel/slurry phase bioremediation will not be undertaken at the site and that the treatment of soil by bioremediation will be restricted to treatment in an engineered biopile that is designed with appropriate containment and air extraction systems.

Aside from the modification of proposed activities there were several other clarifications made to the application that were presented in the Schedule 5 Notice response (received 22/01/2021 and amended on the 29/01/2021). This included a revised Site Layout Plan, Application Forms, Waste Acceptance and Rejection Procedures, Storage Procedure and Quantity; Waste Types, Waste Sampling and Analysis Procedures, Asbestos Picking Process, Pre-Treatment Operations, Site Condition Report, Bioremediation Process, Process Control Measures, Emission Control and Abatement Systems, Water Treatment and Surface Water Run-Off Management, Noise Assessment and Management Plan, Treated and Residual Wastes Management, Raw Material Use and a H1 Assessment.

## **Site Condition Report (SCR)**

The SCR was submitted with the 'Report on Groundwater Monitoring and Asbestos Delineation', referenced 410.00304.00077, and dated June 2018. This report contained baseline data on groundwater monitoring and soil sampling of asbestos but no baseline monitoring of hydrocarbons. While the operator indicated that they have an agreement/obligation with the land owner to remediate the site to baseline conditions they also requested in their amended response to the Schedule 5 Notice (received on 21/05/2021) that the Environment Agency should include a pre-operational condition in the permit that requires them to complete a baseline monitoring exercise and submit a report of the findings prior to the commencement of waste acceptance, storage and/or treatment operations at the site. To implement this, we have included pro-operational condition PO3 in the permit.

## **H1 assessment and process/clean water management procedures**

A H1 assessment report was submitted with the application which represents an assessment of the potential impact of the proposed site's emissions to air and sewer. Although the H1 assessment that was submitted suggests that there are insignificant risks associated with the site's emissions both in terms of emissions of Total Volatile Organic Compounds (TVOCs) to air and emissions of the relevant substances to sewer, we asked the operator in the Schedule 5 Notice dated 03/11/2020 to provide a copy of the Trade Effluent Consent that was referenced in the assessment report.

Following an engagement meeting between the operator and the sewer undertaker, the operator advised us that they are unable to establish a connection to the United Utilities foul sewer and as a result they have redesigned the effluent treatment process. The redesign resulted in the discharge of potentially contaminated surface waters to the Manchester Ship Canal. We objected to this proposal to discharge process effluent to Manchester Ship Canal without proper risk assessment. This prompted the operator to revise the proposal by committing to tanker all process waters off-site. The revised position to tanker process waters off-site is contained in the response received from the operator on the 18/06/2021.

The drainage design includes separate foul water and surface water drainage systems. Areas with the potential for contamination of surface water run-off, such as waste reception and treatment areas will be provided with impervious hard-standing and raised kerbing, run off from these areas is routed to the 100m<sup>3</sup> effluent storage tank prior to off-site disposal at a third party facility.

Areas where clean surface water is likely to be generated such as rooftops, car parking and access roads will be routed to a separate 5m<sup>3</sup> tank. Water generated in this area will either be used at the site for dust suppression; discharged to foul sewer; or discharged to the Manchester Ship Canal. The discharges will flow via a silt trap and oil water separator to ensure trace breakthrough contaminants (if any) are eliminated prior to discharge. The clean surface water drainage system will be fitted with an isolation valve to allow complete containment in event of a spillage or other potentially polluting incident.

## **Bioremediation process**

The bioremediation process was amended following the Schedule 5 Notice dated 03/11/2020.

The revised bioremediation process is designed to reduce the concentration of petroleum constituents in excavated soils to acceptable concentrations (i.e. compliant with predetermined criteria, according to end use) using a biopile aerobic biodegradation approach.

The biopiles are constructed on an impermeable base to reduce the potential migration of leachate to the subsurface environment. A perforated piping network installed above the base (and where possible within the mass of material undergoing treatment) is connected to a blower to draw air through the biopile thereby facilitating the aeration of the biopiles. The blower is located within an insulated and secure container. Each aeration leg is joined to an air manifold header at branch points via a gate valve. The valve is used to adjust the airflow through each leg. This allows effective control of the oxygen levels and moisture content in the waste to maintain aerobic conditions.

The biopiles are covered with an impermeable membrane to prevent the release of odour, contaminants and/or contaminated soil to the environment and to protect the soil from wind and precipitation. The biopile will not be turned until the expected treatment levels are achieved.

The exhaust produced by the system drawing air through the biopiles is fed through two carbon absorption units that are fitted in series with a HEPA filter. This abatement system is designed to capture and treat the aerial emissions produced by the biological degradation in the biopiles (predominantly VOC's) and reduce particulate and odour emissions. Once the pollutants are removed the air is then discharged to atmosphere. This design applies a level of inbuilt redundancy, allowing for failure and replacement of one carbon filter without it impacting on the final emission quality.

A monitoring point will be installed in the vent leading from the HEPA filter to allow for MCERTS monitoring to be undertaken on a six monthly basis. Additional process monitoring will be undertaken to monitor the continued efficacy of the carbon canisters. Duplicate carbon canisters will be installed to ensure continued off-gas treatment should the first canister reach the contaminants breakthrough stage. A sampling port will be installed between the two canisters for this purpose and will be monitored monthly.

## **Pre-treatment of waste and oversize materials**

Pre-treatment by screening is restricted to hydrocarbon contaminated soil. There shall be no screening of asbestos contaminated soil prior to hand picking of the asbestos. Oversize materials generated from the pre-screening operations will be stored within a designated storage area marked in the Site Layout Plan drawing number 012102/1001, Rev. A, dated 27/04/21.

While the storage of the oversize materials is covered under this permit, the crushing and subsequent handling of the oversize materials are outside the remit

of this permit. The operator has indicated that the operations of the crusher will be covered under their mobile plant permit EPR/FB3302YF.

### **Treated and residual wastes management**

The objective of the treatment is to render the waste material non-hazardous and appropriate for re-use at nearby restoration or environmental betterment schemes. For the avoidance of doubt the materials will remain within the waste hierarchy and are transferred off-site to third party facilities as waste, albeit a waste suitable for re-use in accordance with the framework of waste exemptions and approvals.

The receiving facilities will have their own waste acceptance criteria derived from site-specific environmental risk assessment to ensure that incoming material does not pose unacceptable risks to soil and controlled waters. Onward waste acceptance criteria are agreed between the receiving site and the operator as part of the pre-acceptance discussions and chemical testing undertaken in accordance with the determinants specified by the receiving site's acceptance criteria.

Where waste does not meet the site's acceptance criteria and must be rejected, input will be stopped and waste will be removed for treatment at an appropriately permitted facility in accordance with all relevant duty of care obligations. For soils which are contaminated with hydrocarbons, wastes can be sent to Provectus/Biogenie facilities or Whitemoss landfill. Any soils that are contaminated with visible asbestos fragments which cannot be treated will be removed to Mick George's Mepal facility or the Provectus facility in Rowley Regis or to a landfill which contains a permitted asbestos landfill cell.

Residual waste streams are anticipated to comprise asbestos fragments removed during the hand-picking operation. These will be removed to S&B Waste Management (Permit Ref: EPR/GB3897FG/V003) and in accordance with all relevant duty of care obligations.

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The operator has indicated that they are committed to undertake sufficient analysis to confirm that waste can be reclassified as non-hazardous in accordance with WM3. The number of samples and determinands are specific to each waste received, noting that the facility only receives wastes that are hazardous due to the presence of asbestos or hydrocarbons. As a baseline approach, the operator has indicated that they obtain verification sampling per 250 tonnes of treated waste.

### **Waste types**

Following the Schedule 5 Notice dated 03/11/2020, the list of wastes proposed for the bioremediation process was amended by the operator by removing sludge waste types.

The list was also amended by the operator by removing 17 01 06\* from the list of wastes to be accepted under the asbestos hand picking operation and 17 03 04\*, 17 03 06\* and sludge related waste codes from the list of wastes to be accepted under the bioremediation process. These wastes were considered inappropriate for the treatment activities.

## **Decision considerations**

### **Confidential information**

A claim for commercial or industrial confidentiality has not been made.

### **Identifying confidential information**

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

### **Consultation**

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority Environmental Health
- Health and Safety Executive
- Food Standards Agency
- Director of Public Health
- Public Health England
- Marine Management Organisation
- Civic Aviation Authority

The comments and our responses are summarised in the [consultation responses](#) section.

### **Operator**

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.

## **The regulated facility**

We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1'.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

## **The site**

The operator has provided plans which we consider to be satisfactory.

These show 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 not satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

We have advised the operator what measures they need to take to improve the site condition report.

## **Nature conservation, landscape, heritage and protected species and habitat designations**

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

## **Environmental risk**

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

## **General operating techniques**

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

The operating techniques are in line with the following guidance: Develop a management system, Control and monitor emissions for your environmental permit, Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste (now replaced by the Non-hazardous and Inert Waste Appropriate Measures for Permitted Facilities) and the Waste Treatment BAT Conclusions.

## **Operating techniques for emissions that screen out as insignificant**

Emissions of Volatile Organic Compounds (VOCs) have been screened out as insignificant, and so we agree that the applicant's proposed techniques are Best Available Techniques (BAT) for the installation.

We consider that the emission limits included in the installation permit reflect the BAT for the sector.

## **National Air Pollution Control Programme**

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.



## **Odour management**

We have reviewed the odour management plan in accordance with our guidance on odour management.

We consider that the odour management plan is satisfactory and we approve this plan.

We have approved the odour management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit'.

While we consider that the applicant's proposals represent the appropriate measures to prevent/ minimise odour from the permitted activities, we also consider that it is appropriate to include a specific Emission Limit Value (ELV) in respect of odour emissions to provide additional environmental protection.

The plan has been incorporated into the operating techniques S1.2.

## **Noise and vibration management**

We have reviewed the noise and vibration management plan in accordance with our guidance on noise assessment and control.

We consider that the noise and vibration management plan is satisfactory and we approve this plan.

We have approved the noise and vibration management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit'.

The plan has been incorporated into the operating techniques S1.2.

## Dust management

We have reviewed the dust and emission management plan in accordance with our guidance on emissions management plans for dust.

We consider that the dust and emission management plan is satisfactory and we approve this plan.

We have approved the dust and emission management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit.

The plan has been incorporated into the operating techniques S1.2.

## Waste types

We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.

We are satisfied that the operator can accept these wastes for the following reasons:

- they are suitable for the proposed activities
- the proposed infrastructure is appropriate; and
- the environmental risk assessment is acceptable.

We have restricted the following wastes for the following reasons:

- 17 05 03\*, 17 06 05\* and 17 09 03\*.

These restrictions were to ensure only wastes that are suitable for treatment are permitted for acceptance.

We made these decisions with respect to waste types in accordance with:

- Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste
- Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste (now replaced by the Non-hazardous and Inert Waste Appropriate Measures for Permitted Facilities).

## Pre-operational conditions

Based on the information in the application, we consider that we need to include pre-operational conditions.

We have included the following pre-operational conditions in the permit:

- **PO1** which requires the operator to submit construction designs and CQA report to demonstrate that the impermeable concrete surfacing for the site and associated infrastructure including drainage systems (above-ground storage tank, sump, connecting pipelines and secondary containment) are installed in line with the standard and measures outlined in the Chemical waste: appropriate measures for permitted facilities and CIRIA report C736.
- **PO2** which requires the operator to submit a report on the baseline conditions of soil and groundwater.

## Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included the following improvement programmes in the permit:

- **IC1** which requires the operator to carry out tests to assess whether the air monitoring location(s) meet the requirements of BS EN 15259 and supporting Method Implementation Document (MID).
- **IC2** which requires the operator to monitor the carbon abatement system to demonstrate that it is treating emissions to meet the BAT-AELs and to validate the emission level that was used in the H1 assessment for emissions to air.
- **IC3** which requires the operator to review the efficacy of the raw materials that are used in the bioremediation process.
- **IC4** which requires the operator to undertake noise monitoring in line with BS4142:2014+A1:2019 to validate the data that is used in the Noise Impact Assessment that was submitted with this application.

## Emission Limits

Emission Limit Values (ELVs) or equivalent parameters or technical measures based on Best Available Techniques (BAT) have been added for the following parameters:

- Dust - 5 mg/m<sup>3</sup>
- Total Volatile Organic Compounds (TVOCs) - 40 mg/Nm<sup>3</sup>

- Odour - 1000 ou<sub>E</sub>/Nm<sup>3</sup>

We have included these limits based on the limits specified in the Waste Treatment BAT Conclusions.

## Monitoring

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.

### Point source emission points marked A1 – A5:

- a) Dust, TVOCs, asbestos fibres and odour

### Surface water monitoring

- Oil/grease

### Process Monitoring

- **For the carbon filters**
  - pH, temperature, gas flow rate, moisture, back pressure, process efficiency.
- **For the biopiles**
  - pH, temperature, oxygen levels, nutrient concentrations, Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAHs), VOCs and Phenols

### Ambient monitoring at the fugitive Emissions Monitoring Stations:

- b) Asbestos fibres, odour and dust

These monitoring requirements have been included in order to ensure that there are no significant emissions of dust, TVOCs, asbestos fibres and odour from the point sources and fugitive emission monitoring points and that there treatment process is monitoring.

We made these decisions in accordance with Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste (now replaced by the Non-hazardous and Inert Waste Appropriate Measures for Permitted Facilities), Waste Treatment BAT conclusions and M17 monitoring of particulate matter in ambient air around waste facilities.

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.

## Reporting

We have specified reporting in the permit.

We made these decisions in accordance with Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste (now replaced by the Non-hazardous and Inert Waste Appropriate Measures for Permitted Facilities), Waste Treatment BAT conclusions and M17 monitoring of particulate matter in ambient air around waste facilities.

## Management System

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

## Technical Competence

Technical competence is required for activities permitted.

The operator is a member of the CIWM/WAMITAB scheme

We are satisfied that the operator is technically competent.

## Financial competence

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.

## Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.

Paragraph 1.3 of the guidance says:

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

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

## Consultation Responses

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

### Responses from organisations listed in the consultation section:

#### Response received from Marine Management Organisation (MMO).

**Brief summary of issues raised:** the MMO want us to be aware that any works within the Marine area require a licence from the Marine Management Organisation. They also highlighted that *'it is down to the applicant themselves to take the necessary steps to ascertain whether their works will fall below the Mean High Water Springs mark'*.

**Summary of actions taken:** no action is required from the Environment Agency. The initial proposal to discharge site's process effluent to sewer and by extension the marine area was withdrawn by the applicant during the application determination. The site's process water is now being captured and transferred offsite for treatment at a third party site.

#### Response received from Public Health England

**Brief summary of issues raised:** PHE response highlights that *'the main emissions of potential concern are fugitive emissions of dust and odour'*. They indicated that *'the environmental permit application contains measures to control the fugitive emissions and residual impacts should not be significant to public health'* and that based on the information contained in the application that they have no significant concerns regarding the risk to the health of the local population from the installation. Their 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:** the Environment Agency is satisfied that the proposed control measures in the application represent BAT and that the permit conditions are robust enough to ensure that there are no significant impact on public health as a result of the permitted site's activities.

## Representations from community and other organisations

Response received from: A Registered Company.

Brief summary of issues raised and action taken: The consultee requested the following:

- a) Information about the nominated site to provide evidence that the disposal of treated materials will be compliant.
  - **Action taken:** The nominated sites for the disposal of any residual waste is covered in the 'Treated and residual wastes management' subsection within the Key Issues section of this decision document. The treatment operations have been amended to 'recovery only'; the operator has no intention to treat for disposal.
- b) Information on how asbestos and volatile hydrocarbon emissions are controlled.
  - **Action taken:** Based on the amended proposals, the asbestos and volatile hydrocarbon emissions are controlled using a combination of two carbon absorption units that are connected in series to a HEPA filter at each of the identified emission points.
- c) Information on the acceptance criteria for soils.
  - **Action taken:** Information on the acceptance criteria for the soils has been provided and is detailed in the document titled 'Operating Techniques, version 4.0, dated June 2021' as listed in Table S1.2 of the permit.
- d) Information on how the addition of lime to the bioremediation process will affect pH and the subsequent treatment processes as well as the pH of the soil during treatment.
  - **Action taken:** Based on the amended proposal, lime will not be used in the bioremediation process. The pH range of the soils accepted to the site will be restricted to 6 to 8.
- e) Queried the use of bio-augmentation because the introduced microflora are unlikely to be adapted to the range of soil conditions encountered in the UK.

- **Action taken:** Bio-augmentation is an acceptable method of bioremediation and we cannot restrict the operator from using this approach.
- f) Information on how the operator will control emissions from the exothermic reaction of adding lime to soil and how they will prevent the microflora being sterilised, how they will control intermediate compounds that will be formed, how the risks change from the contaminants in the original waste description and how they will effectively mitigate this and monitor the efficiency of mitigation.
  - **Action taken:** Lime is no longer in use in the bioremediation process. The bioremediation process is now redesigned to a fully aerated system with adequate mechanism for oxygen supply. The operator is required in table S3.3 of the permit to monitor the efficiency of the treatment process.
- g) Concern that treated soils will pose unacceptable risks to controlled waters through reuse unless far more extensive soil and soil leachate testing is undertaken than proposed by the operator.
  - **Action taken:** It is the responsibility of the producing and receiving waste carrier under duty of care to ensure the correct classification of waste and correct sampling regime has been followed. The operator is required under Condition 2.3.6 of the permit to ensure that where waste produced by the activities is sent to a landfill site, that it is appropriately sampled to meet the waste acceptance criteria for that landfill.
- h) Question on whether the proposed bioremediation approach is BAT.
  - **Action taken:** The bioremediation process is now redesigned to a fully aerated system with adequate mechanisms for containment and control of emissions. The biopiles are covered with an impermeable membrane to prevent the release of odour, contaminants and/or contaminated soil to the environment and to protect the soil from wind and precipitation. The biopile will not be turned until the expected treatment levels are achieved. We consider this to represent BAT.
- i) Queried the proposed approach to send all rejected soils to the biopiles.
  - **Action taken:** The operator is committed to remove from the site waste materials that fail the acceptance criteria within 5 days of receipt. Such wastes will be held under cover while sampling and testing is being undertaken. The Environment Agency will be informed if any non-compliant wastes are received on site via an initial telephone call to the Area Officer, and then backed up by the relevant paperwork in accordance with permit requirements. Additionally, the producer of the waste will be notified, in compliance with Environment Agency Guidance Note SGN5.06 – Treatment of hazardous and non-hazardous wastes.



- j) Queried the storage capacity and the dry density conversion rate of 1.6t/m<sup>3</sup> as used in the application. Consultee suggested 1.4 t/m<sup>3</sup> should be used instead.
- **Action taken:** We have considered that the proposed conversion rate of 1.6t/m<sup>3</sup> is within the acceptable range for the soil types to be accepted at the site.
- k) Queried the proposed use of in-vessel/slurry phase bio-treatment as the predominant method used for treating contaminated soils.
- **Action taken:** Based on the amended proposals, in-vessel/slurry phase bio-treatment will not be undertaken at this site and is not an authorised treatment method in this permit.
- l) Queried whether the proposed use of soil turning/riddling or mechanical mixing for the bio-treatment of contaminated soils is BAT.
- **Action taken:** Soil turning/riddling or mechanical mixing during the bio-treatment operations was removed from the application proposals. The biopile will not be turned until the expected treatment levels are achieved.
- m) Information on contaminant limits on asbestos soils or what emissions should be anticipated.
- **Action taken:** Soil contaminated with asbestos will not be accepted if the level of free fibre is greater than 0.1% w/w. The acceptance criteria of the incoming soils are detailed in the document titled 'Operating Techniques, version 4.0, dated June 2021' as listed in Table S1.2 of the permit.
- n) Information on how 1080t of asbestos contaminated soils can be stored compliantly.
- **Action taken:** The site layout plan has been amended. The operator has demonstrated that they have the capacity to store at any one time, 2976 tonnes of asbestos prior to treatment and 2880 tonnes of treated asbestos soils after treatment. The revised site layout plan is incorporated in Table S1.2 of the permit.
- o) Queried the proposed timescale of 3 weeks for the bioremediation process.
- **Action taken:** The treatment for the bioremediation operation has been amended to 8 – 16 weeks.
- p) Clearer information on the bioremediation process.
- **Action taken:** The bioremediation process is now redesigned to a fully aerated system with adequate mechanism for containment and control of emissions. The biopiles are covered with an impermeable membrane to prevent the release of odour, contaminants and/or contaminated soil to the environment and to protect the soil from wind

and precipitation. The biopile will not be turned until the expected treatment levels are achieved. We have considered that the revised bioremediation process represents BAT.

- q) Addition of condition in the permit for bioaerosol monitoring because the propose bioremediation approach seems to promote anaerobic rather than aerobic condition.
- **Action taken:** The bioremediation process is now redesigned. The biopiles are fully aerated and we have considered that there is no longer need for bioaerosol monitoring and/or control.
- r) Highlighted that the loading of hydrocarbon contaminated soils through a screener into the soil washing plant will emit volatile organics into the air and potential odours. The consultee also requests the deployment of an effective air control system to mitigate this.
- **Action taken:** The soil washing activity has now been withdrawn and is not an authorised activity in the permit.
- s) Queried the Operator's objection on the use of vacuum extraction systems at the base of biopiles and the proposed air injection through the layer.
- **Action taken:** The bioremediation process is now redesigned to include an air extraction system that is embedded within the waste mass. A perforated piping network installed above the base (and where possible within the mass of material undergoing treatment) is connected to a blower to draw air through the biopile thereby facilitating the aeration of the biopiles.
- t) Queried whether the COTC qualified person is also a qualified chemist at HNC level or higher. Otherwise, details on how this requirement will be fulfilled.
- **Action taken:** The person that will supervise the site waste acceptance and sampling procedures will have at least a degree in environmental science and experience in waste management. We have accepted based on the site risk profile that this is an alternative/equivalent measure to a minimum of a HNC in chemistry.
- u) Queried the contaminant elimination rates of 90% to 98% and whether this is likely to be achieve by dilution of the hazardous with non-hazardous waste.
- **Action taken:** Treatment of non-hazardous waste was withdrawn from the application proposals and as such the potential for treatment by dilution is minimal. We have included an Improvement Condition in the permit which requires the operator to review the efficacy of the raw materials and demonstrate that the appropriate amounts of raw materials are added to each treatment operation and that the treatment process is working as designed.
- v) Information on the safety data sheets for the 'bioaccelerant'.

- **Action taken:** The operator provided the safety datasheet of the bioaccelerant and other raw materials which we considered acceptable.
- w) Information on the storage capacity of the water storage tanks as there appears to be conflicting information on this in the application.
- **Action taken:** The revised site's water management procedures are detail in the 'H1 assessment and process/clean water management procedures' subsection within the Key Issues section of this decision document. The water storage capacity of the site is 100m<sup>3</sup> for process water and 5m<sup>3</sup> for clean water.
- x) There are no specified limits within this document for dust or airborne asbestos. The type, frequency and detection limit need to be specified to meet EA guidance Technical Guidance Note M17.
- **Action taken:** In response to the Schedule 5 Notice dated 03/11/2020, the operator has provided information on dust and asbestos monitoring amongst others. We are satisfied that the proposed monitoring are in line with BAT and the M17 guidance. These limits have been incorporated into the permit.
- y) Queried the experience of the technically competent manager given his age.
- **Action taken:** We do not accept that age should be used as a criteria to assess the experience of a technically competent manager. The technically competent manager has an appropriate award for hazardous waste treatment.
- z) Table 1 contains a solitary benzene target for the emissions point from the carbon filter. There are no targets for Polycyclic Aromatic Hydrocarbons, Toluene, Ethyl Benzene, Xylenes, Phenol, Chlorinated Phenols, Chlorinated Solvents, Trimethylbenzenes, Total Petroleum Hydrocarbons or other common compounds that would be typical in contaminated soils found regionally.
- **Action taken:** The parameters that require monitoring in the Waste Treatment BAT Conclusion for point emissions are dust, TVOCs and odour. The monitoring of these parameters are specified in the amended application proposals and in the permit.
- aa) Queried the exclusion of tank bottom sludges, waste from gas treatment, sludges from effluent treatment and filter cakes from the list of potentially odorous wastes in the odour management plan.
- **Action taken:** The list of wastes has been extensively amended given that the operator is no longer undertaking soil washing and non-hazardous waste treatment. They have also opted to remove all sludgy waste from the application proposals.

**bb)** Queried the proposal by the operator to conduct sniff tests (for odour) by a member of the site team.

- **Action taken:** The assessor will be a member of site personnel who is trained in this procedure and who is based mainly inside the site office. Being located within the office building, the operative will be less exposed to site odours and therefore less likely to be desensitised. To ensure that the assessor is not suffering from odour fatigue, they will not enter the waste area/building on the day of the assessment until they have completed the monitoring exercise. The assessor must also not be suffering from a cold, sinusitis, or a sore throat as these may affect their sense of smell. In addition, the assessor should be a non-smoker, and will avoid food and drink (except water) for at least half an hour before undertaking the assessment. These measures are to ensure that the results of the assessment are robust and reliable.

**cc)** Queried the quantity and addition rate of lime to the bioremediation process.

- **Action taken:** Based on the amended proposal, lime will no longer be used in the bioremediation process.

**dd)** Concern that many of the wastes are not soils and are not compliant for use within EA guidance regarding restoration soils or other applications.

- **Action taken:** The list of wastes has been extensively amended given that the operator is no longer undertaking soil washing and non-hazardous waste treatment. They have also opted to remove all sludgy waste from the application proposals. We are satisfied that the amended list of waste for the bioremediation and asbestos treatment are appropriate.

**ee)** Concern about soil turning during bioremediation process.

- **Action taken:** Based on the amended proposal, soil turning will no longer be undertaken as part of the bioremediation process. The biopiles will not be turned until the expected treatment levels are achieved.

**ff)** Concern about sampling of soil and frequency.

- **Action taken:** The amended proposal is to obtain 1 sample per 250 tonnes of incoming and treated waste. Wastes are representatively sampled, i.e. one sample (generated from three sub-samples) for every 250 tonnes of waste received. The obtained samples are sent to an independent UKAS accredited laboratory for analysis as part of the waste acceptance and verification sampling of the treated materials. The operator has indicated that they will only accept single source wastes that are contaminated with asbestos and/or hydrocarbons and will not mix waste from different sources during sampling.

**gg)** Queried the use of QED system for assessing hydrocarbon content and in particular aromatic hydrocarbons. On-site test kits cannot provide any substitution to MCERTs accredited laboratory analysis.

- **Action taken:** The operation of the QED analyser is backed up by MCERTS accredited laboratory and is used for a quick check of hydrocarbon contamination during waste acceptance. To complement this, the operator has proposed to obtain samples and send them to an independent UKAS accredited laboratory for analysis and verification testing.

**hh)** Table 10 is incorrect and does not assess the cumulative risks from ecotoxic metals. This demonstrates a poor understanding of the requirements of EA guidance document WM3.

- **Action taken:** This table has been removed from the application proposals as treatment of non-hazardous waste will no longer be undertaken at this site.

**ii)** The second WAMITAB award holder for the site does not have a 4TMHCL COTC and so cannot provide technically competent management of the facility.

- **Action taken:** The second WAMITAB award holder in question has been removed from the list of technically competent managers for the site. The site's operations will be overseen by a competent manager who holds WAMITAB Level 4 award in Managing Treatment of Hazardous Waste.

**jj)** Will the operator keep records of waste rejections?

- **Action taken:** Yes. All documents relating to rejected loads will be scanned in and saved electronically on the operator's computer system in a folder under the client and job reference. Hard copies are also kept in archive boxes for storage.

### **Response received from: FCC Recycling UK Ltd**

Brief summary of issues raised and action taken:

a) The wide range of hazardous and non-hazardous wastes proposed for treatment does not readily match the treatment techniques.

- **Action taken:** The list of wastes has been extensively amended given that the operator is no longer undertaking soil washing and non-hazardous waste treatment. They have also opted to remove all sludgy waste from the application proposals. We are satisfied that the amended list of waste for the bioremediation and asbestos treatment are appropriate.

b) What is the purpose of accepting the non-hazardous wastes as listed?

- **Action taken:** Based on the amended application proposal, treatment of non-hazardous waste will no longer be undertaken at this site.
- c) Soils are screened in the open air, how are asbestos and volatile hydrocarbon emissions controlled? Failure to control emissions and monitor through a point source means the approach is not in alignment of the key principles of BAT.
- **Action taken:** Based on the amended application proposal, asbestos contaminated waste will not be screened at the site. Screening of wastes may be undertaken prior to bioremediation activities taking place. The screener will be fitted with spray bars and wastes will be dampened prior to screening activities taking place. These control measures are considered appropriate for the screening operation.
- d) There is no mention of how the operator will control emissions from the exothermic reaction of adding lime to soil and how they will prevent the microflora being sterilised, how they will control intermediate compounds that will be formed, how the risks change from the contaminants in the original waste description and how they will effectively mitigate this and monitor the efficiency of mitigation.
- **Action taken:** Based on the amended proposal, lime will no longer be used in the bioremediation process. The bioremediation process is now redesigned to include an air extraction system that is embedded within the waste mass. A perforated piping network installed above the base (and where possible within the mass of material undergoing treatment) is connected to a blower to draw air through the biopile thereby facilitating the aeration of the biopiles. The exhaust from this system will be fed through two carbon absorption units fitted in series followed by a HEPA filter. The abatement system is designed to capture and treat the degradation products (predominantly VOC's) and reduce particulate and odour emissions. The potential for intermediate compounds formation is low to non-existent in an engineered, well aerated biopile. We consider that the bioremediation process as redesigned represents BAT and that there are adequate control measures for emissions control.
- e) Soil turning/riddling or mechanical mixing is not BAT
- **Action taken:** Soil turning/riddling or mechanical mixing during the bio-treatment operations was removed from the application proposals. Based on the revised proposals, the biopiles will not be turned until the expected treatment levels are achieved.
- f) There are no specified limits within this document for dust or airborne asbestos. The type, frequency and detection limit need to be specified to meet EA guidance Technical Guidance Note M17.
- **Action taken:** In response to the Schedule 5 Notice dated 03/11/2020, the operator has provided information on dust and asbestos monitoring

amongst others. We are satisfied that the proposed monitoring are in line with BAT and the M17 guidance. These limits have been incorporated into the permit.

g) Table 1 contains a solitary benzene target for the emissions point from the carbon filter. There are no targets for Polycyclic Aromatic Hydrocarbons, Toluene, Ethyl Benzene, Xylenes, Phenol, Chlorinated Phenols, Chlorinated Solvents, Trimethylbenzenes, Total Petroleum Hydrocarbons or other common compounds that would be typical in contaminated soils found regionally.

- **Action taken:** The parameters that require monitoring in the Waste Treatment BAT Conclusion for point emissions are dust, TVOCs, Odour. The monitoring of these parameters are specified in the amended application proposals and in the permit.

h) Queried the exclusion of tank bottom sludges, waste from gas treatment, sludges from effluent treatment and filter cakes from the list of potentially odorous waste in the odour management plan. The consultee also highlights the need for process monitoring.

- **Action taken:** The list of wastes has been extensively amended given that the operator is no longer undertaking soil washing and non-hazardous waste treatment. They have also opted to remove all sludge wastes from the application proposals. We have included in the permit process monitoring of pH, temperature, gas flow rate, moisture, back pressure, process efficiency (at the carbon filters) and monitoring of pH, temperature, oxygen levels, nutrient concentrations, Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAHs), VOCs and Phenols (at the biopiles).

i) It is also noted that the Operator is unaware that the EBPRI 11507B guidance document has been withdrawn and updated with new guidance document dispose of waste to landfill 30 January 2020 (<https://www.gov.uk/guidance/dispose-of-waste-to-landfill>).

- **Action taken:** The nominated sites for the disposal of any residual waste is covered in the 'Treated and residual wastes management' subsection within the Key Issues section of this decision document. The treatment operations have been amended to 'recovery only'; the operator has no intention to treat for disposal.

It is the responsibility of the producing and receiving waste carrier under duty of care to ensure the correct classification of waste and correct sampling regime has been followed. The operator is required under Condition 2.3.6 of the permit to ensure that where waste produced by the activities that is sent to a landfill site is appropriately sampled to meet the waste acceptance criteria for that landfill.

j) Page 18 of the Operating Techniques appears to state that only ACM testing will be undertaken. This is insufficient and a wider range of soil

analysis will be required to provide the operator of the ultimate disposal site with a waste description.

- **Action taken:** All waste received and treated at the site will be sampled and tested as part of the waste acceptance and verification testing procedures.
- k) Table 9 does not include pH which is important when assessing the effect of lime on the waste classification of soils.
- **Action taken:** Lime is no longer in use in the bioremediation process however, the pH of the soil will be tested during acceptance and during the treatment operations.
- l) The QED system manufactured by QROS uses ultra violet fluorescence for assessing hydrocarbon content and in particular aromatic hydrocarbons. It has been shown on sites with hydrocarbons such as coal tars and associated aromatic hydrocarbons to be of poor precision with laboratory analysis due to the interference of the wide range of hydrocarbons that fluoresce at similar wave numbers. On site test kits cannot provide any substitution to MCERTS accredited laboratory analysis.
- **Action taken:** The operation of the QED analyser is backed up by MCERTS accredited laboratory and is used for a quick check of hydrocarbon contamination during waste acceptance. To complement this, the operator has proposed to obtain samples and send them to an independent UKAS accredited laboratory for analysis and verification testing.
- m) Table 10 of the Operating Techniques document is incorrect and does not assess the cumulative risks from ecotoxic metals. This demonstrates a poor understanding of the requirements of EA guidance document WM3.
- **Action taken:** This table has been removed from the application proposals as treatment of non-hazardous waste will no longer be undertaken at this site.
- n) Table 13, 14, 15, 16 and 17 includes a significant number of contaminants at concentrations which would render the material hazardous waste. Sites that receive waste from the operator will therefore need to be compliantly permitted for hazardous waste disposal and pay any landfill tax liability at the prevailing rate. They have expressed a commitment to dispose of this hazardous soil into restoration projects, yet do not seem to understand the requirements of EA document restore your landfill Jan 2020 (<https://www.gov.uk/guidance/landfill-operators-environmental-permits/restore-your-landfill-site>).
- **Action taken:** These tables have now been removed from the revised version of the Operating Techniques document. It is the responsibility of the producing and receiving waste carrier under duty of care to ensure the correct classification of waste and correct sampling regime has been followed. The operator is required under Condition 2.3.6 of



the permit to ensure that where waste produced by the activities is sent to a landfill site it is appropriately sampled to meet the waste acceptance criteria for that landfill.