

APPEAL REFERENCES APP/EPR/636, 651 AND 652

**APPEALS PURSUANT TO REGULATION 31 OF THE ENVIRONMENTAL PERMITTING
(ENGLAND AND WALES) REGULATIONS 2016 REGARDING SOIL TREATMENT
FACILITIES AT DANESHILL LANDFILL SITE AND MAW GREEN LANDFILL SITE**

**ENVIRONMENTAL PERMIT REFERENCE EPR/NP3538MF/V009 AND V010
(DANESHILL)**

ENVIRONMENTAL PERMIT REFERENCE EPR/BS7722ID/V010 (MAW GREEN)

PROOF OF EVIDENCE OF LESLIE HEASMAN

Report reference: FCC/DH/LH/6278/01/POE

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1. Summary Proof of Evidence

1.1 This Appeal comprises a conjoined Appeal regarding three Environmental Permits which is being considered at a single Inquiry. The three permit decisions which are being appealed are:

- An appeal against the decision of the Environment Agency (EA) to exclude the processing of asbestos contaminated soils from the varied Environmental Permit reference EPR/NP3538MF/V009 dated 9 December 2022 for Daneshill (the DH V009 EP). This is Appeal reference APP/EPR/636.
- An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/NP3538MF/V010 dated 29 September 2023 for Daneshill (the DH V010 EP). This is Appeal reference APP/EPR/651.
- An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/BS7722ID/V010 dated 5 October 2023 for Maw Green (the MG V010 EP). This is Appeal reference APP/EPR/652.

1.2 The activities which are the subject of this appeal comprise, in summary, the treatment of soil contaminated with bound asbestos materials in order to provide uncontaminated soil that is suitable for use as a restoration material for the restoration of the adjacent landfill sites. Soils contaminated with any amount of asbestos containing materials (ACMs) including bound asbestos are automatically classified as a hazardous waste and can be disposed of only at a hazardous waste landfill site. Where the ACMs are removed, and there are no other contaminants which would result in the soil being classified as hazardous, or otherwise unacceptable, the soils can be recovered for use.

1.3 The removal of ACMs from contaminated soils on a picking line is carried out manually by trained operatives. The proposed activities include mechanical screening of the contaminated soils prior to handpicking. The purpose of the mechanical screening step is to separate the incoming material into different size fractions in order to make the subsequent handpicking process to remove the ACMs more efficient as the ACMs are typically present predominantly in the mid-size

screened fraction. This reduces processing time and consequently energy use for operating plant and equipment.

1.4 It is proposed that the storage and treatment activities take place outside on treatment pads close to the landfill sites. The details of the proposed activities and the emission control management measures that it is proposed will be implemented in order to prevent or minimise emissions of asbestos fibres to air are set out in Table 1 of this Proof of Evidence (PoE). These measures include in particular:

- Strict controls on the concentrations of free fibres in the incoming waste soils awaiting treatment (<0.1% chrysotile asbestos and <0.01% other types of asbestos fibres by weight in the incoming soil);
- Fixed and mobile spray systems with wetting agent added to the water used in all sprays to dampen the soils throughout the different stages of the treatment process;
- Covering of stockpiles with tarpaulins;
- The location of all activities on impermeable surfaces with enclosed drainage systems; and
- Monitoring and testing of asbestos fibre concentrations in air close to the operations to confirm the effectiveness of the measures throughout the operations together with boundary reassurance monitoring.

1.5 The Appellant is able to determine with confidence that the proposed measures will be effective in preventing or minimising the emission of asbestos fibres and that the concentrations of asbestos fibres in air will meet the criteria set by the EA as protective of human health because they have developed an extensive database of monitoring data obtained where similar activities are taking place and similar controls are being implemented. The data have been reviewed and assessed by Simon Cole in his PoE. Simon Cole concludes that the predicted level of risk for both sites is so low as to be of negligible consequence.

- 1.6** It is demonstrated on this basis that the proposed activities comply with Best Available Techniques (BAT).
- 1.7** In summary, the EA consider that in order to comply with BAT and the EA guidance the proposed activities must adhere to the following:
- The proposed mechanical screener activity should only be carried out using a ‘fully enclosed’ screener and conveyors with air extracted and filtered from the enclosure;
 - The fully enclosed mechanical screener should be located in a building;
 - All stockpiles of soils contaminated with asbestos should be subject to particulate and fibre management controls such as dampening or covering and the stockpiles should be located in a building; and
 - The closed picking station cabin should itself be located in a building.
- 1.8** The EA base their decision that the mechanical screener should be fully enclosed on the assumption that mechanical screening and other mechanical processes such as waste transfer between stockpiles and conveyors will result in the generation of additional free asbestos fibres and therefore increased risks to health. This assumption is not supported by the monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE.
- 1.9** The EA base their decisions also on the assumption that the proposed emission control measures proposed do not prevent or minimise the release of asbestos fibres from the soil and therefore result in increased risks to health. The monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE demonstrates that this is not the case.
- 1.10** In addition, the results of extensive market enquiries made on behalf of the Appellants have resulted in a failure to identify any mechanical screener available on the market which is fitted with covers and/or is wholly or partly enclosed. Accordingly a ‘fully enclosed’ mechanical screener with all dust emissions from the screening operations

directed to an active abatement system is not an 'available' technique and therefore cannot comprise BAT in any event.

- 1.11** There are no emission limits for asbestos fibres in air set in the Waste Treatment BAT Conclusions document (BAT-AELs) or in any guidance issued by the EA. The EA has identified in their decisions on the issue of the regulator-initiated variations for the Daneshill and Maw Green Environmental Permits that they consider that the appropriate emission limits for asbestos fibres in air are 0.1 fibres/ml from the mechanical screener and 0.01 fibres/ml at the site boundary. The Appellant agrees with and accepts these emission limits set by the EA and it is confirmed in the PoE of Simon Cole that the extensive monitoring database reviewed confirms that these limits can be met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.
- 1.12** The monitoring proposals for emissions from the asbestos treatment processes at the STFs are set out in the applications documents, namely the Emissions Management Plan for Daneshill and the Dust and Emissions Management Plan for Maw Green.
- 1.13** The EA had sought in the V010 EPs for Daneshill and Maw Green to restrict the storage of soil impacted with asbestos awaiting treatment to no more than 150 tonnes at any one time. It is considered that there is no justified risk based reason to restrict the storage capacity to 150 tonnes. The proposed storage limits are set out in Tables 3 and 4 of this PoE.
- 1.14** The EA had sought in the V010 EPs for Daneshill and Maw Green to restrict the throughput of the treatment of soils impacted with ACMs to no more than 100 tonnes per day. This limit is unjustified by the EA and unreasonably restrictive. It equates to approximately 5 to 6 lorry loads of soil per day which is very low for the rate at which waste soils are generated during a typical development activity. The proposed treatment capacities are set out in Tables 3 and 4 of this PoE.
- 1.15** The relevant legislative framework for environmental permitting is provided by European Union Directive 2010/75/EU on industrial emissions (the Industrial

Emissions Directive or IED) and the Environmental Permitting Regulations 2016 (EPR). Article 11 of the IED requires that all appropriate preventive measures are taken against pollution, best available techniques (BAT) are applied and that no significant pollution is caused. If the installation complies with the IED then Article 5 requires the competent authority to grant a permit.

- 1.16** Annex III of the IED sets out criteria for use by Member States for determining BAT and specifically includes the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it. The concept of what constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of emissions on the environment and the risks to it.
- 1.17** It is demonstrated in the PoE of Simon Cole, based on the extensive monitoring database comprising records of the emissions of asbestos fibres to air during activities to remove ACMs, including with the application of the proposed emissions controls during the proposed activities (including stockpiling, mechanical screening and handpicking) will prevent or minimise the emissions of asbestos fibres and therefore are compliant with BAT, the IED and the EA guidance. The assessment presented by Simon Cole demonstrates also that there is confidence that the proposed activities will be operated in compliance with the emissions limits set by the EA for asbestos fibres in air in the DH V010 and MG V010 EPs.
- 1.18** The monitoring data presented and reviewed by Simon Cole in his PoE demonstrates that the application of the additional control measures required by the EA including in particular enclosure and air extraction and filtration to the screener (should it be possible in practice to apply this) and the location of all activities inside a building would achieve no overall material reduction in the emissions of asbestos fibres and therefore provide no overall reduction in risks. However there would be overall environmental detriment as a result of the use of these additional measures and infrastructure. Accordingly the use of the additional techniques would be contrary to Annex III of the IED which states that the determination of what treatment technique constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.

1.19 In addition to compliance with BAT, the proposed activities to treat and recover for use the contaminated soils classified as hazardous waste and to avoid the need for their disposal to landfill is in accordance with and fully supported by the obligations to:

- comply with the waste hierarchy,
- comply with the duty to separate hazardous wastes;
- comply with the Control of Asbestos Regulations 2012;
- comply with the EA guidance document for the operation of Installations as set out in Chemical waste: appropriate measures;
- comply with the Government 25 Year Environment Plan and the 2023 Environmental Improvement Plan. Goal 6 of the Environmental Improvement Plan 2023 includes the objective of reducing the amount of soil sent to landfill; and
- comply with the DEFRA Soil Strategy.

1.20 The conditions and/or wording that are appealed against in these Appeals together with the amended wording requested are set out in Table 3 of this PoE for Daneshill and in Table 4 of this PoE for Maw Green.

2. Introduction, qualifications and experience

Introduction

- 2.1 My name is Leslie Anne Heasman and I am the Managing Director and a Principal Environmental Consultant of M J Carter Associates Limited (MJCA). I am instructed by FCC Recycling (UK) Limited (FCC) to provide evidence with respect to the technical aspects of the Best Available Techniques relating to the proposed waste activity for the removal of bound asbestos from soils and the associated Appeals regarding the Environmental Permits for soil treatment facilities at Daneshill Landfill Site, Daneshill Road, Lound, Nottinghamshire DN22 8RB and Maw Green Landfill Site, Maw Green Road, Coppenhall, Crewe, Cheshire CW1 5NG. My initial instruction was received in April 2023.
- 2.2 Daneshill Landfill Site is operated by FCC Recycling (UK) Limited and Maw Green Landfill Site is operated by 3C Waste Limited. I understand that both companies form part of the same group of companies and throughout this report I refer to the Appellant for both sites as 'FCC'.
- 2.3 This Appeal comprises a conjoined Appeal regarding three Environmental Permits which is being considered at a single Inquiry. The three permit decisions which are being appealed are:
- An appeal against the decision of the EA to exclude the processing of asbestos contaminated soils from the varied Environmental Permit reference EPR/NP3538MF/V009 for Daneshill (the DH V009 EP). This is Appeal reference APP/EPR/636.
 - An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/NP3538MF/V010 dated 29 September 2023 for Daneshill (the DH V010 EP). This is Appeal reference APP/EPR/651.
 - An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/BS7722ID/V010 dated 5 October 2023 for Maw Green (the MG V010 EP). This is Appeal reference APP/EPR/652.

- 2.4** In this Proof of Evidence, I have sought to minimise where possible the duplication of matters set out in the previously submitted appeal documentation, in particular those in the Grounds of Appeal (GoA) and the Statement of Case (the Conjoined Rule 6 Statement (cSoC), (CD4/4/A), hence I provide cross references to the appeal documentation as appropriate.
- 2.5** The procedural background to the submission of the application to vary the Daneshill EP and to include additional activities including an activity comprising the treatment of asbestos contaminated soils, together with the events leading to the regulator-initiated variations to issue the DH V010 EP and the MG V010 EP is set out in the cSoC. Further detail is provided in Section 3 of this report.
- 2.6** I visited the FCC sites at Daneshill, Maw Green and Edwin Richards Quarry on 30 January 2024. However, due to the status of the Environmental Permits which are under appeal, asbestos containing material (ACM) removal operations were not being carried out at Daneshill or Maw Green at the time of my visit and only handpicking of ACMs was being carried out at Edwin Richards Quarry.

Qualifications and experience

- 2.7** I hold a Bachelor of Science Degree (Honours) in Environmental Chemistry from the University of Edinburgh. I am a Chartered Chemist and a Fellow of the Royal Society of Chemistry. I am a Member of the Chartered Institution of Wastes Management, a Chartered Waste Manager and a Chartered Environmentalist. I am a registered Qualified Person in accordance with the Contaminated Land: Applications in Real Environments Code of Practice on the Definition of Waste: Development Industry Code of Practice.
- 2.8** I am an active member of a number of industry development groups including the Environmental Services Association (ESA) Regulation Committee. I chaired the ESA Waste Treatment Best Available Technique Reference Document (BREF) Working Group and was appointed as a UK Technical Expert to the European IPPC Bureau Technical Working Group for the Best Available Technique (BAT) standards for waste treatment under the Industrial Emissions Directive.

- 2.9** I have provided advice on the assessment, control and regulation of solid, aqueous and gaseous contaminants in the environment for more than thirty five years. I specialise in providing technical advice on environmental issues with particular experience in the environmental impacts and regulation of waste management including the treatment and disposal of waste and the extraction and processing of minerals.
- 2.10** I have extensive experience in the assessment of the risks associated with the identification and management of inert, non-hazardous and hazardous wastes together with the regulatory regime for waste management facilities. I have been actively involved on behalf of the private sector and the public sector in the development of the approach to the identification, assessment, management and regulation of inert, non-hazardous and hazardous wastes over the past thirty five years and in the development and application of legislation and guidance relating to the definition and management of inert, non-hazardous and hazardous waste in the UK. A copy of my curriculum vitae is provided at Appendix A to this Proof of Evidence.
- 2.11** In this Proof of Evidence I refer to and rely on the expertise of Simon Cole in the review of asbestos monitoring data and the assessment of the risks to human health and the environment associated with the concentrations of free asbestos fibres recorded during the monitoring as set out in his Proof of Evidence.

Declaration

- 2.12** The evidence which I have prepared and provide for this appeal in this Proof of Evidence is true and has been prepared and is given in accordance with the guidance of my professional institutions. I confirm that the opinions expressed are my true and professional opinions.

3. Background to the issue of the permits the subject of this appeal

3.1 The activities which are the subject of this appeal comprise, in summary, the treatment of soil contaminated with bound asbestos materials in order to provide uncontaminated soil that is suitable for use as a restoration material for the restoration of the adjacent landfill sites. The activities are carried out on behalf of FCC by Provectus. There is a clear need for these treatment activities as large quantities of soil contaminated with bound asbestos (such as asbestos cement, asbestos sheeting and asbestos cement pipes) arise during the redevelopment of land and particularly for the redevelopment of brownfield sites. As explained in paragraph 5.11 of this PoE, the threshold for the asbestos content of waste for classification as hazardous waste is an asbestos fibre content >0.1% by weight or the presence of any amount of asbestos containing materials (ACMs) including bound asbestos. The presence of any ACMs therefore means that all the waste soil is automatically classified as a hazardous waste and can be disposed of only at a hazardous waste landfill site. Where the ACMs are removed, and there are no other contaminants which would result in the soil being classified as hazardous, or otherwise unacceptable, the soils can be recovered for use. Provectus have extensive experience in carrying out this type of activity and operate a number of facilities in the UK. At a number of sites, including at Daneshill and Maw Green, the asbestos segregation activities are or would be carried out at the same site as other soil remediation techniques, typically comprising the bioremediation of soils contaminated with organic compounds.

Daneshill – refusal to consent the proposed ACM screening activities in the DH V009 EP

3.2 Daneshill landfill site is almost completed and areas are currently awaiting restoration. There are no residual soils available on site for use in restoration. In accordance with the waste hierarchy, it is proposed by FCC that recovered soils are used to restore the site, rather than to use raw materials (ie previously undisturbed soils) wherever possible. Accordingly, FCC wished to add to their existing environmental permit waste treatment activities comprising the bioremediation of soils and the segregation and removal of ACMs from contaminated soils. The layout

of the proposed activities is shown on Figure 1 provided with this Proof of Evidence (PoE). The soils treatment area is located immediately to the south of the landfill site.

- 3.3** The application to vary the Environmental Permit (EP) was submitted in January 2021. The application was to include bioremediation treatment of soils and screening and removal of ACMs from soil. It is understood and accepted by all concerned that the proposed ACM screening activities must be designed and managed to prevent or minimise the emissions of asbestos fibres to the atmosphere. This requirement is important in order to protect the health of site workers, who are located closest to the activities, as well as to protect the health of any nearby sensitive receptors and to protect the environment generally.
- 3.4** It is not technically possible in practice to remediate soils by removing free asbestos fibres from the soil as free fibres are not easily visible with the naked eye and cannot readily be removed by any physical or chemical techniques. In practice, remediation can only comprise the removal of ACMs. As explained above, FCC carry out the removal of ACMs which comprise bound asbestos in order to recover soil that is suitable for use in the restoration of the landfill. Accordingly, it is important to FCC to make sure that the soil being received at the site for treatment does not contain elevated concentrations of free fibres and only contains bound asbestos which can be removed through the treatment process. As explained at paragraph 3.30 and in Section 4 of this report, limits are therefore set for the concentrations of free fibres in the incoming soils.
- 3.5** The removal of bound ACMs from contaminated soils is carried out manually by trained operatives. Environmental Permits are in place for this activity at a number of locations comprising permits authorising fixed treatment activities and permits authorising mobile activities (see Section 5 of this report). The application submitted for the variation of the Daneshill Environmental Permit includes mechanical sorting and separation of the contaminated soils using screening equipment. The purpose of the mechanical screening step is to separate the incoming material into different size fractions in order to make the subsequent handpicking process to remove the ACMs more efficient as the ACMs are typically present predominantly in the mid-size screened fraction. This reduces processing time and consequently energy use for

operating plant and equipment (as explained further in Section 4 of this report). It has been established by monitoring, as explained in the PoE of Simon Cole (Section 7), that the mechanical screening process as proposed does not generate any materially greater concentrations of free fibres in the soil compared with those in the untreated soil.

- 3.6** The permit variation application submitted in January 2021 for Daneshill was unusual in that the operator (FCC) and Provectus had built up a substantial body of data on the actual recorded emissions of asbestos fibres from the activities being carried out at other sites. FCC are therefore able to use this data to confidently understand the nature of the risks of emissions of fibres from the proposed activities. These data and their findings, as explained in the PoE of Simon Cole, support the conclusions of studies published by others that asbestos fibres are not readily released from typical soils and show that the proposed controls as explained further in Section 4 of this report, including in particular the controls on the concentrations of free fibres in incoming material and the use of effective dampening procedures, result in the minimisation of emissions. The data also show that the implementation of additional controls such as those trialled at Edwin Richards Quarry, as explained in paragraphs 3.35 to 3.41 below, provide no additional material reduction in fibre emissions.
- 3.7** The processing of the Daneshill variation application following submission to the EA in January 2021 was protracted. Details of the communications between FCC and the EA and the associated timeline from the submission of the application until the refusal of the application for the ACM screening activity are provided at Appendix B to this PoE. A copy of the permit variation application is provided at CD2/1 and a full copy of the correspondence referred to in the timeline is provided at CD2/2. As part of the preparation for the Appeal process, FCC requested the release of all EA correspondence, including internal correspondence, relating to the consideration of the Daneshill variation application by the EA. The information was requested under the Environmental Information Regulations (EIR). Much of the information released by the EA to FCC is included in the Appeal correspondence provided at CD2/2. Additional EA internal email correspondence which is of relevance to the Appeal is provided at CD9/2. While some of these emails refer to attachments, no attachments were provided with these emails in response to the EIR request.

- 3.8** The application was submitted on 21 January 2021 and, following requests for a few additional details in June 2021, the application was Duly Made by the EA on 6 August 2021. A Schedule 5 Notice requesting further details for both the bioremediation and the ACM segregation activities was issued on 6 August 2021 and a full response was provided to the EA on 1 October 2021. As part of the discussions while preparing the response, the technical consultants for FCC (Caulmert Limited) offered to provide to the EA a video and photographs to provide further clarification of the emission control proposals but these offers were turned down as the EA representative stated that they were familiar with the technologies proposed.
- 3.9** On 25 November 2021, the EA responded to state that they did not consider that the proposed asbestos storage and picking activities met the Best Available Technique (BAT) requirements and invited the Applicant to withdraw their proposals or to confirm that additional controls would be provided. The Applicant requested a meeting with the EA technical specialist (Chris Hall) but this request was not taken forward by the EA. Following further correspondence and discussions, the applicant provided on 22 February 2022 further details to explain the proposed emission controls and, in an attempt to avoid refusal of the ACM segregation activity, included a proposal for the addition of a cover to be added to the mechanical screener and outlet conveyors with air extraction and extracted air passed through a HEPA filter. At this stage, FCC had not established whether such equipment was available as at the time it was carrying out a trial of the effectiveness of retrofitted controls to a mechanical screener at its Edwin Richards Quarry facility (as described further at paragraphs 3.35 to 3.54 below). In addition proposals were included to add fixed spray rails to the conveyors transporting screened material to and from the picking station. The results of the monitoring of asbestos fibres in air during mechanical screening activities at Edwin Richards Quarry are reviewed and discussed by Simon Cole in Section 5 of his PoE.
- 3.10** No further responses were received from the EA until 5 May 2022 when FCC were told that the application had been referred to the technical leads in the EA given that a wider EA approach needed to be determined. Without any further opportunities for discussion, a draft varied EP was issued for review on 21 June 2022 which did not include the proposed ACM treatment activities. A request was made by the applicant

on 4 July 2022 to speak to the technical specialists but the response from the EA was that the decision had been made and there was no discussion to be had.

3.11 In order to try and include at least some aspects of the asbestos treatment activity in the permit variation, the applicant asked the EA on 8 July 2022 whether they would be prepared to include the activity if the mechanical screening element was removed. The EA replied on 24 August 2022 that it was not appropriate to reassess the application at that stage. The draft varied EP was placed on Citizen Space for consultation on 21 October 2022 and the varied EP (the DH V009 EP) and the accompanying Decision Document (DD) were issued on 9 December 2022 excluding any asbestos segregation treatment activities.

3.12 In summary, as set out in their December 2022 DD (CD3/1) the EA consider that it is necessary, based on their interpretation of BAT and what the EA state comprises their guidance (as described and discussed further in Section 6, paragraphs 6.12 to 6.23 of this report):

(a) to only undertake the proposed activity using a 'fully enclosed' screener and conveyors with air extracted and filtered;

(b) for that screener to be located in a building;

(c) for all stockpiles of soils contaminated with asbestos to be stored in a building; and

(d) for the enclosed picking station to be located in a building.

3.13 The application for an Environmental Permit can be a long and protracted process particularly where there are disagreements between the applicant and the regulator regarding the appropriate standards and techniques. The options available to applicants where the proposals are not agreed or accepted by the EA (even though the applicants may consider that the proposals are robustly justified, are acceptable and have been accepted elsewhere for permitted sites) are:

(a) to keep presenting additional justification to the EA and arguing that their approach is acceptable and suitably protective of the environment and human

health in the hope that the EA will eventually accept the arguments and approve the application;

(b) to agree to implement additional controls even though they are considered unnecessary, in order for the EA to issue an environmental permit; or

(c) to await refusal of the permit application and then to appeal against that refusal.

3.14 The second approach (option (b) above) can be commercially expedient where obtaining a permit is a business-critical matter for an applicant as the alternative options are very time consuming, particularly given that this follows an already protracted permit application process. The second approach is what the applicant attempted to achieve after more than 12 months had elapsed since the application was submitted. Despite the robust evidence provided by the applicant (option (a) above) that additional emission control techniques were not necessary, additional protective measures were offered to the EA including, in particular, the provision of an enclosed mechanical screener, in order to obtain the Environmental Permit. In the event, despite the offer by FCC to provide full enclosure of the screener, the asbestos segregation activity still was refused (option (c) above) by the EA when they issued the DH V009 EP in December 2022.

3.15 As set out in the GoA and the SoC for the first Daneshill Appeal, the EA state in the 2022 DD (page 10) that the asbestos treatment activity is refused as:

'We do not consider that the proposed operating techniques for the storage, handling and treatment of asbestos waste represent BAT. We consider that the storage, handling and treatment of asbestos wastes in the manner proposed increase the risk of airborne fibres being released into the environment. The proposed method of treatment is not considered to be acceptable and the operator has not provided justification that there are benefits from the proposed treatment which would outweigh the risks.'

We consider that the screening process proposed by the operator is likely to agitate the waste and result in the generation of asbestos fibres. The operator has provided details of a covered three-way screen linked to HEPA filter in which treatment will be undertaken. This however will eject soils potentially with a higher fibre content than when they were received on site.....

We consider that the proposed operation poses a risk of generating airborne asbestos fibres. Degraded and damaged waste will be friable and will pose a risk of releasing asbestos fibres. This will be further compounded by handling and treatment.

We consider the mechanical screening process proposed by the operator is likely to agitate the waste and result in the generation of asbestos fibres. Such fibres from damaged/broken bonded asbestos can easily become airborne during treatment. The screening of such waste will break the asbestos pieces and release fibres. The inhalation of asbestos fibres can cause serious illness and significant harm to human health including malignant lung cancer. Any increase and/or agitation of fibres would create a risk to human health as there is no safe lower limit. Therefore, having regard to the nature of the potential emissions and the need to prevent them to ensure the waste management of asbestos is carried out without endangering human health or without harming the environment, it is essential the handling of waste containing asbestos is kept to a minimum to avoid the risk of any release of asbestos'.

- 3.16** The EA base their decision on the assumption that mechanical screening and other mechanical processes such as waste transfer between stockpiles and conveyors will result in the generation of additional free asbestos fibres and therefore increased risks to health. This assumption is not supported by the monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE. Relevant monitoring data regarding the release of asbestos fibres during the

processing of soils contaminated with ACMs was available to the EA through information provided during the application process for Daneshill and from the site returns for routine monitoring at Edwin Richards Quarry where similar activities including mechanical screening were being carried out, albeit in a building as explained in paragraphs 3.35 to 3.54 of this PoE.

- 3.17** The EA also assume that the proposed emission control measures presented in the permit variation application do not prevent or minimise the release of asbestos fibres from the soil and therefore result in increased risks to health. This assumption is not supported by the monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE.
- 3.18** The decision of the EA to exclude the processing of asbestos contaminated soils from the varied DH V009 EP is the subject of the initial Appeal submitted in June 2023. Following the submission of the June 2023 Appeal, the Statement of Case (SoC) was submitted in July 2023. The SoC included reference to the consented activities at Maw Green (in Environmental Permit reference EPR/BS77221D/V009) which were similar to those proposed by FCC in the variation application for Daneshill, and which included the use of a mechanical screener and the management of the activities in the open with the application of emissions management processes but without the need for enclosure and/or location within a building.

Daneshill – EA initiated variation to include ACM screening activities in the DH V010 EP

- 3.19** In September 2023, the EA issued a regulator-initiated variation of the Environmental Permit (the DH V010 EP) which granted permission for FCC to carry out the processing of asbestos contaminated soils but which included, in the view of FCC, the need to apply unreasonable and / or unnecessary controls. The variation includes an activity (AR3A in Table S1.1) comprising the '*Recovery of soils impacted with identifiable pieces of bonded asbestos by separation*'. The EP states in particular that:

'AR3A - Screening and handpicking shall take place in a building... The screener shall be enclosed... Screened soil impacted with asbestos shall be stored inside a building....

AR4... No more than 150 tonnes of hazardous waste shall be stored in aggregate. No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR3A shall be stored at any time. Soil impacted with asbestos shall be stored inside a building...

Table S1.4 Pre-operational Condition 7 (PO7) Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR3A a report shall be submitted for approval detailing the following aspects:

- Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design.*
- Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site.*
- Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed.*

No mechanical pre-screening of asbestos contaminated soils under activity reference AR3A shall commence unless the Environment Agency has given prior approval under this condition'.

- 3.20** As set out in the GoA for the second Daneshill Appeal and the cSoC it is considered that the conditions imposed are unreasonable and unnecessary.

- 3.21** The EA continue to assume that mechanical screening and other mechanical processes such as waste transfer between stockpiles and conveyors will result in the generation of additional free asbestos fibres and therefore increased risks to health. It is stated in the DD for the DH V009 EP (page 10) that:

'We consider the mechanical screening process proposed by the operator is likely to agitate the waste and result in the generation of asbestos fibres. Such fibres from damaged/broken bonded asbestos can easily become airborne during treatment. The screening of such waste will break the asbestos pieces and release fibres. ...Any increase and/or agitation of fibres would create a risk to human health as there is no safe lower limit.'

- 3.22** On that basis the EA insist that 'enclosure' and the location of the ACM storage and treatment activities inside a building are necessary. The monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE demonstrate that the assumption made by the EA that mechanical processes will result in the generation of additional free asbestos fibres and therefore increased risks to health is not supported by the evidence.
- 3.23** The EA also continue to assume that the proposed emission control measures presented in the permit variation application do not prevent or minimise the release of asbestos fibres from the soil and therefore result in increased risks to health. The monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE demonstrates that this is not the case.
- 3.24** Furthermore, given the experience of FCC in seeking to discharge the pre-operational condition for Edwin Richards Quarry, as discussed below, it is considered highly unlikely that appropriate agreement can be reached with the EA to discharge PO7 as it has been established that a 'fully enclosed' mechanical screener with all dust emissions from the screening operations directed to an active abatement system is not an 'available' technique.
- 3.25** Following the issue of the DH V010 EP, the EA requested that on the basis that the asbestos treatment activity had been consented, FCC should withdraw the initial

appeal. FCC declined to withdraw the appeal and submitted the second appeal against the onerous conditions of the DH V010 EP.

Maw Green - EA initiated variation to include additional restrictions to the previously consented ACM screening activities in the MG V010 EP

- 3.26** Maw Green Landfill Site and soil treatment facility is operated by 3C Waste Limited, a wholly owned subsidiary of FCC. The landfill site is partially completed and areas are currently awaiting restoration. As for Daneshill Landfill Site, there are no residual soils available on site for use in restoration and it is proposed that recovered soils are used to restore the site, rather than to use raw materials wherever possible. The Maw Green EP was varied in 2019 to add a bioremediation soil treatment facility to the site activities and in January 2023 an application was submitted to further vary the permit to include an activity for the treatment of ACM contaminated soils using 3-way mechanical screen and handpicking of bound asbestos. The layout of the activities is shown on Figure 2 provided with this PoE. The soils treatment area is located immediately to the south east of the active landfill site and part of the treatment area is located on top of the permanently capped landfill.
- 3.27** The application to vary the Environmental Permit was submitted in January 2023. Details of the communications between the applicant and the EA and the associated timeline from the submission of the application until the grant of the application for the ACM screening activity are provided at Appendix C to this PoE. A copy of the permit variation application is provided at CD2/3 and a full copy of the correspondence referred to in the timeline is provided at CD2/4). The application was for similar asbestos segregation activities to those proposed for Daneshill with similar controls as proposed in the original Daneshill application.
- 3.28** The application was submitted on 10 January 2023 and the application was confirmed as Duly Made on 16 April 2023. In contrast with the experience of the Daneshill application, no technical queries were raised by the EA and a draft permit was issued by the EA for review by the applicant on 21 June 2023. Following discussions on a few details in the draft permit in July 2023, the proposals were accepted by the EA and the varied permit (the MG V009 EP, CD2/4/J) and associated Decision Document

(DD) (CD3/4) were issued on 25 July 2023. In issuing the varied permit, the EA accepted that the proposals comprised BAT and met the appropriate EA guidance.

- 3.29** The DD confirms that the Local Authority Environmental Health Department, the Food Standards Agency, the Health and Safety Executive and the Director of Public Health & UKHSA (formerly PHE) all were consulted during the consideration of variation the application. It is stated (page 6) that ‘...no significant concerns regarding the risk to the health of the local population from the installation’ were raised by UKHSA. It is stated in the DD (page 3) that:

‘We have reviewed the techniques used by the operator and compared these with the relevant guidance notes, Waste appropriate measures guidance, Waste BAT conclusions and SGN 5.06, and we consider them to represent appropriate techniques for the facility’.

- 3.30** The permit consented the treatment, including screening to remove oversize material, of up to 35,000 tonnes at any one time of hazardous wastes including those contaminated with ACMs. All treatment and storage of the wastes must take place on an impermeable surface with a sealed drainage system and are not restricted to being located in a building or to the enclosure of equipment. The same emission control measures as proposed for the Daneshill application are specified in the Operating Techniques listed in Table S1.2 of the EP. Similar to the proposals for Daneshill, the acceptance criteria for the concentrations of free asbestos fibres in the soils received at the site for treatment are limited in the Operating Techniques (Section 2.2 of the ESID, CD2/1/E) such that they shall not contain any asbestos fibres above 0.1% by weight for chrysotile asbestos and 0.01% by weight for all other forms of asbestos.
- 3.31** As noted at paragraph 3.18 above, the SoC for the first Daneshill appeal included reference to the consented activities at Maw Green which were similar to those proposed originally by FCC for Daneshill. Shortly after the SoC for the appeal against the refusal to issue the Daneshill activities was submitted, the EA issued on 5 October 2023 a regulator-initiated variation to the Maw Green Environmental Permit (the MG

V010 EP) stating that the previous permit (the MG V009 EP) had been issued in error. The DD for the variation (CD3/3) states:

‘(page 1) The screening and handpicking activities are permitted subject to approval by the Environment Agency (“Agency”) via improvement condition (IC 5) and Pre Operational Condition (PO4). This is to demonstrate appropriate measures are being applied, including monitoring of the effectiveness of removal by the treatment processes and adequate enclosure and abatement controls are used during the screening operation to prevent and minimise emissions of asbestos fibres...

(page 2) We recently issued a permit variation (EPR/BS7722ID/V009). On ensuring consistency of standards across the sector for the treatment of asbestos impacted soils, it has been determined that the permit variation (EPR/BS7722ID/V009) was issued incorrectly. The correct standards expected for the sector were not applied in the operating techniques, outlined in the application or implemented through the permit conditions’.

- 3.32** The EA do not set out clearly or justify anywhere what they consider ‘*the correct standards expected for the sector*’ are for the specific treatment processes previously consented and carried out at Maw Green and proposed for Daneshill. There have been no changes in the regulations or guidance relating to the previously consented activities in the time since the MG V009 EP was issued in July 2023 and no clear explanation has been provided as to why the EA considered that the MG V009 EP had been issued in error.
- 3.33** The varied permit for Maw Green (MG V010 EP) includes, in the view of FCC, the need to apply unreasonable and or unnecessary controls. The controls amended and added by the MG V010 EP are similar to those added in the DH V010 EP as described at paragraph 3.19 above and the same objections apply. This similarity in the wording extends to the reference in the final paragraph of pre-operational condition PO4 in Table S1.4 of the MG V010 EP which refers to Activity AR3A which

is the activity reference number for the DH V010 EP and not that in the MG V010 EP. In addition, Table S3.14 of the MG V010 EP incorrectly refers in the first column to pre-operational condition PO7, which is relevant to the DH V010 EP (Table S1.4). The correct reference in Table S3.14 of the MG V010 EP should be to pre-operational condition PO4 in Table S1.4 of the MG V010 EP.

- 3.34** Following the issue of the MG V010 EP, 3C Waste (FCC) submitted the appeal against the onerous conditions of the MG V010 EP.

Edwin Richards Quarry – contextual information

- 3.35** The activities at Edwin Richards Quarry (ERQ) are not the subject of this appeal but they are relevant to the proposed emission control techniques which the EA appear to consider are necessary for the mechanical and manual segregation of ACMs from contaminated soils. ERQ is a completed and partially restored former landfill site the subject of an EP for the operation of a soil treatment centre. The landfill stopped accepting wastes for disposal in 2008 and the current objective of the activities at the site is to complete the restoration of the site within a reasonable timeframe and to leave the site in an environmentally acceptable state suitable for public access. The EP is issued to the Waste Recycling Group Limited which is a wholly owned subsidiary of FCC. The current soil treatment facility (STF) is operated by Provectus on behalf of FCC and is the subject of EP reference EPR/HP3632RP/V003 issued on 2 June 2021 (the ERQ V003 EP) (CD9/1/A). The STF was developed in a building and hardstanding areas which remained from the former quarrying activities at the site. The intention of the STF is to use the treated soils to restore the former quarry to the consented development levels.

- 3.36** The ERQ EP includes consented activities (AR2) for the mechanical screening of asbestos contaminated soils followed by handpicking from an enclosed picking line for the removal of ACMs as well as the bioremediation of soils contaminated with amenable organic compounds. The EP states at Table S1.1 that the mechanical screening and handpicking and storage operations shall take place in the building known as the ‘dust shed’ as proposed in the application. The proposals for undertaking these activities in a building were made by the operator simply because the building was present and could readily be re-used for that purpose, not because

it was considered that carrying out the proposed activity inside a building was necessary to achieve the necessary emission controls for the ACM removal activities. Activity AR8 in Table S1.1 is for the temporary storage of hazardous waste pending treatment on site and states that:

'...Asbestos contaminated soil shall be stored either within the building as shown on drawing number 100993 – Asbestos DWG1 dated January 2018 (labelled as 'dust shed') in a way that minimises asbestos fibre emissions or stored externally, ensuring it remains damped down and covered, unless being transported, so as to minimise potential asbestos fibre emissions.

The maximum amount of asbestos contaminated soil to be stored externally shall not exceed 10,000 tonnes....'

3.37 Table S2.4 of the ERQ V003 EP restricts the concentrations of unbound fibres in the contaminated soils accepted at the site for screening and removal of ACMs to soils with concentrations of free chrysotile asbestos to <0.1% by weight and other forms or mixed forms of free asbestos fibres to <0.01% by weight. These acceptance criteria are the same as those proposed for Daneshill and applied at Maw Green.

3.38 Table S1.3 of the ERQ V003 EP lists a pre-operational measure which must be implemented and approved before the use of a mechanical screener for the pre-screening of asbestos contaminated soil under activity AR2 can commence. The pre-operational measure states:

'Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR2 a report shall be submitted for written permission detailing the following aspects:

- Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design.*

- *Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site.*
- *Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed.*

No mechanical pre-screening of asbestos contaminated soils under activity reference AR2 shall commence unless the Environment Agency has given prior written permission under this condition’.

- 3.39** FCC sought to implement the obligations of the pre-commencement condition in July 2021 and as at 17 August 2023 no agreement had been reached with the EA. The timeline and a summary of the process undertaken by FCC to try and satisfy this pre-commencement is set out at Appendix D to this PoE. A full copy of the correspondence referred to in the timeline is provided at CD9/1/C. A brief summary is provided below.
- 3.40** On 9 July 2021 a submission was made to the EA to satisfy the pre-operational condition. The submission includes a summary of the measures in place to minimise emissions from the mechanical screener (acceptance procedures, located inside a building, dust suppression system installed even though the monitoring data show that this is not necessary to suppress asbestos fibres). The monitoring data had been obtained when the ACM contaminated soils were screened using a screen the subject of a mobile plant licence and associated deployment form (CD9/1/D-F) which includes consent for the mechanical screening of soil contaminated with ACMs.
- 3.41** It was explained that the data collected from inside and outside the building had demonstrated that respirable asbestos fibre concentrations (without dust suppression) had remained below the ‘ambient background concentration of 0.0005 fibres/ml’. It was explained that the evidence demonstrated that the building provided no benefit for the reduction of airborne asbestos concentrations. Furthermore, based on the monitoring data it was unclear what further mitigation would be afforded by the

use of a containment enclosure and an active HEPA filtration system on the mechanical screener. The data demonstrate that the waste acceptance procedures are the main mitigation measure for preventing elevated airborne respirable asbestos fibre concentrations.

- 3.42** The EA response dated 20 July 2021 did not address any of the monitoring data or the technical points but stated that the submission could not be approved as the pre-operational condition required a fully enclosed screener with all dust emissions directed to an active abatement system with a HEPA filter or other suitable design.
- 3.43** A meeting was requested by the applicant to discuss the issues and the data and it was explained that a fully enclosed and abated screener as required was not, to the knowledge of the applicant, available in the market. The EA were asked whether they had any examples/experience of such equipment that they could refer the applicant to. It was also explained that there are also practical issues associated with an active air system applied to the entire building due to the large volumes of air involved and the nature of the building at ERQ which has a large open door space. Proposals were also made for additional monitoring during a trial period to confirm the effectiveness of the controls other than enclosure and extraction.
- 3.44** In subsequent correspondence the EA agreed to attend a meeting but restated their view that the requirements of the pre-operational condition was clear and that the meeting should not be to negotiate/appeal the wording of the condition. The appellant further explained that they wished to understand what the pre-operational condition was seeking to achieve and how that could be achieved in practical terms before having to appeal the condition wording.
- 3.45** In their response dated 5 August 2021, the EA stated that the expectations with regard to the pre-operational condition is that the operations should comply with BAT. It is stated that:

‘The first bullet point requires the screening activity to be fully enclosed and emissions from this abated. Chemical Waste: Appropriate Measures, section 5.1, point 10 requires that where an emission is expected, all treatment vessels must be enclosed and

if vented to atmosphere only via an appropriate scrubbing and abatement system. An asbestos fibre emission is expected from the screening activity so the pre-op condition requires evidence to demonstrate that the screener is enclosed and abated. We do not have any examples/experience of such equipment we can refer you too.

The wording 'other suitable design' refers to the type of abatement/filter system to be used so as not to prescribe a HEPA filter. It does not allow for the screener to not be enclosed. We expect an emission regardless of your dust abatement measures so it is not possible to negate the need for enclosure/abatement'.

- 3.46** Despite their view that the monitoring data and referenced research papers and standard practice within the soil treatment industry demonstrate that enclosure is not necessary to achieve the protective standards for asbestos fibres in air and will provide no additional benefit, the applicant proposed that a bespoke enclosure on a mechanical screener might be created on an ad hoc basis. A cover added to the screener deck was proposed with extraction of the air to a HEPA filter. A meeting was held with the EA on 22 September 2021 to discuss the proposals and further details were submitted of the proposals by FCC on 19 October 2021.
- 3.47** On 29 November 2021 the EA responded stating that the proposals for fully enclosing the screener and extracting and abating all emissions were not approved as only the screener deck would be enclosed and that it was necessary for all parts of the screening process to be fully enclosed, abated and routed to an extraction point with a point source emission.
- 3.48** The applicant then proposed to contact the screen manufacturer to see if further covers could be provided for the exit conveyors from the screener. In subsequent correspondence (2 December 2021) the EA responded that while enclosure of the conveyors and screening deck may enclose the equipment, the pre-operational condition also requires that *'all dust emissions from the screening operation are directed to an active abatement system...'*. and questioned how this would be achieved for the screened soil as it exits the screener/conveyor. FCC requested a

further meeting to discuss the screening process and what it is practicable to achieve in terms of enclosure and extraction.

3.49 A revised submission was made by FCC to the EA on 11 November 2022 to discharge the pre-operational condition. These revised proposals included:

- the location of the screener in an enclosed building with all emissions abated via a HEPA filter,
- the installation of quick closing doors to the existing entrances to the building, which would be closed during screening operations.
- to ensure containment of diffuse emissions generated during the soil processing, the extraction of air from extraction hoods directly around the soil screener and picking station and for the collected air to be directed to a HEPA filter.

3.50 Monitoring controls were proposed with daily compliance criteria of 0.01 fibres/ml and a quarterly trigger level of <0.0005fibre/ml. Additional air monitoring for asbestos fibres was proposed on a quarterly basis using scanning electron microscopy to confirm a baseline level of asbestos emissions to air of <0.0005 fibres/ml.

3.51 The EA responded on 16 December 2022 that these further proposals did not meet the requirements of the pre-operational condition because the requirement of the pre-operational measure was not to provide alternatives to fully enclosing the screener but that it is *“to demonstrate that the mechanical screener is fully enclosed”*. The EA stated that without full enclosure of the mechanical screener the pre-operational condition cannot be fulfilled. Despite further correspondence regarding the lack of availability of a fully enclosed screener, the EA concluded on 4 January 2023 that *‘... if you cannot source the equipment necessary to be able to carry out the activity in accordance with the existing permit requirements, then unfortunately you cannot carry out the activity’*.

3.52 The pre-operational measure in ERQ V003 EP is the same in all material respects as those imposed by the EA in DH V010 (Pre-operational measure PO7 in Table S1.4) and MG V010 (Pre-operational measure 4 in Table S1.4) EPs. The experience

gained by FCC when attempting to satisfy the EA requirement for a fully enclosed mechanical screener for ERQ demonstrates that there is no fully enclosed mechanical screener available in practice hence it cannot comprise BAT and that the EA would not accept the practical alternatives offered.

3.53 FCC subsequently applied to the EA in July 2023 to request that they adopt a Local Enforcement Position (LEP) for the site in order that FCC could undertake a trial of the pre-screening activity so that monitoring data could be gathered to confirm what emissions may or may not be generated by the mechanical screening activity. It was proposed that the trial would generate a knowledge base from which the EA would be able to determine which controls or abatement are appropriate or necessary. The proposals for the LEP were refused by the EA in August 2023 for the following reasons:

- There is no evidence that the activity will provide an environmental benefit, and you have been unable to quantify the risk to the environment and human health from the activity.*
- The proposal does not demonstrate Best Available Techniques will be achieved.*
- The proposal could affect the market for soil wastes to the disadvantage of other permitted operators.*
- The proposal would pre-empt the outcome of the determination process for a pending Variation application.'*

All correspondence with the EA regarding the LEP application is provided at CD9/1/G to CD9/1/I.

3.54 The EA state at paragraph 22 of their Rule 6 Statement dated 22 January 2024 (CD5/2) that *'The Appellant is currently in process of discharging pre-operational conditions to allow full operation of a mechanical screening of soil containing asbestos operation through permit application for ERQ reference EPR/HP3632RP/V005'*. As explained above, the Applicant has been unable to discharge the pre-operational condition in the ERQ EP and the EA has not accepted

the proposals for a LEP. The only option left to the Applicant has been to apply to vary the ERQ in order to amend or remove the pre-operational condition regarding full enclosure. The variation application was submitted to the EA in December 2022 and currently the Applicant is responding to a request from the EA for further details.

4. The proposed emission controls and their effectiveness

4.1 The development is summarised in Section 4 of the GoA and further detail is provided in the cSoC. Plans showing the proposed layout of the soil treatment facilities at the Daneshill and Maw Green sites including the proposed activities are provided at Figure 1 and Figure 2 of this PoE respectively.

4.2 Each stage of the proposed activities comprising the acceptance and pre-treatment phase, the treatment phase and the post-treatment phase also are shown schematically on Figure 3 of this PoE. A summary is provided in Table 1 for each stage of the mitigation measures which will be implemented to prevent or minimise potential emissions and the procedural systems and monitoring which are proposed to provide controls, confirmation and reassurance that the operations and mitigation measures continue to prevent or minimise emissions of asbestos fibres during all phases of the proposed activities.

4.3 The proposed emissions controls for each stage of the proposed activities at both Daneshill and at Maw Green are described in Table 1 and summarised in Table 2 to this PoE including reference to the relevant procedures through which the controls and associated techniques are implemented. The procedures are implemented through the FCC externally certified and audited Environmental Management System which is a requirement of Condition 1.1.1 of the Environmental Permit for each facility.

Pre-acceptance and delivery

4.4 Soils contaminated with bound ACMs will only be accepted for treatment where it has been confirmed that:

- The concentrations of free dispersed chrysotile asbestos fibres are <0.1% by weight;
- The concentrations of free dispersed amphibole fibres are <0.01% by weight; and
- The ACMs which can be accepted for treatment at the site (mixed with the soils) will be limited to bound asbestos which can be removed as Notifiable Non-Licensed Works (NNLW) in accordance with the Control of Asbestos Regulations

2012 (CD1/F). This restriction results in the exclusion from acceptance of unbound asbestos products such as lagging and insulation materials.

4.5 Waste pre-acceptance procedures would be in place at both Daneshill (DH) and Maw Green (MG) to confirm that wastes proposed for delivery to the site meet these criteria before wastes are identified as suitable for delivery to the sites and for acceptance at the Soil Treatment Facility (STF).

4.6 Wastes are transported to the sites in covered or sheeted loads which may be in wagons or skips. It is the legal responsibility of the hauliers to implement the Duty of Care and to contain the wastes appropriately during transportation. Any washout or decontamination of the wagons or skips is carried out by the hauliers at other facilities; it is not carried out at the STF.

Stockpiling of wastes awaiting treatment

4.7 The paperwork accompanying the arriving load is checked to confirm that the wastes have been pre-authorized through the pre-acceptance procedure. No loads that 'turn up on the day' are accepted at the site. Quarantine and rejection procedures are in place in the event that unsuitable materials are delivered to the site or generated at any stage in the processing at the STF.

4.8 Each arriving vehicle is directed to the appropriate stockpile area located externally on an impermeable surface with a contained drainage system. Wastes of the same type from the same site of origin are stockpiled in a single location, wastes from different sites of origin are not mixed or placed in the same reception stockpile.

4.9 Water is sprayed over the soils during discharge and stockpiling to ensure that the material is suitably wetted. A water bowser with a spray is used so that it can be moved and directed as needed during waste deposit and stockpiling. A comprehensive suppression system with overlapping arcs between misting units is used.

4.10 All water used in the sprays and mist particulate suppression systems at the STFs includes a surfactant (a wetting agent) to improve its effectiveness in preventing or minimising the potential for dust or fibre emissions. The wetting agent is added in

accordance with manufacturer's instructions to a dosing tank and then added to the tank of water used to supply all dust suppression spray equipment at the STF.

- 4.11** Stockpiles are covered manually with a tarpaulin with the cover weighted down with concrete blocks when there is no transfer taking place to and from a stockpile and as a minimum at the end of each working day.
- 4.12** Samples are collected of the deposited soils to confirm that the asbestos concentrations in the soil are below the thresholds set in the acceptance procedures. Once the results of the analyses are received and the soils in an individual stockpile are approved, processing can commence. If the results show that the soil does not meet the criteria for treatment at the site, the material in the stockpile is rejected in accordance with the rejection procedures.

Mechanical screener

- 4.13** After the results of the confirmatory testing have been received and a stockpile has been approved for onward processing, the tarpaulin is removed from the stockpile and the material is transferred to the 3-way screener using a back actor bucket. All plant is mobile for maximum flexibility so the screen is moved as close as possible to the stockpile to minimise the distance over which the soil is transferred. As the soils have been wetted prior to covering with the tarpaulin, they remain damp when the stockpile is removed.
- 4.14** The transferred soil is deposited directly into the screener reception hopper with the height of the drop minimised. Spray rails are fitted to the reception hopper on the screener.
- 4.15** The screener is located on an impermeable surface in the open. This allows space for the safe movement of the mobile plant including the screener and picking station close to each stockpile to minimise transfer distances.
- 4.16** It is proposed that the mixed soil and bound ACM waste will be treated initially in a 3-way mechanical screening facility with the waste separated into three outputs comprising:

- **Oversize** comprising large pieces of stone, concrete and bricks approximately >50mm. Once confirmed as not containing ACMs, the oversize materials will then be reused as general fill and a base for haul roads and other infrastructure on site.
 - **Soil (fines) fraction** approximately <15mm. The soils will be subject to testing for asbestos fibre content to confirm the suitability of the material prior to reuse in the landfill restoration.
 - **Mid-size fraction** which will be transferred to the picking station where ACMs are removed by handpicking.
- 4.17** The output of each fraction travels along a conveyor which is fitted with spray rails to ensure that the materials remain damp. The shaker deck and the conveyors are not covered. The conveyors are shaped to have raised sides and fitted with belt return scrapers in order to minimise any potential for spillage. The oversize and the soil fraction conveyors deposit the screened material in a stockpile at the end of the conveyor. The height between the conveyor end and the stockpile is minimised. Spray rails are fitted to the end of the conveyor.
- 4.18** The mid-size material is transferred directly from the screener conveyor into a reception hopper leading to the conveyor to the picking station. A spray rail is fitted on the input conveyor to the picking line. The height between the end of the screener conveyor and the reception hopper is minimised.
- 4.19** The screener including the hopper, shaker decks and conveyors are scraped and cleared routinely so that there is no accumulation of soils. All plant at the site is subject to routine maintenance and inspection procedures.
- 4.20** The use of the mechanical screening stage improves the efficiency of the separation process by allowing the handpicking stage to be focussed on the fraction of the waste which contains the ACMs and significantly reduces the treatment time and energy use for the overall treatment method. It is explained in the Technical Note prepared by Jon Owens at Provectus (provided at Appendix E to this PoE) that based on operational experience the mid-size material fraction typically comprises between approximately 20% to 40% of the waste soil subject to mechanical screening. As

shown in the photographs provided by Jon Owens reproduced below, the removal of the fines and oversize fractions from the mid-size fraction means that the handpicking is more rapid than handpicking without prior mechanical screening as the fines in soils conceal ACM debris resulting in slower throughput in picking stations as soils are thoroughly checked or repeated handpicking events are necessary to remove missed pieces. The use of a mechanical screener also minimises the potential for overloading of the conveyor belts so reducing the potential for spillage.



- 4.21** The photograph on the left shows soils on a handpicking line which have not been subject to prior mechanical screening and the photograph on the right shows soils on a handpicking line following mechanical screening to remove the oversize and fines fractions.
- 4.22** As a result of this improvement in efficiency of handpicking, the overall time taken is significantly reduced as shown in the typical performance data below which is provided by Jon Owens based on the operational experience of Provectus.

Duration of treatment of 1,000t of ACM soil	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Hand Picking (50t/day) - cohesive	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking
Screening (200t/day and hand picking - cohesive)	Screening	Screening	Screening	Screening	Screening	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking
Hand Picking (75t/day) - granular	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking
Screening (500t/day and hand picking - granular)	Screening	Screening	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking	Hand Picking

Screening
Hand Picking



4.23 The data show that in general terms it is quicker to screen ACMs from granular soils compared with screening ACMs from cohesive soils as cohesive soils form clumps of soil and adhere to the ACMs making it harder to separate, see and handpick ACMs effectively. When comparing the time taken for each soil type, it is clear that the overall time taken to screen ACM contaminated soils is significantly faster when a mechanical screener is used prior to handpicking compared with the use of handpicking only.

Management of the oversize and soil fraction screener output streams

4.24 A trained asbestos operative is in place and inspecting the operations whenever the screener is active. The oversize output is checked visually by the operative as it is deposited from the screener and the stockpile is being formed. The trained operative would identify and remove any ACM material that is carried over into the oversize pile. Based on the experience of Provectus at similar facilities operated elsewhere in the UK this is an unusual occurrence. Visually unsuitable material such as wood or plastic inclusions are removed by hand as the material is deposited. Each batch of oversize material produced is subject to validation checks for the presence of asbestos. Where the results show that the material is suitable, the oversize material is transferred to a crusher to create aggregate for use in forming haul roads at the landfill site. If the material is tested and found to be unsuitable, rejection procedures are implemented. The crusher is fitted with dust suppression sprays. The crusher output is tested for asbestos content before it is used in haul roads and is only used if the recorded asbestos concentration is <0.1% by weight.

4.25 The soil fraction output is checked visually by the operative as it is deposited from the screener and the stockpile is being formed. The trained operative would identify and remove any ACM material that is carried over into the soil fraction pile. Based

on the experience of Provectus at similar facilities operated elsewhere in the UK this is a rare occurrence. Visually unsuitable material such as wood or plastic inclusions are removed by hand as the material is deposited. Each batch of soil fraction produced is subject to validation checks for the presence of asbestos. When the results show that the material meets the specification agreed with the EA and is suitable for use in the restoration of the landfill site, the material is transferred to stockpiles for future use or is transferred directly to the restoration area. If the material is tested and found to be unsuitable, rejection procedures are implemented.

Handpicking of the mid-size fraction of the material

- 4.26** The picking station, through which the mid-size material passes, comprises an elevated, closed, mobile portable cabin or container adapted for the specific use as shown on Figure 3 of this PoE. The conveyor transferring the mid-size material from the reception hopper into the picking station is fitted with spray rails on the input conveyor which forms the picking line. All trained operatives working at the picking line are equipped with PPE including overalls, gloves and facemasks with FFP3 filters. There is no active air extraction in the picking station.
- 4.27** The trained operatives visually identify the presence of ACMs (or potential ACMs) in the mid-size fraction and remove them from the conveyor travelling through the picking station. The ACMs are deposited directly into double asbestos bags and when they are full, the bags are sealed.
- 4.28** The materials which remain on the conveyor after going through the picking station are transferred out of the picking station on the conveyor and are deposited into an external stockpile. A spray rail is fitted at the conveyor outlet point. The height between the end of the conveyor and the clean material stockpile is minimised.
- 4.29** Each batch of picked waste which is produced is subject to validation checks for the presence of asbestos. When the results show that the material meets the specification agreed with the EA and is suitable for use in the restoration of the landfill site, the material is transferred to stockpiles for future use or is transferred directly to the restoration area. If the material is tested and found to be unsuitable, rejection procedures are implemented.

Transfer and storage of ACMs removed from the soil

- 4.30** The ACMs which are removed from the picking line are deposited directly into double asbestos bags. The sealed double bags are carried manually to an external, enclosed, lockable container where they are stored prior to removal from site for disposal at a hazardous waste landfill site under appropriate Duty of Care documentation and controls.
- 4.31** Data provided by Provectus (Appendix E to this PoE) show that the asbestos screening activities at Maw Green and Edwin Richards Quarry between 1 January 2022 and 30 June 2023 treated a total of 116,179tonnes (t) of ACM contaminated soil from which a total of 43.59t of ACMs were removed for disposal. During this period these STFs therefore facilitated the recovery and re-use of a total of 116,135.41t of soils (99.96% of the initial contaminated soil volume which otherwise would all have been disposed of at a hazardous waste landfill cell.

Other mitigation measures

- 4.32** It is understood that the majority of the mitigation measures and procedural controls proposed by the Applicant for the operation of the STFs at Daneshill and Maw Green are accepted by the EA as appropriate. Other than the specific matters referred to at paragraph 4.33 below, neither the DDs for the DH V010 and the MG V010 EPs nor the EPs themselves (CD3/2 and CD3/3) include any requirements to amend or update procedures and processes including those relating to the Environmental Management System, training, competence, site surfacing, surface water collection and management, Accident Management Plans etc.
- 4.33** As described in Sections 6 and 7 of this PoE, there are no emission limits for asbestos fibres in air set in the Waste Treatment BAT Conclusions document (CD1/Z) (BAT-AELs) or in any guidance issued by the EA. In the DDs for the DH V010 and the MG V010 EPs, it is stated that:

'Emission limits

Emission Limit Values (“ELV’s”) based on BAT, have been added for the following substances in table S3.2 for the air abatement system for the mechanical screener:

- *Particulate matter (dust) = 5 mg/m³ (BAT-AEL requirement)*
- *Asbestos fibres = 0.1 f/ml (EA requirement)*

We made these decisions in accordance with Chemical Waste Appropriate Measures and the Waste Treatment Best Available Techniques Conclusions (“BATCs”).

- 4.34** In addition, a boundary limit is set for asbestos fibres (Table S3.11A of the DH V010 EP and Table S of the MG V010 EP) of 0.01 fibres/ml. The Appellant agrees with and accepts these emission limits set by the EA and it is confirmed in Section 8 of the PoE of Simon Cole that the extensive monitoring database reviewed confirms that these limits are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.
- 4.35** It is explained in section 5.1.25 of the PoE of Simon Cole that the on-site sampling at Maw Green has been undertaken using UKAS accredited procedures and that the analysis has been undertaken by a UKAS accredited laboratory with fibre counting carried out in accordance with the ISO 14966:2019 standard. Simon Cole states that the duration of sampling has enabled a limit of quantification (LoQ) of 0.0005 f/ml which is significantly lower than (ie better than) that ordinarily associated with conventional monitoring used for asbestos-related activities (which are 0.04f/ml for personal monitoring and 0.01f/ml for static sampling using the methodology set out in the guidance from the Health and Safety Executive (HSG248, CD1/O); and significantly lower than the BAT-associated emissions levels (AELs) proposed by the EA in EPs. The DH V010 EP and the MG V010 EP specify emission limits of 0.1f/ml at the emission source and 0.01f/ml at the site boundary). The LoQ achieved also is lower than (ie better than) the Limit of Detection of 0.01f/ml for the 'preferred' method specified in The EA guidance M17 (CD1/N). Dr Cole notes that there is no relevant

MCERTS performance standard or MCERTS accredited test methods for ambient air monitoring for asbestos.

- 4.36** The recovered soils produced at the STFs are to be used in the restoration of the adjacent landfill sites. The specification for the restoration soils at the Maw Green Landfill Site was prepared based on a risk assessment and has been agreed with the EA¹ which is provided as CD2/3/M and CD2/3/N. The specification for the use of soils in the restoration of Daneshill Landfill Site has not yet been agreed with the EA but it is anticipated that it will be prepared based on the same risk assessment principles as that agreed for Maw Green and will therefore have similar limits for asbestos fibres in the soil. The asbestos concentration limits which are set and agreed with the EA for the soil to be used in the restoration of Maw Green Landfill Site are <0.1% by weight of asbestos fibres for soils to be placed in the restoration profile for the landfill at depths more than 300mm below the final ground surface. The agreed limit for asbestos in restoration soils in the upper 300mm layer of soils is <0.001% by weight which is the typical method detection limit (as explained in Section 6 of the PoE of Simon Cole).

Emission management aspects and controls challenged by the EA

- 4.37** It is understood that the aspects of the proposed activity which are not accepted by the EA as appropriate for the proposed activities and the changes to the controls that the EA require are:
- ***The generation of asbestos fibres from mechanical screening.*** The EA consider that the mechanical screening process proposed by the operator is likely to agitate the waste and result in the generation of asbestos fibres. The EA state (CD3/1) that any increase and/or agitation of fibres would create a risk to human health as there is no safe lower limit.
 - ***Enclosure of the mechanical screener and location in a building.*** The EA consider that the effectiveness of the proposed controls on the potential emissions of asbestos fibres associated with the proposed use of the 3-way mechanical

¹ Risk Assessment for Treated Soils. Maw Green. 12 March 2021 reference MG-RA V2.

scraper are insufficient. The EA consider (CD3/2 and CD3/3) that if a mechanical screener is used it must be 'fully enclosed' or 'enclosed' and that the operations must take place inside a building. The EA consider that all 'dust emissions' from the screening operation must be directed to an active abatement system with a HEPA filter or other suitable design;

- **Location of stockpiles in a building.** The effectiveness of the proposed controls on the potential for emissions of asbestos fibres associated with stockpiling of soils contaminated with ACMs is not considered sufficient by the EA. The EA consider that all stockpiles of 'soil impacted with asbestos' must be located in a building; and
- **Manual picking line to be in a building.** The effectiveness of the emissions control measures for the manual picking line which is located within a closed cabin is not accepted by the EA. The EA consider that the picking cabin itself should be located in a building.

4.38 Based on these assumptions and conclusions the EA do not consider that the proposed operating techniques for the storage, handling and treatment of asbestos waste at the STF's represent BAT. I deal with each of these aspects in turn below.

4.39 **The generation of asbestos fibres from mechanical screening.** The EA are concerned that the mechanical agitation associated with the use of a 3-way screen will result in the generation of fibres from the bound ACMs and therefore increase the concentration of asbestos fibres in the soil waste. Simon Cole describes in Section 7 of his PoE that the monitoring evidence demonstrates there are no materially increased concentrations of fibrous asbestos in processed soil material following mechanical soil screening.

4.40 The EA identify (CD2/4/M, CD3/2 and CD3/3) the emission levels (EA derived BAT-AELS) and boundary threshold levels of asbestos fibres in air that they consider are acceptable. The extensive monitoring database reviewed confirms that these limits are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.

- 4.41** It is clear from the evidence presented and reviewed in the PoE of Simon Cole that the mechanical screening of the contaminated soils, where the pre-acceptance limits and the proposed emissions control techniques are applied, results both in the prevention or minimisation of the emission of asbestos fibres and in compliance with the asbestos in air BAT-AEL and the boundary threshold limits proposed by the EA.
- 4.42** ***Enclosure of the mechanical screener and location in a building.*** The EA require that the mechanical screener is 'fully enclosed' with all 'dust emissions' from the screening operation directed to an active abatement system with a HEPA filter (or alternative) and that the operations must take place inside a building. As explained in paragraph 4.2 of the DH2 SoC, covering or enclosure of the mechanical screener with the air abstracted and channelled through a HEPA filter is not proposed as it is considered unnecessary in order to prevent or minimise asbestos fibre emissions and it is an unavailable technique. The proposal provided during the EP variation application for the DH V009 EP to partially enclose the mechanical screener and utilise a HEPA filter arose during the determination of the application as a result of the Appellant attempting to address the EA's concerns (as explained in paragraphs 3.8 to 3.12 of this PoE) rather than considering it as necessary in order to prevent or minimise emissions. At the time it was not clear to FCC that an enclosed screener was not available in the market. Since then, further investigation and practical testing associated with the work to attempt to satisfy the EA with regard to the pre-operational condition for ERQ (paragraphs 3.38 to 3.54 of this PoE) has confirmed that it is not technically possible to operate a 3-way mechanical screen with enclosures and a HEPA filter safely and the Appellant does not propose that the mechanical screener will be enclosed.
- 4.43** It is demonstrated in the PoE of Simon Coles that the use of a mechanical screen with the proposed emissions control measures will prevent or minimise the emissions of asbestos fibres and therefore the measures proposed comprise BAT as discussed further in Section 7 of this PoE.
- 4.44** The findings of the trial at ERQ confirm the results of extensive market enquiries made on behalf of the Appellants which have resulted in a failure to identify any mechanical screener available on the market which is fitted with covers and/or is

wholly or partly enclosed. Further more recent enquiries have been made by Provectus (Appendix E) which confirm that a 'fully enclosed' mechanical screener with all dust emissions from the screening operations directed to an active abatement system is not an 'available' technique and therefore cannot comprise BAT in any event.

- 4.45** The EA state in the DDs (CD3/2 and CD3/3) that High Efficiency Particulate Air ('HEPA') filters are a commonly available technique to control asbestos fibre emissions and are used at other sites as part of Best Available Techniques ('BAT') for emissions control. I agree that HEPA filters are commonly available and effective and used in a range of air abstraction and emission control techniques. I am not aware, and neither are Provectus or FCC despite their enquiries throughout the mechanical plant industry, of any mechanical screener plant where these abstraction control and filters are applied. The EA were asked by FCC if they were aware of any examples of providers of such equipment during the discussions regarding ERQ (CD9/1/C) but the EA did not provide any examples of suppliers or users of such equipment.
- 4.46** ***Location of stockpiles in a building.*** The EA state that the stockpiling of soils 'impacted by asbestos' must be inside a building. The waste soils with ACMs will be stockpiled in a reception area in a location which is clearly delineated and segregated from other waste soils. The reception areas are external and are located on an impermeable surface with an enclosed drainage system. As described above soils contaminated with ACMs are only accepted at the site if sampling by the waste producer confirms that it contains only very low levels of unbound asbestos fibres. On deposition in the reception stockpile area the soils are wetted and covered with tarpaulins to provide a physical barrier while the soil is subject to further sampling and testing to confirm the information provided by the waste producer.
- 4.47** It is explained in Section 5 of the Proof of Evidence of Simon Coles that the external storage of wetted, covered stockpiles of waste soil containing ACMs and low concentrations of unbound asbestos in accordance with the acceptance specification as proposed will prevent or minimise the emissions of asbestos fibres and therefore

the measures proposed comprise BAT as discussed further in Section 7 of this Proof of Evidence.

- 4.48** *Manual picking line to be in a building.* The EA appear to require (Activity AR3A for the DH V010 EP and Activity AR7 for the MG V010 EP) that even though the picking line is located in a closed cabin, the picking line cabin itself must be located in a building. No justification is given for this requirement and it is directly contrary to the statement in the DDs (CD3/2 and CD3/3) that the operator's 'original proposals' for handpicking included an enclosed picking station where operatives in personal protective equipment handpick bonded asbestos fragments from the segregated soil fraction were acceptable. However, in the Environment Agency's 22 January 2024 responses to the Appellant's Daneshill 2 and Maw Green Statements, it is stated at paragraph 35 (eg for Daneshill, with similar comments for Maw Green) that the that requirement that '*Handpicking shall take place in a dedicated enclosed picking line*' is considered by the EA to be met by the '*...Appellant's proposal for how their picking line is intended to operate, which is an enclosed picking line (in accordance with current industry practice)*'. At paragraph 116 it is stated by the EA that '*The proposed handpicking station is enclosed and the Agency considers that to be compliant with the requirement to be within a building*'. It appears therefore that the EA consider the picking cabin is considered by the EA to meet their definition of 'enclosed' and 'within a building', emphasising the lack of clarity regarding the requirements set out in the DH V010 and the MG V010 EPs.
- 4.49** It is acknowledged in the DD that spray rails for damping down will be used on the input conveyors to the picking station to suppress dust and asbestos fibres. The EA state that '*this process is considered to meet the Agency's appropriate measures*'. There is no explanation provided as to the seemingly inconsistent requirement in Table S1.1 that '*...handpicking shall take place in a building...*'.
- 4.50** It is demonstrated in the Proof of Evidence of Simon Coles that the extensive monitoring data collected and reviewed confirms that the emission of asbestos fibres from the activities including the picking cabin are prevented or controlled by the proposed emission control techniques and therefore there is no need for the cabin itself to be located in a building.

Other unjustified restrictions proposed in the EPs

- 4.51** **Monitoring** – The proposals for monitoring at the STFs are set out in the application documents comprising the Emissions Management Plan for Daneshill (CD2/2/C) and the Dust and Emissions Management Plan for Maw Green (CD2/3/G).
- 4.52** **Restrictions on storage quantities.** The V010 EPs for DH and MG restrict the storage of soil impacted with asbestos awaiting treatment to no more than 150 tonnes at any one time (Table S1.1, Activity AR4 for DH and Activity AR6 for MG). The application documents for the Daneshill EP include a proposed storage limit for hazardous wastes of up to 29,999 tonnes at any one time. The EA have provided no evidence as to why this limit is unacceptable. The MG V009 EP included a maximum storage capacity for hazardous waste of 50,000 tonnes per annum and a maximum storage limit for screening activities of 38,000 tonnes at any one time. The EA have provided no evidence as to why these limits are unacceptable.
- 4.53** **Restrictions on capacity/throughput.** The V010 EPs for DH and MG restrict the treatment of soils impacted with ACMs to no more than 100 tonnes per day (Table S1.1, Activity AR3A for DH and Activity AR7 for MG). This limit is unjustified and unreasonably restrictive. It equates to approximately 5 to 6 lorry loads of soil per day which is very low for the rate at which waste soils are generated during a typical development activity.
- 4.54** The application documents for the Daneshill EP include a proposed treatment limit for hazardous wastes of up to 29,999 tonnes at any one time. The EA have provided no evidence as to why this limit is unacceptable. The MG V009 EP included a maximum treatment capacity for hazardous waste of 50,000 tonnes per annum and a maximum treatment limit for screening activities of 38,000 tonnes at any one time. The EA have provided no evidence as to why these limits are unacceptable.
- 4.55** The Grounds of Appeal against conditions in the DH V010 EP lists at paragraph 3.1.1 and 3.1.2 the conditions that are subject to this Appeal. These conditions are listed in Table 3 together with the changes sought.

4.56 The Grounds of Appeal against conditions in the MG V010 EP (CD2/4/M) lists at paragraph 3.1 the conditions that are subject to this Appeal. These conditions are listed in Table 4 together with the changes sought.

The proposed Operational Techniques

4.57 The proposed activity at Daneshill STF will be operated in accordance with the following documents submitted in support of the original application:

- Emissions Management Plan [3982-CAU-XX-XX-RP-V-0307-AO-C3-EMP which has been updated to incorporate the provision of spray rails on the input conveyors to the picking line which were proposed by the Appellant during the application process but not incorporated into the submission documents].

The following drawings:

- 3982-CAU-XX-XX-DR-V-1803_S2_P07;
- 3982-CAU-XX-XX-DR-V-1807_S2_P04;
- 3982-CAU-XX-XX-DR-V-1810_S2_P02;
- 3982-CAU-XX-XX-DR-V-1811_S2_P02;
- 3982-CAU-XX-XX-DR-V-1812_S2_P02;
- 3982-CAU-XX-XX-DR-V-1800-P02.
- 3982-CAU-XX-XX-DR-V-1813_S2-PO4

4.58 The proposed activity at Maw Green STF will be operated in accordance with the following documents submitted in support of the application for the activities consented in the MG V009 EP:

- Environmental Setting and Installation Design - Addendum - 5193-CAU-XX-XXRP-V-0309.A0.C2 ESID final.

- Activities & Operating Techniques Report - 5193-CAU-XX-XX-RP-V-0311.A0.C1
Op Tech final
- Treatment Process Description & BAT Review - 5193-CAU-XX-XX-RP-V0312.A0.C1 BAT
- Dust & Emissions Management Plan - 5193-CAU-XX-XX-RP-V-0313.A0.C1
DEMP

5. Comparative context of the proposed activities

- 5.1** The proposed activities the subject of the Appeals comprise the treatment of soils contaminated with ACMs. The objective of the treatment is to allow the soils to be recovered to meet restoration soils quality standards agreed with the EA and re-used in the restoration of landfill sites, and potentially other sites as well.
- 5.2** In this section of the PoE I compare the asbestos fibre concentration thresholds set in the pre-acceptance criteria for the proposed STFs and set them in context with the asbestos fibre concentration acceptance limits applied to the management of wastes in other waste treatment, management and recovery activities.
- 5.3** Similar asbestos contaminated soil treatment (ACM removal) activities are carried out at a number of other permitted sites in England. A review has been carried out of the controls applied by the EA in the EPs for these activities as far as can be determined based on the information available. The findings of the review are discussed in this section of the PoE.

Comparative context for the criteria used for waste acceptance and the use of recovered soil

- 5.4** As explained in Section 4 of this PoE, an acceptance limit is set on the concentration of unbound fibres which can be present in the wastes accepted for asbestos screening treatment at the sites. These acceptance limits are <0.1% by weight of chrysotile asbestos and <0.01% by weight of other forms of asbestos.
- 5.5** Standards for the concentrations of asbestos fibres in soils to be used in the restoration of previously used sites have been agreed with the EA for Maw Green Landfill Site (CD2/3/M and CD2/3/N) and for Welbeck Landfill Site² (CD9/5) as summarised in the table below. It is anticipated that the same limits for asbestos fibres in soil will be agreed with the EA and set for use in the restoration of Daneshill Landfill Site.

² Risk Assessment for Treated Soils. Welbeck Landfill. 13 July 2022. reference Wel-RA V2.

Location		Asbestos fibre concentration (by weight)
Daneshill and Maw Green STFs	Acceptance criteria for soils for treatment	<0.1% chrysotile <0.01% other forms of asbestos
Restoration soils for Maw Green Landfill Site	Upper 300mm of restoration soil (topsoil layer)	<0.001% asbestos
	Soils placed below the 300mm of topsoil (subsoil layer)	<0.1% asbestos
Restoration soils for Welbeck Landfill Site	Restoration topsoil (upper 300mm layer)	<0.001% asbestos
	Restoration subsoil (below the upper 300mm layer)	<0.1% asbestos

5.6 As can be seen from the summary in the table above, the asbestos fibre concentration limit which is set and agreed with the EA for the soil to be used in the restoration of Maw Green and Welbeck landfill sites below the upper 300mm topsoil layer is <0.1% by weight of asbestos fibres. This concentration limit is the same or higher than the acceptance criteria for asbestos fibres for soils accepted for treatment

at the STFs. It is anticipated that the same limits will be agreed with the EA and set for use in the restoration of Daneshill Landfill Site. There are no default regulatory requirements for the storage and placement of these restoration soils to be carried out in an enclosed building, or to be covered, or to be subject to specified emission control procedures. Appropriate emissions control measures are implemented by the operator based on site and activity specific risk assessments.

5.7 Similarly, the EA accept in the DH and MG EPs and at paragraph 38 of their Rule 6 Statement dated 22 January 2024 that the storage of screened waste (soil) not impacted with asbestos shall be stored outside in bays or in a building. The EA state (paragraph 38 of the Rule 6 Statement) that once the soils have been visually inspected and tested to ensure levels of asbestos are below the hazardous threshold (ie <0.1% by weight asbestos), there is no requirement to keep these soils within the building (though it may be convenient to do so). The threshold for asbestos concentrations in soil at which the EA consider that external storage is acceptable is the same as the acceptance limit for unbound chrysotile asbestos fibres for wastes accepted at the STFs for treatment. While these soils will contain ACMs, the levels of free fibres are the same (and lower for non-chrysotile forms of asbestos) as those which the EA accept can be stored outside without any unacceptable risk. No risk based justification is provided by the EA for the need to store ACM contaminated soils with non-hazardous concentrations of asbestos fibres inside an 'enclosed' building.

5.8 While the use of mechanical screeners for the size separation of soil fractions prior to handpicking does not appear to be consented in the EPs reviewed as listed in Table 5, the use of mechanical screeners are not a '*novel process for the remediation of asbestos contaminated soil*' as described by the EA at paragraph 90 of the Rule 6 Statement dated 22 January 2024. Mechanical screeners (operated under EPs for mobile plant) are used routinely in the remediation of contaminated sites. Most contaminated sites which have been subject to historical industrial use include the presence of free fibres and ACMs in the land. During remediation it is commonplace for such screens to be used to separate the excavated materials into size fractions followed by appropriate treatment and/or disposal of the separated materials. This can include handpicking in cabins located on the sites being remediated after the size

separation of the excavated materials. Appropriate controls are implemented as specified in the mobile plant permits and associated Deployment Forms. Indeed, these types of screening activities are typical of the ones included in the research on the release of fibres from soils carried out many years ago and as discussed by Simon Coles in his PoE.

5.9 The EA acknowledge at paragraph 179 of their Rule 6 Statement dated 22 January 2024 that remediation activities are undertaken by mobile treatment plant to remediate existing contaminated soils in situ at the point of contamination. The EA suggest that the standards of control applied to mobile plant, temporary operations are lesser than those that should be applied to permanent facilities located in Installations. I am not aware that this has ever been the case, for example, for the emissions standards that are regarded as acceptable for the release of asbestos fibres to air. The same emission threshold standards are applied for all treatment methods for asbestos in soils, regardless of their duration.

5.10 Inert wastes are defined based on the Landfill Directive and are described in the guidance at gov.uk³ for inert waste landfills as:

‘Waste that does not undergo any significant physical, chemical or biological transformations.

Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter that it comes into contact with, in a way likely to cause environmental pollution or harm to human health.

The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must:

be insignificant

not endanger the quality of surface water or groundwater’.

³ <https://www.gov.uk/guidance/landfill-operators-environmental-permits/landfills-for-inert-waste>

- 5.11** Inert wastes deposited in inert waste landfill sites must contain contaminant concentrations below specified waste acceptance criteria (WAC) limit values for inert waste set out in Section 2.1.2.1 of the Council Decision Annex⁴ (CD1/V). There is no asbestos fibre concentration limit specified in the WAC for inert waste. The only specified criteria for asbestos in inert waste therefore is that the asbestos content of the waste must be below the criteria that results in classification as hazardous waste. The threshold for the asbestos content of waste for classification as hazardous waste is an asbestos fibre content >0.1% by weight or the presence of ACMs⁵ (CD1/X). This asbestos fibre concentration limit for inert waste of ≤0.1% by weight is the same asbestos fibre limit as that set for chrysotile asbestos fibres in the acceptance criteria for soils for treatment at the STFs and it is higher (ie less constrictive) than the acceptance criteria applied at the STFs for other types of asbestos fibres. Based on the asbestos fibre content, the soils which it is proposed are accepted at the STFs comprise inert waste. Ignoring the potential presence of any other chemical contaminants, the soils are classified as hazardous waste solely due to the presence of the ACMs, which comprise bound asbestos and not free fibres.
- 5.12** Controls on the emissions of asbestos fibres from inert wastes subject to crushing, screening, landfilling and associated storage and transportation activities are not specified by the EA in EPs for these activities and there is no overall default requirement for the storage and treatment of inert waste using enclosed plant and/or in buildings. The management of particulate emissions from the treatment and handling of inert wastes are specified subject to risk assessment which takes into account the sensitivity of the site setting and the nature of the waste treatment processes.
- 5.13** Suitable inert wastes arising as construction and demolition wastes are recovered where possible for use as aggregate. In order to encourage the development and marketing of aggregate materials produced from waste which could otherwise be used beneficially without damaging human health and the environment a Quality

⁴ COUNCIL DECISION of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC

⁵ Guidance on the classification and assessment of waste (1st Edition v1.2.GB). Technical Guidance WM3. October 2021. Section 3 (1, page 19)

Protocol was prepared by the Waste and Resources Action Programme (WRAP) and the EA in consultation with industry which sets out the processing and production criteria which, if they are demonstrated to have been met, results in outputs which will normally be regarded as having been fully recovered and to have ceased to be waste⁶ (CD1/Y).

- 5.14** The input waste which can be used to generate aggregates is specified in the Quality Protocol. There is no input or aggregate output concentration specification for asbestos in the Quality Protocol. It is specified that the input wastes generally must be classified as inert wastes and therefore, based on the threshold for the asbestos content of waste for classification as hazardous waste, the effective asbestos fibre limit for the input to the aggregate generation process is an asbestos fibre content <0.1% by weight with no ACMs present. As above, for the general inert waste management processes, this is the same asbestos fibre limit as that set for chrysotile asbestos fibres in the acceptance criteria for soils for treatment at the STFs and it is higher (ie less constrictive) than the acceptance criteria applied at the STFs for other types of asbestos fibres. There is no overall default requirement for the storage and treatment of inert waste to generate recovered aggregates using enclosed plant and/or in buildings. The management of particulate emissions from the treatment and handling of inert wastes to generate aggregates are specified subject to risk assessment.
- 5.15** Simon Cole describes in Section 4 of his PoE the relevant guidance and risk assessment methods which are in place to determine the risks of release of airborne asbestos fibres as a result of the storage and handling of soils containing asbestos. These risk assessment methods are applicable to activities for the management of inert waste as described above. Simon Cole applies the risk assessment methods to the proposed asbestos segregation activities at Daneshill and Maw Green and concludes (Section 8) that the predicted level of risk resulting from the emission of asbestos fibres taking into account the proposed activities and control measures is so low as to be of negligible consequence (i.e. insignificant).

⁶ Quality Protocol. Aggregates from inert waste. End of waste criteria for the production of aggregates from inert waste. WRAP October 2013.

- 5.16** Accordingly, there is no need or justification for the application by the EA of additional control measures for the proposed activities at the STFs compared with the approach taken to the risk based assessment and application of control measures to other comparable activities.

Controls applied at other sites undertaking similar activities

- 5.17** Activities for the screening and removal of asbestos from wastes contaminated with asbestos are carried out at a number of facilities in England which are the subject of EPs and regulation by the EA. A review has been carried out of the controls on emissions imposed by the EPs for similar activities to those proposed for Daneshill and Maw Green. A comparison of the treatment activities and the proposed and required emission controls for the Daneshill and Maw Green STFs with other, similar, consented activities is set out in Table 5 of this PoE and a summary is provided in Table 6.
- 5.18** The information reviewed shows that there is an inconsistent application by the EA of the requirements for enclosure of different stages of the treatment of soils contaminated with ACM. Some EPs, such as the V010 EPs issued by the EA for DH and MG include requirements for a substantial degree of enclosure, including for the stockpiling of wastes awaiting treatment whereas other EPs (such as those issued for the soil treatment facilities at Redhill Landfill Site and Cornet's End) consent the external storage of soils contaminated with ACMs and externally located cabins for handpicking.

6. The requirements of BAT and other relevant legislation

The Industrial Emissions Directive, BAT and BREF

- 6.1** The legislative framework for environmental permitting is provided by European Union Directive 2010/75/EU on industrial emissions (the Industrial Emissions Directive or IED) (CD1/A) and the Environmental Permitting Regulations 2016 (EPR) (CD1/B) (not EPR 2010 as the EA reference in the DD for the DH V009 EP). Article 11 of the IED requires that all appropriate preventive measures are taken against pollution, best available techniques are applied and that no significant pollution is caused. If the installation complies with the IED then Article 5 requires the competent authority to grant a permit.
- 6.2** The EPR define pollution as any emission resulting from human activity which may be harmful to human health or the quality of the environment, cause offence to a human sense, result in damage to material property, or impair or interfere with amenities or other legitimate uses of the environment. The EPR require the regulator to exercise its functions to achieve a high level of protection of the environment taken as a whole by, in particular, preventing, or where that is not practicable, reducing emissions into the air, water and land. The regulator must exercise its functions so as to encourage the application of emerging BAT as defined in Article 3 of the IED.
- 6.3** In addition to the application of BAT, Article 11 of the IED states that:

‘Member States shall take the necessary measures to provide that installations are operated in accordance with the following principles:

(a) all the appropriate preventive measures are taken against pollution;

(b) the best available techniques are applied;

(c) no significant pollution is caused;

(d) the generation of waste is prevented in accordance with Directive 2008/98/EC [the Waste Framework Directive];

(e) where waste is generated, it is, in order of priority and in accordance with Directive 2008/98/EC, prepared for re-use, recycled, recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;

(f) energy is used efficiently;

(g) the necessary measures are taken to prevent accidents and limit their consequences;

(h) the necessary measures are taken upon definitive cessation of activities to avoid any risk of pollution and return the site of operation to the satisfactory state defined in accordance with Article 22'.

6.4 Annex III of the IED sets out criteria for use by Members States for determining BAT and specifically includes:

'the furthering of recovering and recycling of substances generated and used in the process and of waste, where appropriate...;

the nature, effects and volume of the emissions concerned...;

the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it'.

6.5 The concept of what constitutes BAT must therefore also have regard to the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.

6.6 In accordance with Article 13 of the IED Best Available Technique Reference Documents (BREFs) are developed and regularly reviewed and updated through a formalised process which is overseen by the European IPPC Bureau. The

development and review of BREFs is carried out by a forum composed of representatives of Member States, the industries concerned and non-governmental organisations promoting environmental protection. The BREFs set out the 'Best Available' techniques and standards in the industry across Europe as summarised in Regulation 13(2) of the IED.

'2. The exchange of information shall, in particular, address the following:

(a) the performance of installations and techniques in terms of emissions, expressed as short- and long-term averages, where appropriate, and the associated reference conditions, consumption and nature of raw materials, water consumption, use of energy and generation of waste;

(b) the techniques used, associated monitoring, cross-media effects, economic and technical viability and developments therein;

(c) best available techniques and emerging techniques identified after considering the issues mentioned in points (a) and (b)'.

6.7 The BAT Conclusions (BATc) that are derived through this process then must be implemented in all IED industrial facilities throughout Europe covered by each relevant BREF within a specified timescale. In this way the IED and BREF process seeks to achieve a 'level playing field' in terms of the operating techniques and emissions providing consistent environmental protection standards within industries carrying out the activities covered by the IED throughout Europe. The current Waste Treatment BREF and WT BATc (CD1/Z) documents were published in 2018.

6.8 The current BREF and BATc documents as well as the IED comprise European legislation and guidance. A new UK BAT regime is beginning to be implemented with four industry sectors identified as the first to undergo this review process. These sectors do not include the waste management sector. For all other industry sectors, including the waste management sector, existing EU BATc continue to have effect in the UK through the EU Withdrawal Act 2018.

- 6.9** Neither the WT BREF nor the WT BATc refer specifically to the treatment of soils or other wastes contaminated with asbestos. Asbestos in the form of ‘suspended particles, fibres’ is identified as a ‘polluting substance’ in the list at Annex II of the IED.
- 6.10** Techniques for the treatment of excavated contaminated soil are discussed in Section 5.6 of the WT BREF. The treatment techniques discussed depend, as would be expected, on the nature of the contaminants present in the soil and include thermal desorption, soil washing (which includes reference to the use of screening to remove debris), vapour extraction, solvent extraction and biodegradation. There is no discussion of the removal of asbestos from soil by the use of screening and/or handpicking. The treatment of waste asbestos is discussed in section 5.8.4 of the WT BREF but this is in reference to the shredding and mixing of material prior to thermal treatment. No specific emission control measures are referenced for these shredding and mixing processes.
- 6.11** Similarly, there are no techniques described in the WT BATc for the removal of asbestos from soil by the use of screening and/or handpicking. The general BAT for the prevention or minimisation of emissions of polluting substances to air must therefore be reviewed to determine the techniques which comprise BAT for the proposed activity.

EA Guidance

- 6.12** The main EA guidance document for the operation of Installations is set out in ‘*Chemical waste: appropriate measures*’ which comprises EA guidance for regulated facilities with an environmental permit to treat or transfer chemical waste and includes activities for the treatment of contaminated soil⁷ (CD1/T). This guidance reflects the WT BATc requirements and therefore sets out similar control measures to those described in the WT BATc. As for the WT BREF and the WT BATc, there is no specific guidance for treatment processes comprising the segregation of ACMs from contaminated soil. The appropriate measures for emissions control including dust

⁷ <https://www.gov.uk/guidance/chemical-waste-appropriate-measures-for-permitted-facilities>

and particulates are set out in Section 6 of the guidance and reflect directly the BATc techniques.

- 6.13** In the consultation on the appropriate measures guidance prior to its implementation⁸ (CD1/S) it is stated that:

‘Currently, relevant measures and standards for permitted facilities that take chemical waste for treatment or transfer are set out in published technical guidance note EPR 5.06 Guidance for the recovery and disposal of hazardous and non-hazardous waste (May 2013). The proposed guidance, which is being consulted on, will replace this guidance note and will be available as web guidance on the gov.uk website.’

- 6.14** The appropriate measures guidance is therefore that which is applicable to the proposed development rather than EPR 5.06.

- 6.15** In the EA DD refusing to grant the variation for the asbestos segregation activities in the DH V009 EP (CD3/1), it is stated on page 9 that:

‘Relevant appropriate measures should be used as identified in Sector Guidance EPR S5.06 “Guidance for the Recovery of Hazardous and Non-Hazardous Waste S5.06 and supplemented by document “Hazardous Waste Soil Treatment”’.

- 6.16** As stated above, guidance S5.06 is withdrawn and no reference was made to the appropriate measures guidance. The other guidance document ‘Hazardous Waste Soil Treatment’ is not a publicly available document and was not available nor had it been seen by the applicant or its advisers. I was not aware of and I had not seen this guidance document despite my active involvement in the waste industry including my membership of the ESA Waste Regulation Group and my receipt and review of daily updates from the DEFRA and EA gov.uk guidance web site of information on any changes and updates to guidance and regulation. Despite several requests by FCC

⁸ <https://www.gov.uk/government/consultations/appropriate-measures-for-permitted-facilities-that-take-chemical-waste/public-feedback/appropriate-measures-for-facilities-that-accept-chemical-waste-summary-of-consultation-responses> /

and its advisers for a copy of this document, it was not provided to them by the EA until it was provided through the Planning Inspectorate as part of the Appeal process on 28 November 2023 (CD1/U).

- 6.17** The DDs for the EA decisions to issue the DH V010 EP (CD3/2) and the MG V010 EP (CD3/3) refer only to the Chemical Waste Appropriate Measures Guidance and do not refer to S5.06 or the internal EA document.
- 6.18** It is clear that the Hazardous Waste Soil Treatment document referred to by the EA in the DD for the DH V009 EP decision is an internal document and is not any form of guidance which the applicant could have made reference to. The document provided in November 2023 is entitled 'Hazardous Waste Soil Treatment – Work In Progress'. This Work In Progress (WIP) document clearly does not constitute guidance which should be referenced by a regulator. I note that this WIP document also is referred to at paragraph 16 of the EA's Rule 6 Statement dated 22 January 2024 (CD5/2).
- 6.19** The WIP document is undated and refers to the withdrawn S5.06. No reference is made to the current Chemical Waste Appropriate Measures Guidance and its purpose and issue status is not explained. It is my opinion that the WIP document is a very high level introduction to soil treatment intended to explain the rudimentary aspects of the treatment options to those who may not be familiar with them. The text is very general and in my opinion the document is not suitable as a basis on which to make regulatory decisions. Given the reference in the document to S5.06 it seems clear to me that the WIP document is for information only and S5.06 was the leading guidance at the time that the WIP document was submitted. As stated above, S5.06 was replaced by the Chemical Waste Appropriate Measures Guidance when it was published in November 2020.
- 6.20** As explained in paragraph 3.7 of this PoE, in response to a request for information under the Environmental Information Regulations, FCC were provided by the EA with a number of emails internal to the EA relating to the decision making process for the DH V009 EP. A series of emails during November 2021 (CD9/2/I and CD9/2/J) show that the WIP document was an incomplete internal note. In an email dated 9

November 2021 the permitting officer managing the Daneshill application requests the following of the technical specialist in the EA:

'A couple of years ago you forwarded me a couple of documents on asbestos transfer and treatment. One was the storage and transfer quick guide available on the Intranet another was a short document relating to best practice focused on soil treatment sites - informal BAT. I can't find this second document, It may not have been published. If you can think of the one I mean do you have a copy?'

6.21 The response from the technical specialist dated 10 November 2021 states:

'You may be referring to the attached. I started a specific guidance note for soil treatment and appropriate measures but I have been involved in permit review and that work is my only real focus at the moment so the specific guide will have to wait. Since we first started looking at soil remediation where the soil was impacted with asbestos fragments the situation has become more complicated..... This is still an evolving process but I do not have time at the moment to devote to it....'

6.22 The document which was provided is likely to comprise the WIP document (although the attachment referred to in the email was not provided with the emails). If that is the case, it confirms my view that the WIP document does not comprise up to date, peer reviewed, robust information and therefore is not suitable as a basis for regulatory decisions.

6.23 None of the regulatory or published guidance documents include any specific measures related to the techniques and appropriate controls related directly to the treatment of soils to remove ACMs. Similarly, there is no public document which considers the effectiveness of the alternative techniques for ACM removal and for emissions control. Despite all the monitoring data for similar techniques to those proposed for Daneshill and for Maw Green, the EA did not provide any comment on the results themselves. The EA stated that they did not consider it appropriate to

review the monitoring data provided as it was for other facilities, but no clear explanation for this view has been provided.

The waste hierarchy

6.24 The Waste (England and Wales) Regulations 2011 (CD1/D) implements the Waste Framework Directive in England. Regulation 12 requires the implementation of the waste hierarchy and states that:

'12. (1) An establishment or undertaking which imports, produces, collects, transports, recovers or disposes of waste, or which as a dealer or broker has control of waste must, on the transfer of waste, take all such measures available to it as are reasonable in the circumstances to apply the following waste hierarchy as a priority order—

(a) prevention;

(b) preparing for re-use;

(c) recycling;

(d) other recovery (for example energy recovery);

(e) disposal.

(2) But an establishment or undertaking may depart from the priority order in paragraph (1) so as to achieve the best overall environmental outcome where this is justified by life-cycle thinking on the overall impacts of the generation and management of the waste.

(3) When considering the overall impacts mentioned in paragraph (2), the following considerations must be taken into account—

(a) the general environmental protection principles of precaution and sustainability;

(b) technical feasibility and economic viability;

(c) protection of resources;

(d) the overall environmental, human health, economic and social impacts.'

Duty to separate hazardous wastes

6.25 The Hazardous Waste (England and Wales) Regulations 2005 (CD1/E) includes a duty for the separation of hazardous wastes. Regulation 20 states that:

'20. (1) This regulation applies to the holder where—

(a) the hazardous waste has been mixed other than under and in accordance with a waste permit or a registered exemption, whether by the holder or a previous holder; and

(b) separation is both—

(i) technically and economically feasible; and

(ii) necessary in order to comply with the Waste Directive conditions.

(2) The holder must make arrangements for separation of the waste to be carried out in accordance with a waste permit or registered exemption as soon as reasonably practicable.

(3) In this Regulation "separation" means separation of a waste from any other waste, substance or material with which it has been mixed.'

Control of Asbestos Regulations 2012

6.26 The prevention or minimisation of the emissions of asbestos fibres also is a requirement of the Control of Asbestos Regulations 2012 (CAR 2012) (CD1/F). Simon Cole explains in Section 4 of his PoE that the CAR-SOIL™ guidance (CD1/Q) was specifically developed by members of the Joint Industry Working Group on Asbestos in Soil, and Construction & Demolition Materials (JIWG) to provide an

interpretation of the CAR 2012 specific to work with asbestos in soil as opposed to work with asbestos in buildings which is the focus of the guidance issued by the Health and Safety Executive. Simon Cole emphasises that the guidance recognises that asbestos contamination can be found at brownfield sites and that the nature and degree of potential risk from exposure to asbestos fibres when working with asbestos contaminated soil in the external environment is significantly lower than that which might be expected when working with ACMs internally in buildings.

6.27 Regulation 11 (1) of CAR 2012 states that:

‘11. (1) Every employer must—

(a) prevent the exposure to asbestos of any employee employed by that employer so far as is reasonably practicable;

(b) where it is not reasonably practicable to prevent such exposure—

(i) take the measures necessary to reduce exposure to asbestos of any such employee to the lowest level reasonably practicable by measures other than the use of respiratory protective equipment,’

Regulation 16 of CAR 2012 states that:

‘16. Every employer must prevent or, where this is not reasonably practicable, reduce to the lowest level reasonably practicable the spread of asbestos from any place where work under the employer’s control is carried out.’

6.28 The prevention and minimisation of emissions of asbestos fibres therefore are regulated both by the EA through the EPR and by the Health and Safety Executive (HSE) through CAR 2012.

7. Compliance of the proposed activities with BAT and other relevant legislation

The BREF, BAT and Environment Agency guidance

- 7.1** As explained in Section 6 of this PoE, neither the WT BREF nor the WT BATc refer specifically to the treatment of soils or other wastes contaminated with asbestos and there are no techniques described in the WT BATc for the removal of asbestos from soil by the use of screening and/or handpicking. The general BAT for the prevention or minimisation of emissions of polluting substances to air must therefore be reviewed to determine the techniques which comprise BAT for the proposed activity.
- 7.2** In addition to the specific techniques for the controls of emissions to air which are discussed further below, there are a number of general BATc measures which relate to management systems and procedures, staff competence and training, management plans for accidents, odour and noise, and a number of other overarching systems and procedures including surface water management and monitoring of discharges to water. The application of these wider BATc measures are identified in detail in the Treatment Process Description and BAT reviews undertaken and submitted as part of the permit application processes, 982-CAU-XX-XX-RP-V0306.A0.C3 BAT final NDM response July 2021 for Daneshill (CD2/2/G/8) and Treatment Process Description & BAT Review - 5193-CAU-XX-XX-RP-V0312.A0.C1 BAT for Maw Green (CD2/3/F) and which formed part of the permit application documentation for the bioremediation and asbestos removal activities. In the EA DDs there have been no adverse comments or concerns raised with regard to the generic BAT techniques, and these techniques relate also to the other soil treatment activities which have been consented in the EPs issued for Daneshill and Maw Green. It is therefore assumed that the EA accept that these aspects of BAT are appropriate and acceptable for the proposed activities.
- 7.3** The BATc which may relate to the controls on the potential for the emissions of asbestos fibres to air are BAT 8 (monitoring channelled emissions to air), BAT 14 (reduce diffuse emissions to air), BAT 25 (mechanical treatment of waste) to reduce emissions to air of dust, BAT41 (physico-chemical treatment of solid and/or pasty waste) emissions to air. Each of these techniques will be implemented as part of the proposed activities described in Table 1 and summarised in Table 2 of this PoE. All

of the techniques that will be implemented at the different stages of the proposed activities clearly comprise BAT and their collective implementation will prevent or minimise the emissions of asbestos fibres and result in the generation of a treated soil and hardcore both of which can be recovered and reused rather than disposed of in a landfill site as hazardous waste. The proposed activities will include a comprehensive regime of monitoring in order to provide robust evidence that the management and control techniques being implemented are and continue to be effective and control the potential risks to levels which are protective of human health and the environment as specified by the EA.

7.4 As explained in Section 6 of this PoE, the main EA guidance document for the operation of Installations is set out in ‘Chemical waste: appropriate measures’ (CD1/T). As this guidance reflects the WT BATc requirements it sets out similar control measures to those described in the WT BATc and these are listed in Table 1. As for the WT BREF and the WT BATc, there is no specific guidance for treatment processes comprising the segregation of ACMs from contaminated soil in the EA guidance. The appropriate measures for emissions control including dust and particulates are set out in Section 6 of the guidance and reflect directly the WT BATc techniques and therefore the summary provided for BAT in Table 2 is relevant also to the EA appropriate measures guidance.

7.5 It is demonstrated in the PoE of Simon Cole, based on the extensive monitoring database comprising records of the emissions of asbestos fibres to air during activities to remove ACMs, that the application of the proposed emissions controls during the proposed activities (including stockpiling, mechanical screening and handpicking) will prevent or minimise the emissions of asbestos fibres and therefore are compliant with BAT, the IED and the EA guidance. The assessment presented by Simon Cole demonstrates also that there is confidence that the proposed activities will be operated in compliance with the emissions limits set by the EA for asbestos fibres in air in the DH V010 and MG V010 EPs.

The waste hierarchy

7.6 The proposed activities comply with the waste hierarchy in that the proposed treatment process achieves the recovery and reuse of soils contaminated with

asbestos which otherwise would remain a hazardous waste for which the only management option is disposal to landfill. The recovered soils are used in the restoration of the adjacent landfill sites at Daneshill and Maw Green. As explained in paragraph 4.31 of this PoE, the asbestos screening activities which were operated at Maw Green and Edwin Richards Quarry between January 2022 and 5 July 2023 facilitated the recovery and re-use of a total of 116,135.41t of soils comprising 99.96% of the initial contaminated soil volume delivered to the STFs for treatment to remove the ACMs. Without treatment, all this soil would otherwise have been disposed of at a hazardous waste landfill cell. In addition the oversize materials removed by the screening process comprising large stones, bricks and lumps of concrete are husbanded and used on the sites as hardcore to form the surface of haul roads and other infrastructure.

- 7.7** It is confirmed by the monitoring data presented and reviewed in the PoE of Simon Cole that given the proposed control techniques and emissions monitoring which will be implemented as part of the proposed activity that there will be no overall adverse environmental or health impacts as a result of the proposed activities therefore there is no reason why the activities as proposed should not be consented in order to achieve the waste management benefits in accordance with the waste hierarchy.

Duty to separate hazardous wastes

- 7.8** The waste which would be received for treatment by the proposed activities typically comprises mixed construction and demolition waste which includes soils mixed with ACMs. Even if some segregation activity has been implemented at the site of arising of the waste, unseparated ACMs remain mixed with the soils meaning that the whole of the waste load is classified as hazardous waste unless and until the ACMs are removed and any residual free fibres in the soil remain below the hazardous waste threshold. The proposed activities achieve the separation of the mixed wastes in a manner which is demonstrably technically and economically feasible.

Control of Asbestos Regulations 2012

- 7.9** The local authority, HSE and the UKHSA (formerly PHE) were consultees during the applications for the variation and issue of the DH and MG V090 EPs. In the DD for

the DH variation application (CD3/1), it is stated (page 11) that no comments were received from these organisations. In the DD for the MG V009 EP (CD3/4) it is stated that a response was received only from the UKHSA which states that the UKHSA has no significant concerns regarding the risk to the health of the local population from the installation 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.

- 7.10** It is notable that the HSE which is the organisation with responsibility for the implementation of the CAR 2012 have not raised any concerns regarding the operations as proposed for Daneshill and Maw Green.

8. The need for the proposed activities and the overall environmental benefits of the recovery of soil

8.1 The objective of the proposed activities is to treat soil contaminated with ACMs in order that the soil can be recovered for use rather than disposal. If the ACMs present in the soil are not removed, the soil will remain classified as a hazardous waste and the only disposal route is in a hazardous waste landfill cell. The soils which will be treated at the proposed STFs generally will contain only a limited proportion of ACMs by weight and therefore the presence of the ACMs directly limits the potential for the use of the substantial majority of the overall weight of the waste (ie the soil component) unless the ACMs are removed. It is self-evident that there are considerable environmental benefits to achieving the removal of the ACMs and the reuse of the soil rather than its disposal which would utilise valuable hazardous waste landfill void.

8.2 Furthermore, as explained in Section 6 of this PoE, there is an obligation to separate mixed hazardous wastes which would include mixed ACMs and soils in the Hazardous Waste (England and Wales) Regulations 2005 and an obligation to apply the waste hierarchy, which has disposal as the least preferred management method, in the Waste (England and Wales) Regulations 2011.

8.3 If the proposed segregation activities are not carried out, hazardous waste landfill void will be used for the disposal of the soil waste contaminated with a very small amount of ACMs (<99% by weight based on the evidence presented in paragraph 4.31 of this PoE). Failure to segregate and remove the ACMs from the waste soils will not meet the obligation to separate hazardous wastes or the obligation to implement the waste hierarchy.

8.4 The protection of soil resources is a fundamental aspect of a number of the Government environmental policies and strategies. The Environmental Improvement Plan 2023⁹ (EIP 2023, CD1/G) is the current review of the progress towards the achievement of the Government 25 Year Environment Plan published in 2018¹⁰

⁹ <https://www.gov.uk/government/publications/environmental-improvement-plan>

¹⁰ <https://www.gov.uk/government/publications/25-year-environment-plan>

(CD1/H) and it includes a number of strategies and targets for the achievement of the goals. The protection and improvement of soil health is a key component of the plans and the proposals include a reduction of the quantity of soils which are disposed of to landfill. The prevention of valuable soil resources from being sent to landfill is identified as an objective within Goal 6 of the EIP 2023 ‘Using resources from nature sustainably’ in Section 4 which is ‘Improving and protecting soil health’ and it is stated (page 181) in the EIP 2023 that:

‘In 2016, soil made up 58% of material sent to landfill in the UK. In construction projects, the careful re-use of soil can avoid soil being designated a waste material and to bring it back to beneficial use, helping create more green spaces and increasing biodiversity. We are working to:

- In 2023, publish a revised Code of Practice for the sustainable use of soil on construction sites, which will help to reduce the amount of soil sent to landfill.*
- Begin development of a Soil Re-Use and Storage Depot scheme to help prevent soil that would otherwise be classified as waste going to landfill, and encourage remediation and re-use of soil. We will start piloting this by 2026.’*

8.5 The need to use all opportunities to treat soil for its beneficial use rather than to dispose of it to landfill is therefore a key part of the 25 Year Environment Plan and the EIP 2023 and the proposed activities at the STFs would provide a direct contribution to that objective.

8.6 The importance of soils to the environment is emphasised in the DEFRA 2009 document ‘Safeguarding our Soils. A Strategy for England’ ¹¹(the Soil Strategy) (CD1/I) and reiterated in the 2023 update ‘State of the Environment Soil Report’ ¹² (CD1/J). Chapter 7 of the Soil Strategy relates to ‘Dealing with our legacy of contaminated land’ and includes objectives for less reliance on ‘dig and dump’

¹¹ <https://assets.publishing.service.gov.uk/media/5a795b71ed915d0422067beb/pb13297-soil-strategy-090910.pdf>

¹² <https://www.gov.uk/government/publications/state-of-the-environment/summary-state-of-the-environment-soil>

techniques that involve disposing of large amounts of contaminated soils in landfill sites.

- 8.7 It is clear in these and other policies, objectives and strategies that treatment techniques such as those proposed at Daneshill and Maw Green for the removal of contaminants from soil in order to remediate the soil for recovery and reuse are fully supported and that the proposed operations will contribute directly to achieving an overall environmental benefit for the natural environment as a result of the recovery and reuse of the soils.

Overall environmental benefits

- 8.8 As explained in paragraphs 6.4 and 6.5 of this PoE, Annex III of the IED makes it clear that the determination of what treatment technique constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.
- 8.9 In order to achieve the benefits of the removal of ACMs from contaminated soils, the use of a mechanical screener is proposed. As explained in paragraphs 4.20 to 4.23 of this PoE, the use of a mechanical screener results in a reduced time to complete the treatment of a fixed quantity of contaminated soil to approximately 20% to 40% of the time taken if no mechanical screener is used. As a result of the mechanical screening, while the screener itself uses fuel, the overall reduction in treatment time results in a reduction in overall fuel use, hence overall carbon dioxide emissions, as described in the information provided by Provectus at Appendix E to this PoE. The information provided at Appendix E includes detail of the use of fuel by mobile plant comprising excavators, the mechanical screener, dump trucks and the generator which provides electrical power to the picking station. The results are summarised below.

Method of Treatment	Fuel Use (litres per tonne of soil)	% fuel requirement due to pre-screening compared with no pre-screening
Handpicking only - cohesive soils	5.24	-

Handpicking only - granular soils	3.41	-
Soil screening and handpicking - cohesive soils	1.98	38%
Soil screening and handpicking - granular soils	0.85	25%

The data show that the use of a mechanical screen as part of the overall treatment process reduces the overall fuel use to between 25% to 38% of that needed for unscreened soil depending on the nature (cohesiveness) of the soil (this is a reduction of between 75% and 62%). This reduction is as a consequence of the shorter overall time needed for treating every tonne of soil contaminated with ACMs.

- 8.10** There are therefore clear overall environmental benefits of using the mechanical screening step as part of the treatment process.
- 8.11** The monitoring data presented and reviewed by Simon Cole in his PoE demonstrates that the application of enclosure and air extraction and filtration to the screener (should it be possible in practice to apply this) would achieve no overall material reduction in the emissions of asbestos fibres and therefore provide no overall reduction in risks. The application of enclosure and air extraction and filtration to the screener (should it be possible in practice to apply this) would result in an overall increase in the environmental impacts as a result of the energy use associated with the need to extract and filter air throughout the duration of the treatment process.
- 8.12** The monitoring data presented and reviewed by Simon Cole in his PoE demonstrates that the location of the treatment activities (stockpiling, mechanical screening and handpicking) inside a building would achieve no overall material reduction in the emissions of asbestos fibres compared with the application of the control techniques as proposed in the external environment [and therefore would provide no overall reduction in risks]. If it is necessary to carry out the storage and treatment activities inside a building, there are a number of environmental, practical and financial consequences as described by Jon Owens of Provectus in the Technical Note provided at Appendix E and summarised below.

- 8.13** *Environmental.* The construction of an external, temporary soil treatment facility on impermeable surfaced treatment pad areas to facilitate the restoration of landfill sites generally is supported by the local planning system. Temporary developments of this type generally are supported as there is no permanent infrastructure or buildings and results in the benefit that the restoration of the landfill is expedited.
- 8.14** The construction of a building (typically 7.5m to 10m high) has a much higher potential to result in adverse landscape and visual impacts compared with external mobile plant and stockpiles (typically 3m high).
- 8.15** The construction of such a substantial building at each STF including the necessary foundations, ground infrastructure and internal lighting will result in environmental disbenefits due to the carbon emissions and embedded carbon in the materials used to construct each building. As explained below, the size of a suitable building would need to be in the order of 96m long, 40m wide with a height of 7m to the eaves and 10m to the apex (Appendix E). A report has been prepared by Hydrock based on its expertise in Life Cycle Assessment (LCA) modelling to assess the embodied carbon emissions, at an outline stage, associated with constructing a large steel-fabricated shed to house the asbestos soil processing activities. A copy of the report is provided at Appendix F to this PoE. The assessment has been carried out based on RICS methodology. Based on the assumptions used for the design of the building, the modelling results show the total embodied carbon emissions are approximately 302 kgCO₂/m². This value includes a concrete platform as the base. The base and foundations for a building will be far more substantial than an external impermeable surface. An external impermeable surface need not be constructed of concrete, however as an illustrative comparison it is calculated in the report that the embodied carbon of an equivalent external concrete platform would be 110 kgCO₂/m², which is 36% of the embodied carbon for the building (62% saving). For a building footprint of 40m x 96m, this results in a calculated embodied carbon value of 737,280kg (737 tonnes) of CO₂ excluding the carbon embodied in the concrete base. Clearly, if an external impermeable pavement was constructed of an alternative material such as low permeability clay, the relative carbon benefit would be even greater.

- 8.16** It is noted in section 2.2 of the Hydrock report at Appendix F that guidance from HM Treasury on Green Construction points out that the most impactful strategy for reducing the embodied carbon of a building is challenging the root cause of the need to build it in the first place. As demonstrated in the PoE of Simon Coles and summarised in this report, carrying out the proposed treatment inside a building is not necessary and achieves no material environmental benefits in terms of risks to health or the environment. Clearly, the construction of a building in order to carry out the work inside a building would result in a significant overall environmental dis-benefit as a result of the energy (carbon) used.
- 8.17** *Practical.* The size of a building needed to contain the stockpiles and treatment areas as well as to include sufficient room for the safe movement of plant and workers is estimated to be in the order of 96m long, 40m wide with a height of 7m to the eaves and 10m to the apex (Appendix E).
- 8.18** The STF sites are located adjacent to landfill sites, and the STF location at Maw Green is located partially over a completed and capped landfill area. Accordingly, there are practical uncertainties over the geotechnical suitability of the ground to construct a suitably sized building.
- 8.19** *Financial.* The STFs need to be located close to the location in which the treated and recovered soil will be used. The Planning Act 2008 (CD1/K) limits the capacity of a hazardous waste treatment facility granted planning permission by the Local Planning Authority to <30,000t/yr. If the treatment capacity is greater than 30,000t/yr it is necessary to obtain a Development Consent Order which is a much more expensive and time consuming process which is rarely cost effective for a soil treatment facility such as those proposed. This capacity restriction places a cap on the revenue and margin that can be generated at a hazardous soil treatment facility.
- 8.20** It is explained in the letter from Provectus provided at Appendix E that unlike other hazardous wastes, the typical market price for the disposal and treatment of contaminated soils is far lower per tonne which significantly limits the scope of contaminants that can be treated for reuse in the restoration areas of the landfill.

- 8.21** It is further explained that unlike other types of commercial waste treatment operations, no long term commercial contracts can be entered into for the treatment of contaminated soils as they arise on a development specific basis rather than manufacturing waste which is generated continually from a manufacturing process. Accordingly there is a high degree of uncertainty in the source, suitability for acceptance for treatment and period of availability of contaminated soil inputs to a STF due to the short term period between construction projects encountering contaminated soil and then needing to dispose of it off-site. This means that there is a high degree of uncertainty in the feasibility for using a soil treatment facility as a means to create suitable soil for landfill restoration.
- 8.22** At Daneshill and Maw Green there is a need for the recovered soils to complete the restoration of the adjacent landfill sites. The need for the treatment facilities at each location will cease once the restoration of the sites are completed therefore each STF is a temporary one and its need is tied to the life of the restoration of the landfill. In order for the operation of a treatment facility to be cost effective, it must be possible to amortise any capital expenditure during the period of the temporary operation of the STF.
- 8.23** The estimated cost of the construction of a building to these dimensions assuming that standard foundations are appropriate is in the order of £500,000 exclusive of Value Added Tax (Appendix E). Given that the STF sites are located adjacent to landfill sites, and that Maw Green is located partially over a completed and capped landfill area, a more robust and costly foundation solution compared with a standard approach is likely to be needed to safely support a treatment building thus increasing the overall costs.
- 8.24** In addition to the environmental, practical and financial limitations associated with the construction of the building, if it is necessary to provide and operate air extraction and filtration to a building, this would result in a further overall increase in the environmental impacts as a result of the energy use associated with the need to extract and filter air throughout the duration of the storage and treatment processes.
- 8.25** It is stated in the letter from Provectus at Appendix E that neither Daneshill nor Maw Green have a business case that would support the costs of constructing a new

building for temporary use for producing restoration soil for use in the restoration of the landfills. It is stated that if a building was required for the treatment of ACMs in soils, then it is highly unlikely that the soil treatment facility could proceed.

- 8.26** In summary, the monitoring data presented and reviewed by Simon Cole in his PoE demonstrates that the application of the additional control measures required by the EA including in particular enclosure and air extraction and filtration to the screener (should it be possible in practice to apply this) and the location of all activities inside a building would achieve no overall material reduction in the emissions of asbestos fibres and therefore provide no overall reduction in risks. However there would be a significant overall environmental detriment as a result of the use of these additional measures and infrastructure. Accordingly the use of the additional techniques would be contrary to Annex III of the IED which states that the determination of what treatment technique constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.

9. Summary and conclusions regarding the reasons for refusal of the proposed activities

9.1 This Appeal comprises a conjoined Appeal regarding three Environmental Permits which is being considered at a single Inquiry. The three permit decisions which are being appealed are:

- An appeal against the decision of the EA (EA) to exclude the processing of asbestos contaminated soils from the varied Environmental Permit reference EPR/NP3538MF/V009 dated 9 December 2022 for Daneshill (the DH V009 EP). This is Appeal reference APP/EPR/636.
- An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/NP3538MF/V010 dated 29 September 2023 for Daneshill (the DH V010 EP). This is Appeal reference APP/EPR/651.
- An appeal against conditions imposed by the regulator-initiated variation of Environmental Permit EPR/BS7722ID/V010 dated 5 October 2023 for Maw Green (the MG V010 EP). This is Appeal reference APP/EPR/652.

9.2 The activities which are the subject of this appeal comprise, in summary, the treatment of soil contaminated with bound asbestos materials in order to provide uncontaminated soil that is suitable for use as a restoration material for the restoration of the adjacent landfill sites. Soils contaminated with any amount of asbestos containing materials (ACMs) including bound asbestos is automatically classified as a hazardous waste and can be disposed of only at a hazardous waste landfill site. Where the ACMs are removed, and there are no other contaminants which would result in the soil being classified as hazardous, or otherwise unacceptable, the soils can be recovered for use.

9.3 The removal of ACMs from contaminated soils on a picking line is carried out manually by trained operatives. The proposed activities include mechanical screening of the contaminated soils prior to handpicking. The purpose of the mechanical screening step is to separate the incoming material into different size fractions in order to make the subsequent handpicking process to remove the ACMs

more efficient as the ACMs are typically present predominantly in the mid-size screened fraction. This reduces processing time and consequently energy use for operating plant and equipment.

9.4 It is proposed that the storage and treatment activities take place outside on treatment pads close to the landfill sites. The details of the proposed activities and the emission control management measures that it is proposed will be implemented in order to prevent or minimise emissions of asbestos fibres to air are set out in Table 1 of this Proof of Evidence (PoE). These measures include in particular:

- Strict controls on the concentrations of free fibres in the incoming waste soils awaiting treatment (<0.1% chrysotile asbestos and <0.01% other types of asbestos fibres by weight in the incoming soil);
- Fixed and mobile spray systems with wetting agent added to the water used in all sprays to dampen the soils throughout the different stages of the treatment process;
- Covering of stockpiles with tarpaulins;
- The location of all activities on impermeable surfaces with enclosed drainage systems; and
- Monitoring and testing of asbestos fibre concentrations in air close to the operations to confirm the effectiveness of the measures throughout the operations together with boundary reassurance monitoring.

9.5 The Appellant is able to determine with confidence that the proposed measures will be effective in preventing or minimising the emission of asbestos fibres and that the concentrations of asbestos fibres in air will meet the criteria set by the EA as protective of human health because they have developed an extensive database of monitoring data obtained where similar activities are taking place and similar controls are being implemented. The data have been reviewed and assessed by Simon Cole in his PoE. Simon Cole concludes that the predicted level of risk for both sites is so low as to be of negligible consequence.

- 9.6** It is demonstrated on this basis that the proposed activities comply with Best Available Techniques (BAT).
- 9.7** In summary, the EA consider that in order to comply with BAT and the EA guidance the proposed activities must adhere to the following:
- The proposed mechanical screener activity should only be carried out using a ‘fully enclosed’ screener and conveyors with air extracted and filtered from the enclosure;
 - The fully enclosed mechanical screener should be located in a building;
 - All stockpiles of soils contaminated with asbestos should be subject to particulate and fibre management controls such as dampening or covering and the stockpiles should be located in a building; and
 - The closed picking station cabin should itself be located in a building.
- 9.8** The EA base their decision that the mechanical screener should be fully enclosed on the assumption that mechanical screening and other mechanical processes such as waste transfer between stockpiles and conveyors will result in the generation of additional free asbestos fibres and therefore increased risks to health. This assumption is not supported by the monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE.
- 9.9** The EA base their decisions also on the assumption that the proposed emission control measures proposed do not prevent or minimise the release of asbestos fibres from the soil and therefore result in increased risks to health. The monitoring database developed by FCC and Provectus and presented and assessed by Simon Cole in his PoE demonstrates that this is not the case.
- 9.10** In addition, the results of extensive market enquiries made on behalf of the Appellants have resulted in a failure to identify any mechanical screener available on the market which is fitted with covers and/or is wholly or partly enclosed. Accordingly a ‘fully enclosed’ mechanical screener with all dust emissions from the screening operations

directed to an active abatement system is not an 'available' technique and therefore cannot comprise BAT in any event.

- 9.11** There are no emission limits for asbestos fibres in air set in the Waste Treatment BAT Conclusions document (BAT-AELs) or in any guidance issued by the EA. The EA has identified in their decisions on the issue of the regulator-initiated variations for the Daneshill and Maw Green Environmental Permits that they consider that the appropriate emission limits for asbestos fibres in air are 0.1 fibres/ml from the mechanical screener and 0.01 fibres/ml at the site boundary. The Appellant agrees with and accepts these emission limits set by the EA and it is confirmed in the PoE of Simon Cole that the extensive monitoring database reviewed confirms that these limits can be met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.
- 9.12** The monitoring proposals for emissions from the asbestos treatment processes at the STFs are set out in the applications documents, namely the Emissions Management Plan for Daneshill (CD2/2/C) and the Dust and Emissions Management Plan for Maw Green (CD2/3/G)
- 9.13** The EA had sought in the V010 EPs for Daneshill and Maw Green to restrict the storage of soil impacted with asbestos awaiting treatment to no more than 150 tonnes at any one time. It is considered that there is no justified risk based reason to restrict the storage capacity to 150 tonnes. The proposed storage limits are set out in Tables 3 and 4.
- 9.14** The EA had sought in the V010 EPs for Daneshill and Maw Green to restrict the throughput of the treatment of soils impacted with ACMs to no more than 100 tonnes per day. This limit is unjustified by the EA and unreasonably restrictive. It equates to approximately 5 to 6 lorry loads of soil per day which is very low for the rate at which waste soils are generated during a typical development activity. The proposed treatment capacities are set out in Tables 3 and 4.
- 9.15** The relevant legislative framework for environmental permitting is provided by European Union Directive 2010/75/EU on industrial emissions (the Industrial

Emissions Directive or IED) and the Environmental Permitting Regulations 2016 (EPR). Article 11 of the IED requires that all appropriate preventive measures are taken against pollution, best available techniques (BAT) are applied and that no significant pollution is caused. If the installation complies with the IED then Article 5 requires the competent authority to grant a permit.

- 9.16** Annex III of the IED sets out criteria for use by Member States for determining BAT and specifically includes the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it. The concept of what constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of emissions on the environment and the risks to it.
- 9.17** It is demonstrated in the PoE of Simon Cole, based on the extensive monitoring database comprising records of the emissions of asbestos fibres to air during activities to remove ACMs, that the application of the proposed emissions controls during the proposed activities (including stockpiling, mechanical screening and handpicking) will prevent or minimise the emissions of asbestos fibres and therefore are compliant with BAT, the IED and the EA guidance. The assessment presented by Simon Cole demonstrates also that there is confidence that the proposed activities will be operated in compliance with the emission limits set by the EA for asbestos fibres in air in the DH V010 and MG V010 EPs.
- 9.18** The monitoring data presented and reviewed by Simon Cole in his PoE demonstrates that the application of the additional control measures required by the EA including in particular enclosure and air extraction and filtration to the screener (should it be possible in practice to apply this) and the location of all activities inside a building would achieve no overall material reduction in the emissions of asbestos fibres and therefore provide no overall reduction in risks. However there would be overall environmental detriment as a result of the use of these additional measures and infrastructure. Accordingly the use of the additional techniques would be contrary to Annex III of the IED which states that the determination of what treatment technique constitutes BAT must have regard to the need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.

9.19 In addition to compliance with BAT, the proposed activities to treat and recover for use the contaminated soils classified as hazardous waste and to avoid the need for their disposal to landfill is in accordance with and fully supported by the obligations to:

- comply with the waste hierarchy,
- comply with the duty to separate hazardous wastes;
- comply with the Control of Asbestos Regulations 2012;
- comply with the EA guidance document for the operation of Installations as set out in Chemical waste: appropriate measures;
- comply with the Government 25 Year Environment Plan and the 2023 Environmental Improvement Plan. Goal 6 of the Environmental Improvement Plan 2023 includes the objective of reducing the amount of soil sent to landfill; and
- comply with the DEFRA Soil Strategy.

9.20 The conditions and/or wording that are appealed against in these Appeals together with the amended wording requested are set out in Table 3 for Daneshill and in Table 4 for Maw Green.

TABLES

Table 1: Summary of the proposed controls for Daneshill and Maw Green treatment facilities (as in V009 of the EPs prior to EA variation to V010).

Note: The proposed controls for Daneshill are as applied for excluding additional controls in later proposals to the Environment Agency (including those in Schedule 5 responses etc).

The proposed controls for Maw Green are as applied for and operated under V009 of the Environmental Permit and prior to the issue of the Environment Agency initiated variation V010.

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
References given in the Grounds of Appeal for the documents to be approved	<ul style="list-style-type: none"> ● The EMP. Emissions Management Plan Nov 21-3982-CAU-XX-XX-RP-V-0307-AO-C3-EMP [<i>updated to incorporate the provision of spray rails on the input conveyors to the picking line</i>]. <p>Drawings:</p> <ul style="list-style-type: none"> ● 3982-CAU-XX-XX-DR-V-1803_S2_P07; DUST AND ASBESTOS MONITORING PLAN [EMP] ● 3982-CAU-XX-XX-DR-V-1807_S2_P04; SOILS TREATMENT PADS 1 / 2 / 3. SITE LAYOUT PLAN [EMP] ● 3982-CAU-XX-XX-DR-V-1810_S2_P02; SUPPRESSION SYSTEMS LOCATION FOR TREATMENTPADS 1 / 2 / 3. [Schedule 5 Response October 2021]. ● 3982-CAU-XX-XX-DR-V-1811_S2_P02; SUPPRESION SYSTEM SPRAY ARCS [Schedule 5 Response October 2021] ● 3982-CAU-XX-XX-DR-V-1812_S2_P02; EMISSIONS MONITORING PLAN FOR DUST, ASBESTOS AND VOC's. PADS 1 / 2 / 3 [October 2021] ● 3982-CAU-XX-XX-DR-V-1800-P02. 1000m SENSITIVE RECEPTOR PLAN [EMP] 	<ul style="list-style-type: none"> ● Environmental Setting and Installation Design - Addendum - 5193-CAU-XX-XXRP-V-0309.A0.C2 ESID final ● Activities & Operating Techniques Report - 5193-CAU-XX-XX-RP-V-0311.A0.C1 Op Tech final ● Treatment Process Description & BAT Review - 5193-CAU-XX-XX-RP-V0312.A0.C1 BAT ● Dust & Emissions Management Plan - 5193-CAU-XX-XX-RP-V-0313.A0.C1 DEMP

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
	<ul style="list-style-type: none"> ● 3982-CAU-XX-XX-DR-V-1813_S2-PO4. INDICATIVE DRAINAGE PLAN [February 2022] 	
Pre-acceptance testing	<p>Only soils containing bound asbestos would be accepted for treatment. Acceptance limits are set for chrysotile (0.1%) and amphibole (0.01%) fibres in the soils of the accepted waste.</p> <p>The ACMs which can be accepted (mixed with the soils) will be limited to bound asbestos which can be removed as Notifiable Non-Licensed Works (NNLW). This restriction excludes the acceptance of unbound asbestos products such as lagging and insulation.</p> <p>Waste pre-acceptance procedures will be in place to confirm that wastes proposed for delivery to the site meet these criteria before wastes are identified as suitable for delivery to the site and for acceptance at the Soil Treatment Facility (STF).</p>	
Transportation to the site	<p>Wastes are transported to the site in covered or sheeted loads which may be in wagons or skips. It is the legal responsibility of the hauliers to implement the Duty of Care and to contain the wastes appropriately during transportation.</p> <p>Any washout or decontamination of the wagons or skips is carried out by the hauliers at other facilities; it is not carried out at the site.</p>	
Deposit to stockpiles	<p>Wastes that are accepted at the site must have been pre-authorized through the pre-acceptance procedure. The paperwork accompanying the arriving load is checked to confirm this. No loads that ‘turn up on the day’ are accepted at the site. Quarantine and rejection procedures are in place in the event that unsuitable materials are delivered to the site.</p> <p>Each arriving vehicle is directed to the appropriate stockpile area. Wastes of the same type from the same site of origin are stockpiled in a single location, wastes from different sites of origin are not mixed in a reception stockpile.</p> <p>Water is sprayed over the soils during discharge and stockpiling to ensure that the material is suitably wetted. A water bowser with a spray is used so that it can be moved and directed as needed during waste deposit and stockpiling. A comprehensive suppression system with overlapping arcs between misting units is used.</p>	

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
	<p>All water used in the sprays and mist particulate suppression systems described in this table includes a surfactant (a wetting agent) such as that described at Appendix 2 to the DH EMP. The agent is added in accordance with manufacturer’s instructions to a dosing tank and then added to the tank of water used to supply all dust suppression spray equipment at the site.</p> <p>Stockpiles are located on a concrete surface in the open. This allows space for the safe movement of the delivery vehicles and for the covering and uncovering of the stockpiles.</p> <p>Stockpiles are covered manually with a tarpaulin with the cover weighted down with concrete blocks when there is no transfer taking place to and from a stockpile and as a minimum at the end of each working day.</p> <p>Samples are collected of the deposited soils to confirm that the asbestos concentrations in the soil are below the thresholds set in the acceptance procedures. Once the results of the analyses are received and the soils in an individual stockpile are approved, processing can commence. If the results show that the soil does not meet the criteria for treatment at the site, the material in the stockpile is rejected in accordance with the rejection procedures.</p> <p>The soil reception procedure is appended to the EMP.</p>	
Transfer to screener	<p>After the results of the confirmatory testing have been received and a stockpile has been approved for onward processing, the tarpaulin is removed from the stockpile and the material is transferred to the 3-way screener using a back actor bucket. All plant is mobile for maximum flexibility so the screen is moved as close as possible to the stockpile to minimise the distance over which the soil is transferred. As the soils have been wetted prior to covering with the tarpaulin, they remain damp when the stockpile is removed.</p> <p>The transferred soil is deposited directly into the screener reception hopper with the height of the drop minimised. Spray rails are fitted to the reception hopper on the screener.</p> <p>The screener is located on a concrete surface in the open. This allows space for the safe movement of the mobile plant including the screener and picking station close to each stockpile to minimise transfer distances.</p>	

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
<p>Screener operation</p>	<p>The shaker decks separate the waste stream into oversize (>50mm), soil fraction (<15mm) and mid-size. The output of each fraction travels along a conveyor which is fitted with spray rails to ensure that the materials remain damp. The shaker deck and the conveyors are not covered. The conveyors are shaped with raised edges and fitted with belt return scrapers in order to minimise any potential for spillage.</p> <p>The oversize and the soil (fine) fraction conveyors deposit the screened material in a stockpile at the end of the conveyor. The height between the conveyor end and the stockpile is minimised. Spray rails are fitted to the end of the conveyor.</p> <p>The mid-size material is transferred directly from the screener conveyor into a reception hopper leading to the conveyor to the picking station. A spray rail is fitted on the input conveyor to the picking line. The height between the end of the screener conveyor and the reception hopper is minimised.</p> <p>The screener including the hopper, shaker decks and conveyors are scraped and cleared routinely so that there is no accumulation of soils. All plant at the site is subject to routine maintenance and inspection procedures.</p> <p>The screener and the associated stockpiles are located on a concrete surface in the open.</p>	
<p>Management of the oversize and soil fraction screener output streams</p>	<p>An appropriately trained asbestos operative is in place and inspecting the operations whenever the screener is active.</p> <p>The oversize output is checked visually by the operative as it is deposited from the screener and the stockpile is being formed. The trained operative would identify and remove any ACM material that is carried over into the oversize pile. Based on the experience of Provectus at similar facilities operated elsewhere in the UK this is an unusual occurrence. Visually unsuitable material such as wood or plastic inclusions are removed by hand as the material is deposited. Each batch of oversize material produced is subject to validation checks for the presence of asbestos. Where the results show that the material is suitable, the oversize material is transferred to a crusher to create aggregate for use in forming haul roads at the landfill site. If the material is tested and found to be unsuitable, rejection procedures are implemented. The crusher is fitted with dust suppression sprays. The crusher output is tested for asbestos content before it is used in haul roads and is only used if the recorded asbestos concentration is <0.1% by weight.</p>	

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
	<p>The soil fraction output is checked visually by the operative as it is deposited from the screener and the stockpile is being formed. The trained operative would identify and remove any ACM material that is carried over into the soil fraction pile. Based on the experience of Provectus at similar facilities operated elsewhere in the UK this is a rare occurrence. Visually unsuitable material such as wood or plastic inclusions are removed by hand as the material is deposited. Each batch of soil fraction produced is subject to validation checks for the presence of asbestos. When the results show that the material meets the specification agreed with the Environment Agency and is suitable for use in the restoration of the landfill site, the material is transferred to stockpiles for future use or is transferred directly to the restoration area. If the material is tested and found to be unsuitable, rejection procedures are implemented.</p>	
<p>Picking station for mid-size material</p>	<p>The picking station, through which the mid-size material passes, comprises an elevated, closed, mobile portable cabin or container adapted for the specific use. The conveyor transferring the mid-size material from the reception hopper into the picking station is fitted with spray rails on the input conveyor which forms the picking line. All trained operatives working at the picking line are equipped with PPE including overalls, gloves and facemasks with FFP3 filters. There is no active air extraction in the picking station.</p> <p>The trained operatives visually identify the presence of ACMs (or potential ACMs) in the mid-size fraction and remove them from the conveyor travelling through the picking station. The ACMs are deposited directly into double asbestos bags and when they are full, the bags are sealed.</p> <p>The materials which remain on the conveyor after going through the picking station are transferred out of the picking station on the conveyor and are deposited into an external stockpile. A spray rail is fitted at the conveyor outlet point. The height between the end of the conveyor and the clean material stockpile is minimised.</p> <p>Each batch of picked waste which is produced is subject to validation checks for the presence of asbestos. When the results show that the material meets the specification agreed with the Environment Agency and is suitable for use in the restoration of the landfill site, the material is transferred to stockpiles for future use or is transferred directly to the restoration area. If the material is tested and found to be unsuitable, rejection procedures are implemented.</p>	

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
Transfer and storage of bagged ACMs	The ACMs which are removed from the picking line are deposited directly into double asbestos bags. The sealed double bags are carried to an external, enclosed, lockable container where they are stored prior to removal from site for disposal at a hazardous waste landfill site under appropriate Duty of Care documentation and controls.	
Site surfacing	<p>All the site operations take place on an impermeable surface with an enclosed drainage collection system.</p> <p>The site surface is regularly damped down to minimise the potential for the generation of dust. In addition it is maintained in a clean condition including clearance of any spilled materials as they are generated using site plant and mobile bowzers as necessary. Spilled materials are returned to the stockpile of material awaiting treatment unless it is evident that the material comprises restoration materials which have been the subject of testing to confirm its suitability.</p>	
Surface water collection and management	<p>All activities from waste reception to storage and processing are located on an impermeable surface which has a self contained drainage system.</p> <p>The impermeable surface proposed at Daneshill will be formed of concrete. An impermeable surface is defined by the EA in numerous Standard Rules EPs as <i>'a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface.'</i></p> <p>Surface water runoff from the impermeable pad is collected in a holding tank. Water in the holding tank is filtered and/or treated as necessary then reused in the biotreatment works or collected and disposed off site to a suitable treatment facility.</p>	<p>All activities from waste reception to storage and processing are located on an impermeable surface which has a self contained drainage system.</p> <p>The impermeable surface proposed at Maw Green will be formed of low permeability geosynthetic clay liner (GCL).</p> <p>Surface water runoff from the impermeable pad is collected in a holding tank. Water in the holding tank is filtered and/or treated as necessary then reused in the biotreatment works or discharged to sewer.</p>
Monitoring locations and frequency and	The monitoring proposals for emissions from the asbestos treatment processes are set out in the application documents, namely the Emissions Management Plan (CD2/2/C).	The monitoring proposals for emissions from the asbestos treatment processes are set out in the application documents, namely the Dust and Emissions Management Plan (CD2/3/G).

Activity	Daneshill, as applied for prior to issue V090 and EA variation V010	Maw Green, as applied for and implemented through V090 prior to EA variation V010
detection limits proposed for each purpose.		

Table 2. Compliance of the proposed activity with the relevant aspects of the key legislation including BAT

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<i>Industrial Emissions Directive (CD1/A)</i>	
<i>Article 11 (a) all the appropriate preventive measures are taken against pollution;</i>	As demonstrated below when comparing the techniques proposed with BAT, all the appropriate preventive measures are taken against pollution.
<i>Article 11 (b) the best available techniques are applied;</i>	As demonstrated below BAT is applied to the techniques proposed for implementation for the activity.
<i>Article 11 (c) no significant pollution is caused;</i>	As a result of the management and operational techniques proposed, no significant pollution will be caused. The Proof of Evidence of Simon Cole in which monitoring data are reviewed and assessed confirms that the proposed emission control techniques will prevent or minimise asbestos fibre emissions. Monitoring will be implemented to confirm the effectiveness of the control methods.
<i>Article 11 (d) the generation of waste is prevented in accordance with Directive 2008/98/EC [the Waste Framework Directive];</i>	As waste soils will be recovered for reuse in restoration of the landfill sites, the generation of waste is prevented. All suitable oversize material is recovered for use in haul roads on the site.
<i>Article 11 (e) where waste is generated, it is, in order of priority and in accordance with Directive 2008/98/EC, prepared for re-use, recycled, recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;</i>	As waste soils will be recovered for reuse in restoration of the landfill sites, and the oversize materials will be used in haul roads, the soils contaminated with ACMs will not be disposed of in a hazardous waste landfill site.
<i>Article 11 (f) energy is used efficiently;</i>	<p>All the activities the subject of any Environmental Permit will be subject to regular review to identify any energy efficiency savings which can be made.</p> <p>As described in Sections 3 and 8 of this Proof of Evidence, the use of a mechanical screener to sort and separate the material into size fractions, prior to hand picking of asbestos contaminated soils to remove ACMs provides</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
	significant energy savings compared with achieving the same removal results without the use of a screener.
<i>Article 11 (g) the necessary measures are taken to prevent accidents and limit their consequences;</i>	An accident management plan is in place at the sites and will be amended/ adapted to include the proposed activities as necessary.
<i>Article 11 (h) the necessary measures are taken upon definitive cessation of activities to avoid any risk of pollution and return the site of operation to the satisfactory state defined in accordance with Article 22.</i>	All treatment activities will be carried out on an impermeable surface with an enclosed drainage system. Ongoing monitoring is proposed as part of the operational period. The monitoring will include background surrounding air and soil quality in order to confirm that there are no adverse impacts as a result of the proposed activities.
<i>The Waste (England and Wales) Regulations 2011 (CD1/D)</i>	
<i>Regulation 12. (1) An establishment or undertaking which imports, produces, collects, transports, recovers or disposes of waste, ... must ...take all such measures available to it as are reasonable in the circumstances to apply the following waste hierarchy as a priority order— (a)prevention; (b)preparing for re-use; (c)recycling; (d)other recovery (for example energy recovery); (e)disposal.</i>	The proposed activity complies with waste hierarchy in that the treatment process achieves the recovery and reuse of soils contaminated with asbestos for landfill restoration which otherwise would remain a hazardous waste for which the only management option is disposal to landfill. In addition the oversize materials removed by the mechanical screening process comprising large stones, bricks and lumps of concrete are husbanded and used on site as hardcore to form the surface of haul roads and other infrastructure.
<i>Regulation 12 (2) But an establishment or undertaking may depart from the priority order in paragraph (1) so as to achieve the best overall environmental outcome where this</i>	It is confirmed by the monitoring data presented in the Proof of Evidence of Simon Cole that given the proposed control techniques and emissions monitoring which will be implemented as part of the proposed activity that there

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<p><i>is justified by life-cycle thinking on the overall impacts of the generation and management of the waste.</i></p> <p><i>Regulation 12 (3) When considering the overall impacts mentioned in paragraph (2), the following considerations must be taken into account—</i></p> <p><i>(a) the general environmental protection principles of precaution and sustainability;</i></p> <p><i>(b) technical feasibility and economic viability;</i></p> <p><i>(c) protection of resources;</i></p> <p><i>(d) the overall environmental, human health, economic and social impacts.’</i></p>	<p>will be no overall adverse environmental or health impacts as a result of the proposed activity therefore the activity should be consented in order to achieve the benefits in accordance with the waste hierarchy and the energy saving benefits that arise from the use of a screener.</p> <p>As explained in Section 8 of this Proof of Evidence there are overall environmental benefits associated with the implementation of the soil remediation activities as proposed and the reuse of the recovered soils in the restoration of the site.</p>
The Hazardous Waste (England and Wales) Regulations 2005 (CD1/E)	
<p><i>Regulation 20. (1) This regulation applies to the holder where -</i></p> <p><i>(a) the hazardous waste has been mixed other than under and in accordance with a waste permit or a registered exemption, whether by the holder or a previous holder; and</i></p> <p><i>(b) separation is both—</i></p> <p><i>(i) technically and economically feasible; and</i></p> <p><i>(ii) necessary in order to comply with the Waste Directive conditions.</i></p>	<p>The waste which would be received for treatment by the proposed activity typically comprises construction and demolition waste which includes soils mixed with ACMs. Even if some segregation activity has been implemented at the site of arising of the waste, unseparated ACMs remain mixed with the soils meaning that the whole of the waste load is classified as hazardous waste unless and until the ACMs are removed and any residual fibres in the soil remain below the hazardous waste threshold. The proposed activity as proposed achieves the separation of the mixed wastes in a manner which is demonstrably technically and economically feasible.</p>
<p><i>Regulation 20 (2) The holder must make arrangements for separation of the waste to be carried out in accordance</i></p>	

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<p><i>with a waste permit or registered exemption as soon as reasonably practicable.</i></p>	
<p><i>Regulation 20 (3) In this Regulation “separation” means separation of a waste from any other waste, substance or material with which it has been mixed.</i></p>	
<p>Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council (BATc) (CD1/Z)</p>	
<p>BAT 8. <i>BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards.... Dust from the mechanical treatment of waste...[and]...physico-chemical treatment of solid and pasty waste...once every 6 months.</i></p>	<p>There will be no channelled emissions to air however a comprehensive air quality monitoring programme is proposed to confirm that the emissions control measures which are implemented continue to be effective.</p> <p>The monitoring of any emissions of asbestos fibres in the working area and at the site boundary is described in the Proof of Evidence of Simon Cole. The monitoring frequency implemented to achieve the performance data far exceeds the BAT requirements and provides a high degree of confidence. The proposed monitoring during the operational period will be in accordance with the BAT requirements.</p> <p>No emission limit is set for asbestos fibres in the BATc including for BAT 25 (mechanical treatment of waste) or BAT 41 (physico-chemical treatment of solid and pasty waste).</p> <p>The Environment Agency have stated in their Decision Documents for the issue of the regulator varied permits for the sites that the Environment Agency Emission Limit Value (ELV) based on BAT for the emission of asbestos fibres from the mechanical screening activity is 0.1fibres per ml (f/ml). The Environment Agency have stated in their Decision Documents for the issue of</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
	<p>the regulator varied permits for the sites that this ELV is in accordance with BATc and the Environment Agency Chemical Waste Appropriate Measures guidance.</p> <p>As summarised in Table 5 of the EMP for Daneshill and Table 3 of the DEMP for Maw Green, daily monitoring for the presence of asbestos fibres will be carried out in the vicinity of the screening operations while the screen is operating. Monitoring will be carried out in accordance with the EA M17 guidance and a threshold limit of <0.01f/ml will be applied. Additional quarterly monitoring will be carried out at the permit boundary in accordance with the EA M17 guidance as proposed in the EPs.</p> <p>The monitoring locations for Daneshill are shown on drawing reference 3982-CAU-XX-XX-DR -1803_S2_P07 (in the EMP CD2/2/C). The monitoring locations for Maw Green are shown on drawing reference 5193-CAU-XX-XX-DR -V-1806_S2_P01 (in the DEMP CD2/3/G).</p> <p>These control limits meet and exceed (ie are tighter than) those set by the Environment Agency in V010 of the permits of an hourly average of 0.1f/ml at the mechanical screener (Table S3.2) and 0.01f/ml at locations ‘in the outside air’ (with the specific locations to be confirmed) when asbestos contaminated soils are being received, handled and moved within the site (Table S3.11A for Daneshill and Table S3.13 for Maw Green)</p>
<p>BAT 14. <i>In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below. Depending on the risk posed by the waste in terms of diffuse emissions to air, BAT 14d is especially relevant</i></p>	<p>BAT14 relates to the prevention or the reduction of diffuse emissions to air and therefore is directly relevant to the proposed activities.</p> <p>Items a to h are addressed individually below.</p>
<p><i>a. Minimising the number of potential diffuse emission sources.</i></p>	<p>The techniques that will be applied at the proposed activity are set out in the Emissions Management Plan for each STF and include:</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<p><i>This includes techniques such as:</i></p> <ul style="list-style-type: none"> — <i>appropriate design of piping layout (e.g. minimising pipe run length, reducing the number of flanges and valves, using welded fittings and pipes);</i> — <i>favouring the use of gravity transfer rather than using pumps;</i> — <i>limiting the drop height of material;</i> — <i>limiting traffic speed;</i> — <i>using wind barriers.</i> 	<ul style="list-style-type: none"> ● restriction of the concentration of fibres present in unbound form in waste accepted for treatment at the site to <0.1% by weight chrysotile and <0.01% by weight of other forms of asbestos ● monitoring data demonstrates that the use of a screener as proposed does not increase the concentrations of unbound fibres present in the screened material ● the application of fixed and mobile mist sprays in order to dampen all exposed materials including during screening and transfer on conveyors as detailed in Table 1 and Figure 3 of this report. ● use of uncontaminated water for dampening sprays to avoid recirculating fine materials ● the use of a surfactant in the wetting sprays in order to maximise effectiveness ● the clear delineation of stockpiles to minimise the potential for vehicles and plant to run over the edges ● the sheeting of all stockpiles of delivered wastes awaiting treatment ● the minimisation of drop heights from delivery and transfer points and from the end of conveyor belts to stockpiles ● effective staff training in respect of the causes and prevention of dust ● high standards of housekeeping including the inspection and maintenance of all trafficked surfaces including the regular removal of any spilled materials ● a preventative maintenance programme, including readily available spares, to ensure the efficient operation of plant and equipment ● hand picking of ACMs in a closed picking station ● double bagging of ACMs removed from the waste soils in the picking station prior to transfer for disposal.
<p><i>b. Selection and use of high- integrity equipment.</i></p> <p><i>This includes techniques such as:</i></p> <ul style="list-style-type: none"> — <i>valves with double packing seals or equally efficient equipment;</i> — <i>high-integrity gaskets (such as spiral wound, ring joints) for critical applications;</i> 	<p>These techniques are not relevant to the control of fibre release from activities comprising the storage and removal of ACMs from waste soils.</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<ul style="list-style-type: none"> — pumps/compressors/agitators fitted with mechanical seals instead of packing; — magnetically driven pumps/ compressors/ agitators; — appropriate service hose access ports, piercing pliers, drill heads, e.g. when degassing WEEE containing VFCs and/or VHCs. 	
<p>c. Corrosion prevention. This includes techniques such as:</p> <ul style="list-style-type: none"> — appropriate selection of construction materials — lining or coating of equipment and painting of pipes with corrosion inhibitors. 	<p>These techniques are not relevant to the control of fibre release from activities comprising the storage and removal of ACMs from waste soils.</p>
<p>d. Containment, collection and treatment of diffuse emissions. This includes techniques such as:</p> <ul style="list-style-type: none"> — storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and/or enclosed equipment (e.g. conveyor belts); — maintaining the enclosed equipment or buildings under an adequate pressure; — collecting and directing the emissions to an appropriate abatement system (see Section 6.1) via an air extraction system and/or air suction systems close to the emission sources. 	<p>The application of specific BAT emission control techniques depends on the risk posed by the waste in terms of diffuse emissions to air. The techniques relate to the storage and treatment of waste and material that ‘may generate diffuse emissions’.</p> <p>The proposed activities are for the removal of bound ACMs; a limit is set on the concentration of unbound fibres which can be present in the wastes accepted at the site. These acceptance limits (<0.1% by weight chrysotile and <0.01% by weight of other forms of asbestos) are the same or lower than the concentration limits which are set and agreed with the Environment Agency for the soil to be used in the restoration of Maw Green Landfill site of <0.1% by weight asbestos fibres (CD2/3/M and CD2/3/N) for soils to be placed in the restoration profile for the landfill at depths more than 300mm below the final ground surface. It is anticipated that the same limits will be agreed with the Environment Agency and set for use in the restoration of Daneshill Landfill Site. There are no requirements for the storage and placement of these restoration materials to be carried out in an enclosed building as the need for and the nature of emission control procedures are based on site specific risk assessment.</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
	<p>Ignoring the potential presence of any other chemical contaminants, the soils received at the site for treatment to remove ACMs are classified as hazardous waste solely due to the presence of the ACMs, which comprise bound asbestos and not free fibres. Due to the acceptance criteria which are implemented, the concentrations of free asbestos fibres in the soils that can be accepted for treatment are the same as those that may be present in any inert waste (<0.1% by weight asbestos).</p> <p>The monitoring evidence shows that the use of a mechanical screener as proposed will not result in any material increase in the concentrations of unbound fibres in the soil compared with those in the wastes as received and prior to screening.</p> <p>As demonstrated by the monitoring data presented in the Proof of Evidence of Simon Cole the BAT related ELVs specified by the Environment Agency are achieved consistently by the application of the proposed control techniques.</p> <p>Based on the monitoring carried out at similar facilities (see the Proof of Evidence of Simon Cole) the proposed control measures are effective at preventing and/or minimising emissions of asbestos fibres and therefore alternative or additional available enclosure such as a building with or without negative pressure air extraction systems or the use of an enclosed screener would achieve no further demonstrable effective reduction in fibre emissions. In addition, as described in Section 4 of this Proof of Evidence, a covered, enclosed screener is not 'available' on the market and therefore cannot comprise BAT even if covering or enclosure might be shown to achieve additional reductions in fibre emissions.</p> <p>It is stated in the BATc that '<i>The use of enclosed equipment or buildings may be restricted by safety considerations...The use of enclosed equipment or buildings may also be constrained by the volume of waste</i>'. It is explained in Section 8 of</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
	<p>this Proof of Evidence that if a building was a requirement for all the activities, in order to provide sufficient space for the safe circulation of vehicles and plant and all the waste activities, the building would need to be in the order of 96m long, 40m wide with a height of 7m to the eaves and 10m to the apex. As described in Section 8 of this Proof of Evidence, the use of an enclosed building would result in environmental disbenefits in terms of resource and energy use.</p> <p>As set out in Table 1 and Figure 3, appropriate techniques are applied where necessary to prevent or minimise emissions during the storing, treating and handling of waste soils containing asbestos. These techniques include in particular a restriction on the acceptance of wastes which contain concentrations of unbound fibres above specified concentrations, robust data confirming that the use of the screener will not increase the concentrations of free fibres in the wastes being treated, the sheeting of stockpiles, the thorough application of fixed and mobile dampening sprays at targeted locations, the use of an appropriate surfactant in the dampening sprays to maximise their effectiveness and the location of the picking line where ACMs are manually removed in a closed cabin. All ACMs removed from the soil wastes will be stored in sealed double bags placed in a secured, covered container.</p>
<p><i>e. Dampening. Dampening potential sources of diffuse dust emissions (e.g. waste storage, traffic areas, and open handling processes) with water or fog.</i></p>	<p>A comprehensive suppression system with overlapping arcs between misting units will be used together with a backup mobile water bowser.</p> <p>Dampening and suppression will also include the waste reception and stockpile areas, fixed spray lines at the reception hopper and shaker screens, conveyor discharge points from the mechanical screen, and spray lines on the feed conveyor to the asbestos picking station. The proposed controls are set out in the Emissions Management Plans for the sites and comprise the thorough application using fixed and mobile dampening sprays at targeted locations combined with the use of an appropriate surfactant in the dampening sprays to maximise their effectiveness.</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
	Regular dampening will be used on trafficked areas of the site surface.
<p><i>f. Maintenance.</i> <i>This includes techniques such as:</i> — <i>ensuring access to potentially leaky equipment;</i> — <i>regularly controlling protective equipment such as lamellar curtains, fast-action doors.</i></p>	<p>The company operates under an ISO14001 accredited environmental management system, audits of the performance of key plant, and all maintenance that has been undertaken is undertaken and reviewed as part of the company’s management system. The company management system is audited externally as part of the ISO 9001 and 14001 accreditation.</p> <p>Regular inspection and maintenance of all equipment, including in particular emissions control equipment, is an integral part of the procedures which form part of the facility Environmental Management System as described in the comments regarding compliance with BAT1 in ‘Treatment Process Description and Indicative BAT Review: Establishing BAT conclusions for waste treatment’. July 2021 (Reference: 3982-CAU-XX-XX-RP-V-0306-A0.C3., CD2/2/G8) for Daneshill and 5193-CAU-XX-XX-RP-V0312.A0.C1 for Maw Green (CD2/3/F).</p>
<p><i>g. Cleaning of waste treatment and storage areas.</i> <i>This includes techniques such as regularly cleaning the whole waste treatment area (halls, traffic areas, storage areas, etc.), conveyor belts, equipment and containers.</i></p>	<p>Regular cleaning of waste treatment and storage areas and equipment is an integral part of the procedures which form part of the facility Environmental Management System as described in the comments regarding compliance with BAT1 in ‘Treatment Process Description and Indicative BAT Review: Establishing BAT conclusions for waste treatment’. July 2021 (Reference: 3982-CAU-XX-XX-RP-V-0306-A0.C3., CD2/2/G8) for Daneshill and 5193-CAU-XX-XX-RP-V0312.A0.C1 (CD2/3/F) for Maw Green.</p>
<p><i>h. Leak detection and repair (LDAR) programme.</i> <i>See Section 6.2. When emissions of organic compounds are expected, a LDAR programme is set up and implemented using a risk-based approach, considering in particular the design of the plant and the amount and nature of the organic compounds concerned.</i></p>	<p>These techniques are not relevant to the control of fibre release from activities comprising the storage and removal of ACMs from waste soils.</p>

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<p>BAT 25. <i>In order to reduce emissions to air of dust, and of particulate-bound metals, PCDD/F and dioxin-like PCBs, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.</i></p>	<p>BAT25 relates to the mechanical treatment of waste. No mechanical treatment of waste such as shredding or mixing or the use of vigorous segregation screens such as trommel screens is proposed. Removal of ACMs is carried out manually. The only mechanical treatment which will be applied is the use of horizontal screen decks.</p>
<p><i>a. Cyclone. Cyclones are mainly used as preliminary separators for coarse dust.</i></p>	<p>As explained in the response regarding BAT 14d above, the monitoring evidence shows that the use of a mechanical screener as proposed will not result in any material increase in the concentrations of unbound fibres in the soil from those in the wastes as received and prior to screening.</p>
<p><i>b. Fabric Filter</i></p>	
<p><i>c. Wet scrubbing</i></p>	
<p><i>d. Water injection into the shredder. The waste to be shredded is damped by injecting water into the shredder. The amount of water injected is regulated in relation to the amount of waste being shredded (which may be monitored via the energy consumed by the shredder motor). The waste gas that contains residual dust is directed to cyclone(s) and/or a wet scrubber.</i></p>	<p>The proposed activities do not include shredding.</p>
<p>BAT 41. <i>In order to reduce emissions of dust, organic compounds and NH₃ to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.</i></p>	<p>See the comments on BAT 14d above. There are no channelled emissions to air from the proposed activities and therefore the techniques listed below are not applicable.</p>
<p><i>a. Adsorption</i></p>	
<p><i>b. Biofilter</i></p>	
<p><i>c. Fabric filter</i></p>	
<p><i>d. Wet scrubbing</i></p>	
<p>6. Description of Techniques 6.4 Sorting techniques.</p>	

Legislation	Relevant aspects of the proposed activities at Daneshill and Maw Green
<p><i>Manual separation. Material is manually separated by means of visual examination by staff on a picking line or on the floor, either to selectively remove a target material from a general waste stream or to remove contamination from an output stream to increase purity. This technique generally targets recyclables (glass, plastic, etc.) and any contaminants, hazardous materials and oversized materials such as WEEE.</i></p>	<p>It is recognised in the BATc that in order to achieve effective removal of some physical contaminants from mixed waste streams a physical picking line represents BAT.</p>

Table 3. Comments on the conditions imposed by the regulator-initiated variation of Environmental Permit EPR/NP3538MF/V010 for Daneshill subject to appeal reference APP/EPR/651

Condition number and text	Appellant comments/changes requested
<p>3.1.6 For the following activities referenced in schedule 1, table S1.1; (AR2, AR3, AR3A, AR4, AR5) periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on systematic appraisal of the risk of contamination.</p>	<p><i>This condition is being appealed to ensure that the references to Table S1.1 are appropriately amended.</i></p>
<p>3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit: (a) Leachate specified in tables S3.1 and S3.9; (b) Point source emissions specified in tables S3.2 and S3.3; (c) Groundwater specified in tables S3.4 and S3.7; (d) Landfill gas specified in tables S3.5, S3.6 and S3.8; (e) Surface water specified in table S3.10; (f) Ambient air specified in table S3.11 and S3.11A; (g) Soil quality specified in table S3.12A and (h) Process monitoring as specified in tables S3.12B and 3.13.</p>	<p><i>This condition is being appealed with respect to:</i></p> <p><i>(b) which refers to point source emissions at Table S3.2 for the mechanical screener point source emission point required under pre-operational activity PO7 which is addressed below.</i></p> <p><i>(f) which refers to the ambient air quality monitoring set out in Table S3.11A which is addressed below.</i></p>
<p>Table S1.1 activities Activity reference AR3A Description of specified activity Recovery of soils impacted with identifiable pieces of bonded asbestos by separation. Limits of specified activity From treatment of soils impacted with identifiable pieces of bonded asbestos, by handpicking of bonded asbestos only, or by 3-way screener into oversize, medium</p>	<p><i>The following changes to the requirements are requested:</i></p> <p>From treatment of soils impacted with identifiable pieces of bonded asbestos, by handpicking of bonded asbestos only, or by 3-way screener into oversize, medium size and</p>

Condition number and text	Appellant comments/changes requested
<p>size and silt-sized fractions prior to handpicking of bonded asbestos from the medium fraction, to storage of recovered soils and separated bonded asbestos.</p> <p>Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system.</p> <p>The screener shall be enclosed.</p> <p>Handpicking shall take place in a dedicated enclosed picking line.</p> <p>No more than 100 tonnes per day of soils impacted with identifiable pieces of bonded asbestos shall be treated (in aggregate).</p> <p>The screening and handpicking of asbestos impacted wastes shall not increase the asbestos fibre load in the waste.</p> <p>Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building.</p> <p>Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed and locked containers. Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill as cover.</p> <p>No more than 10 tonnes of picked asbestos shall be stored on site. No more than 1000 tonnes of treated soils shall be stored on site.</p>	<p>silt-sized fractions prior to handpicking of bonded asbestos from the medium fraction, to storage of recovered soils and separated bonded asbestos.</p> <p>Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system.</p> <p>The screener shall be enclosed.</p> <p>Handpicking shall take place in a dedicated enclosed picking line.</p> <p>No more than 400 29,999 tonnes per annum day of soils impacted with identifiable pieces of bonded asbestos shall be treated (in aggregate).</p> <p>The screening and handpicking of asbestos impacted wastes shall not increase the emissions of asbestos fibres from lead in the waste.</p> <p>Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building.</p> <p>Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed</p>

Condition number and text	Appellant comments/changes requested
<p>Non-hazardous treated soils shall be kept separate from hazardous soils.</p> <p>Waste types (soil wastes only) and quantities as specified in schedule 2, table S2.8.</p>	<p>and locked containers. Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill for use in restoration as cover.</p> <p>No more than 10 tonnes of picked asbestos shall be stored on site. No more than 450,000 tonnes of treated non-hazardous soils shall be stored on site.</p> <p>Non-hazardous treated soils shall be kept separate from hazardous soils.</p> <p>Waste types (soil wastes only) and quantities as specified in schedule 2, table S2.8.</p>
<p>Table S1.1 activities Activity reference AR4 Description of specified activity Temporary storage of hazardous waste in a facility with a total capacity exceeding 50 tonnes. Limits of specified activity From receipt of waste through to submission for treatment. All storage shall take place on an impermeable surface with a sealed drainage system.</p> <p>No more than 150 tonnes of hazardous waste shall be stored in aggregate.</p> <p>No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR3A shall be stored at any time.</p>	<p><i>The following changes to the requirements are requested:</i></p> <p>From receipt of waste through to submission for treatment. All storage shall take place on an impermeable surface with a sealed drainage system.</p> <p>No more than 450 29,999 tonnes of hazardous waste shall be stored in aggregate at any one time.</p> <p>No more than 450 29,999 tonnes of hazardous asbestos impacted wastes for activity AR3A shall be stored at any time.</p>

Condition number and text	Appellant comments/changes requested
<p>Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Waste types and quantity as detailed in schedule 2, tables S2.4 and S2.8.</p>	<p>Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Waste types and quantity as detailed in schedule 2, tables S2.4 and S2.8.</p>
<p>Table S1.3 Improvement programme requirements</p> <p>Reference IC12</p> <p>Requirement The operator shall provide a report on the monitoring undertaken as part of the sampling of the incoming waste and the separated wastes streams, from the operation of the asbestos screening process over the first 4 months of operation, for approval by the Environment Agency. The sampling report shall:</p> <ul style="list-style-type: none"> • detail the method(s) used to sample and analyse the treated waste streams for asbestos fibres; • demonstrate a high percentile level of confidence in the treatment process taking account of the amount of waste treated per batch and the number of samples required to adequately sample each waste stream, both initially and on an ongoing basis; • demonstrate that additional asbestos fibre contamination is not being created by the screening process. • recommend any additional measures to be undertaken to ensure compliance with the permit conditions. <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.</p>	<p><i>The monitoring data reviewed by Simon Cole in his Proof of Evidence demonstrates that there are no materially increased concentrations of fibrous asbestos in processed material following mechanical soil screening.</i></p> <p><i>The extensive monitoring database reviewed confirms that the EA derived BAT-AELs and boundary threshold levels of asbestos fibres in air are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.</i></p> <p><i>There is therefore no requirement for IC12.</i></p>

Condition number and text	Appellant comments/changes requested
<p>The operator shall implement the additional measures as approved, and from the date stipulated by, the Environment Agency.</p>	
<p>Table S1.4 Pre-operational measures for future development Reference PO7 Operation Operation of the mechanical screener for treatment of asbestos impacted wastes Pre-operational Measures Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR3A a report shall be submitted for approval detailing the following aspects:</p> <ul style="list-style-type: none"> • Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design. • Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site. • Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed. <p>No mechanical pre-screening of asbestos contaminated soils under activity reference AR3A shall commence unless the Environment Agency has given prior approval under this condition.</p>	<p><i>The monitoring data reviewed by Simon Cole in his Proof of Evidence demonstrates that there are no materially increased concentrations of fibrous asbestos in processed material following mechanical soil screening.</i></p> <p><i>The extensive monitoring database reviewed confirms that the EA derived BAT-AELs and boundary threshold levels of asbestos fibres in air are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.</i></p> <p><i>There is therefore no requirement for enclosure of the screener and no requirement for PO7.</i></p>
<p>Table S2.8 Permitted waste types and quantities for screening, handpicking and storage of soils impacted with bonded asbestos (Activities AR3A and AR4)</p>	<p><i>This condition is being appealed to ensure that the references to the Activities are appropriately amended.</i></p>

Condition number and text		Appellant comments/changes requested
Maximum quantity	No more than 29,999 tonnes of hazardous waste shall be accepted per year (in aggregate with table S2.4)	
Exclusions	Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)	
Waste code	Description	
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 03* and 17 06 05*	soil and stones containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye)	
17 05 04 and 17 06 05*	soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye)	
<p>Table S3.2 Point source emissions to air – emission limits and monitoring requirements</p> <p>Table S3.2 includes a requirement for monitoring at the following location: Asbestos screener emission point (to be confirmed by pre-operational condition PO7). Air extraction system stack.</p>		<p><i>As explained above there is no requirement for enclosure of the screener and therefore there will be no point source emission point and this row of Table S3.2 is not necessary.</i></p>

Condition number and text	Appellant comments/changes requested
<p>Table S3.11A Ambient air - monitoring requirements for asbestos treatment</p> <p>Outside air testing when asbestos contaminated soils are being received, handled and moved within the site (points to be confirmed by pre-operational condition PO7)</p>	<p>Outside air testing when asbestos contaminated soils are being received, handled and moved within the site (points as shown on plan 3982-CAU-XX-XX-DR-V-1803 to be confirmed by pre-operational condition PO7)</p> <p><i>All other requirements of this table are acceptable.</i></p>
<p>Table S4.1 Reporting of monitoring data</p> <p>The second entry is:</p> <p>Point source emission to air. As specified by Schedule 3, table S3.2</p>	<p><i>As stated above for Table S3.2 there is no requirement for enclosure of the screener and therefore there will be no point source emission point. Accordingly this row of Table S4.1 is not necessary.</i></p>
<p>Table S4.4 Reporting Forms</p>	<p><i>This condition is being appealed for completeness as it relates to Table S4.1.</i></p>

Table 4. Comments on the conditions imposed by the regulator-initiated variation of Environmental Permit EPR/BS7722ID/V010 for Maw Green subject to appeal reference APP/EPR/652

Condition number and text	Applicant comments
<p>2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).</p>	<p><i>This condition is being appealed to ensure that the references to Table S1.1 are appropriately amended.</i></p>
<p>2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.</p>	<p><i>This condition is being appealed to ensure that the references to Table S1.2 are appropriately amended.</i></p>
<p>2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.</p>	<p><i>This condition is being appealed to ensure that the references to Table S1.3 are appropriately amended.</i></p>
<p>2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.</p>	<p><i>This condition is being appealed to ensure that the references to Table S1.4 are appropriately amended.</i></p>
<p>3.1.2 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.2, S3.3 and S3.4.</p>	<p><i>This condition is being appealed to ensure that the references to Tables S3.2, S3.3 and S3.4 are appropriately amended.</i></p>
<p>3.1.3 The limits given in Table S3.2 shall not be exceeded, save that compliance with an emission limit in that table shall include incorporation of the uncertainty allowance stated in Environment Agency guidance LFTGN 05 and LFTGN 08.</p>	<p><i>This condition is being appealed to ensure that the references to Table S3.2 are appropriately amended.</i></p>
<p>3.5.1 (b)</p>	<p><i>This condition is being appealed with respect to:</i></p>

Condition number and text	Applicant comments
<p>The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit: (b) Point source emissions specified in tables S3.2, S3.3 and S3.4;</p>	<p><i>(b) which refers to point source emissions at Table S3.2 for the mechanical screener point source emission point required under pre-operational activity 'PO7' [which should read PO4] which is addressed below.</i></p>
<p>3.5.1 (g) The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit: (g) Ambient air monitoring specified in table S3.14.</p>	<p><i>This condition is being appealed with respect to: g) which refers to the ambient air quality monitoring set out in Table S3.14 which is addressed below.</i></p>
<p>Table S1.1 activities Activity reference AR6 Description of specified activity Temporary storage of hazardous waste. Limits of specified activity A maximum of 38,000 tonnes at any one time on site for wastes due to undergo treatment as per Activities AR3, AR4, AR5 or AR7. All storage shall take place on an impermeable surface with a sealed drainage system. No more than 38,000 tonnes of hazardous waste shall be stored in aggregate. No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR7 shall be stored at any time.</p>	<p><i>The following changes to the requirements are requested:</i></p> <p>A maximum of 38,000 tonnes at any one time on site for wastes due to undergo treatment as per Activities AR3, AR4, AR5 or AR7.</p> <p>All storage shall take place on an impermeable surface with a sealed drainage system.</p> <p>No more than 38,000 tonnes of hazardous waste shall be stored in aggregate.</p> <p>No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR7 shall be stored at any time.</p> <p>Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p>

Condition number and text	Applicant comments
<p>Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Hazardous waste types and quantities as specified in table S2.3a, S2.3b and S2.4.</p>	<p>Hazardous waste types and quantities as specified in table S2.3a, S2.3b and S2.4.</p>
<p>Table S1.1 activities Activity reference AR7 Description of specified activity Recovery of soils impacted with identifiable pieces of bonded asbestos cement by separation. Limits of specified activity From treatment of soils impacted with identifiable pieces of bonded asbestos cement, by handpicking of asbestos cement only, or by 3-way screener into oversize, medium size and silt-sized fractions prior to handpicking of asbestos cement from the medium fraction, to storage of recovered soils and separated bonded asbestos cement.</p> <p>Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system.</p> <p>The screener shall be enclosed.</p> <p>Handpicking shall take place in a dedicated enclosed picking line.</p> <p>No more than 100 tonnes per day of soils impacted with identifiable pieces of bonded asbestos cement shall be treated (in aggregate).</p>	<p><i>The following changes to the requirements are requested:</i></p> <p>From treatment of soils impacted with identifiable pieces of bonded asbestos cement, by handpicking of bonded asbestos cement only, or by 3-way screener into oversize, medium size and silt-sized fractions prior to handpicking of bonded asbestos cement from the medium fraction, to storage of recovered soils and separated bonded asbestos cement.</p> <p>Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system.</p> <p>The screener shall be enclosed.</p> <p>Handpicking shall take place in a dedicated enclosed picking line.</p> <p>No more than 38,000 tonnes at any one time per annum day of soils impacted with identifiable pieces of bonded asbestos cement shall be screened treated (in aggregate).</p>

Condition number and text	Applicant comments
<p>The screening and handpicking of asbestos impacted wastes shall not increase the asbestos fibre load in the waste.</p> <p>Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building.</p> <p>Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed and locked containers.</p> <p>Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill as cover.</p> <p>No more than 10 tonnes of picked asbestos shall be stored on site.</p> <p>No more than 1000 tonnes of treated soils shall be stored on site.</p> <p>Non-hazardous treated soils shall be kept separate from hazardous soils.</p> <p>Waste types (soil wastes only) and quantities as specified in schedule 2, table S2.4.</p>	<p>The screening and handpicking of asbestos impacted wastes shall not increase the emissions of asbestos fibres from lead in the waste.</p> <p>Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building.</p> <p>Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.</p> <p>Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed and locked containers.</p> <p>Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill as cover restoration soil.</p> <p>No more than 10 tonnes of picked asbestos shall be stored on site.</p> <p>No more than 438,000 tonnes of treated soils shall be stored on site at any one time.</p> <p>Non-hazardous treated soils shall be kept separate from hazardous soils.</p> <p>Waste types (soil wastes only) and quantities as specified in schedule 2, table S2.4.</p>
<p>Table S1.2 Operating techniques (Row 27) Description Application EPR/BS7722ID/V009 dated 10/01/2023</p>	<p><i>The following changes to the requirements are requested:</i></p>

Condition number and text	Applicant comments
<p>Parts</p> <p>Documents received in response to Section 3a of form Part C3: Treatment process & BAT review - reference 10012023, excluding all references to mechanical screener that is not enclosed.</p> <ul style="list-style-type: none"> • Dust & Emissions Management Plan (Document Ref: 5193-CAU-XX-XX-RP-V-0313.A0.C1), excluding all references to mechanical screener that is not enclosed. • Environmental Setting and Installation Design (ESID) - Addendum 2022 (Document Ref: 5193-CAU-XX-XX-RP-V-0309.A0.C1), excluding all reference to mechanical screener that is not enclosed. Amenity & Accidents Risk Assessment (Document Ref: 5193-CAU-XX-XX-RP-V-0310.A0.C1), excluding all references to mechanical screener that is not enclosed. Activities & Operating Techniques Report (Document Ref: 5193-CAU-XX-XX-RP-V-0311.A0.C1), excluding all references to mechanical screener that is not enclosed 	<p>Documents received in response to Section 3a of form Part C3: Treatment process & BAT review - reference 10012023, excluding all references to mechanical screener that is not enclosed.</p> <ul style="list-style-type: none"> • Dust & Emissions Management Plan (Document Ref: 5193-CAU-XX-XX-RP-V-0313.A0.C1), excluding all references to mechanical screener that is not enclosed. • Environmental Setting and Installation Design (ESID) - Addendum 2022 (Document Ref: 5193-CAU-XX-XX-RP-V-0309.A0.C1), excluding all reference to mechanical screener that is not enclosed. Amenity & Accidents Risk Assessment (Document Ref: 5193-CAU-XX-XX-RP-V-0310.A0.C1), excluding all references to mechanical screener that is not enclosed. Activities & Operating Techniques Report (Document Ref: 5193-CAU-XX-XX-RP-V-0311.A0.C1), excluding all references to mechanical screener that is not enclosed
<p>Table S1.3 Improvement programme requirements</p> <p>Reference</p> <p>5</p> <p>Requirement</p> <p>The operator shall provide a report on the monitoring undertaken as part of the sampling of the incoming waste and the separated wastes streams, from the operation of the asbestos screening process over 4 months of operation, for approval by the Environment Agency.</p> <p>The sampling report shall:</p> <ul style="list-style-type: none"> • detail the method(s) used to sample and analyse the treated waste streams for asbestos fibres; • demonstrate a high percentile level of confidence in the treatment process taking account of the amount of waste treated per batch 	<p><i>The monitoring data reviewed by Simon Cole in his Proof of Evidence demonstrates that there are no materially increased concentrations of fibrous asbestos in processed material following mechanical soil screening.</i></p> <p><i>The extensive monitoring database reviewed confirms that the EA derived BAT-AELs and boundary threshold levels of asbestos fibres in air are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.</i></p>

Condition number and text	Applicant comments
<p>and the number of samples required to adequately sample each waste stream, both initially and on an ongoing basis;</p> <ul style="list-style-type: none"> • demonstrate that additional asbestos fibre contamination is not being created by the screening process. • recommend any additional measures to be undertaken to ensure compliance with the permit conditions. <p>The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.</p> <p>The operator shall implement the additional measures as approved, and from the date stipulated by, the Environment Agency.</p>	<p><i>There is therefore no requirement for IC5.</i></p>
<p>Table S1.4 Pre-operational measures for future development Reference</p> <p>4</p> <p>Operation</p> <p>Operation of the mechanical screener for treatment of asbestos impacted wastes</p> <p>Pre-operational Measures</p> <p>Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR7 a report shall be submitted for written approval detailing the following aspects:</p> <ul style="list-style-type: none"> • Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design. • Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site. • Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener 	<p><i>The monitoring data reviewed by Simon Cole in his Proof of Evidence demonstrates that there are no materially increased concentrations of fibrous asbestos in processed material following mechanical soil screening.</i></p> <p><i>The extensive monitoring database reviewed confirms that the EA derived BAT-AELs and boundary threshold levels of asbestos fibres in air are met consistently by the ACM screening activities using the proposed emissions management techniques to prevent or minimise the emission of free asbestos fibres.</i></p> <p><i>There is therefore no requirement for enclosure of the screener and no requirement for PO4.</i></p>

Condition number and text	Applicant comments												
<p>and active abatement system are fully operational and working as designed.</p> <p>No mechanical pre-screening of asbestos contaminated soils under activity reference AR3A shall commence unless the Environment Agency has given prior approval under this condition.</p>													
<p>Table S2.4 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos cement (AR6, AR7)</p> <table border="1" data-bbox="224 550 1041 1284"> <thead> <tr> <th colspan="2" data-bbox="224 550 1041 662">Table S2.4 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos cement (AR6, AR7)</th> </tr> </thead> <tbody> <tr> <td data-bbox="224 662 392 774">Maximum quantity</td> <td data-bbox="392 662 1041 774">Annual throughput shall not exceed 50,000 tonnes for activities AR3, AR4, AR5, AR6, AR7, AR8, AR16</td> </tr> <tr> <td data-bbox="224 774 392 845">Waste code</td> <td data-bbox="392 774 1041 845">Description</td> </tr> <tr> <td data-bbox="224 845 392 1101">Exclusions</td> <td data-bbox="392 845 1041 1101">Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)</td> </tr> <tr> <td data-bbox="224 1101 392 1204">17</td> <td data-bbox="392 1101 1041 1204">CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITE</td> </tr> <tr> <td data-bbox="224 1204 392 1284">17 05</td> <td data-bbox="392 1204 1041 1284">soil (including excavated soil from contaminated sites), stones and dredging</td> </tr> </tbody> </table>	Table S2.4 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos cement (AR6, AR7)		Maximum quantity	Annual throughput shall not exceed 50,000 tonnes for activities AR3, AR4, AR5, AR6, AR7, AR8, AR16	Waste code	Description	Exclusions	Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)	17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITE	17 05	soil (including excavated soil from contaminated sites), stones and dredging	<p><i>All references to cement should be deleted.</i></p>
Table S2.4 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos cement (AR6, AR7)													
Maximum quantity	Annual throughput shall not exceed 50,000 tonnes for activities AR3, AR4, AR5, AR6, AR7, AR8, AR16												
Waste code	Description												
Exclusions	Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)												
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITE												
17 05	soil (including excavated soil from contaminated sites), stones and dredging												

Condition number and text		Applicant comments
	spoil	
17 05 03* and 17 06 05*	soil and stones containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye)	
17 05 04 and 17 06 05*	soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye)	
<p>Table S3.2 Point source emissions to air – emission limits and monitoring requirements (Row 4)</p> <p>Table S3.2 includes a requirement for monitoring at the following location:</p> <p>Asbestos screener emission point (to be confirmed by pre-operational condition 'PO7'). Air extraction system stack.</p>		<p><i>As explained above there is no requirement for enclosure of the screener and therefore there will be no point source emission point and this row of Table S3.2 is not necessary</i></p>
<p>Table S3.14 Ambient air monitoring requirements</p> <p>Location or description of point of measurement</p> <p>Outside air testing when asbestos contaminated soils are being received, handled and moved within the site (points to be confirmed by pre-operational condition 'PO7')</p>		<p>Outside air testing when asbestos contaminated soils are being received, handled and moved within the site (points as shown on plan 5193-CAU-XX-XX-DR-V-1806 to be confirmed by pre-operational condition PO7)</p> <p><i>All other requirements of this table are acceptable.</i></p>

Table 5. Comparison of the proposed activities and controls at the Daneshill and Maw Green Soil Treatment Facilities with other, similar, consented activities

Consented process	Emission controls implemented under the Environmental Permit
<p>Site: <u>Daneshill Landfill</u> Operator: FCC Recycling (UK) Limited. Site address: Daneshill Road, Lound, Nottinghamshire, DN22 8RB Permit reference (as applied for): <u>EPR/NP3538MF (V009)</u> Permit reference (EA initiated variation): <u>EPR/NP3538MF (V010)</u></p>	
<p>Proposal to accept and treat soils containing asbestos</p>	<p><u>Asbestos Waste</u></p> <p>Only soils containing bound asbestos would be accepted for treatment. Acceptance limits are set for unbound fibres of chrysotile (0.1%) and amphibole (0.01%) in the accepted waste.</p> <ul style="list-style-type: none"> • Segregated storage and processing area for asbestos contaminated soils. • Stockpiles covered with tarpaulins. • Asbestos contaminated soils to be screened using a three-way screener. • Fixed and mobile sprays and mists to be applied in accordance with EMP • Post screening soils to travel along an input conveyer with spray rail to a covered picking station, visible fragments of asbestos to be hand-picked and placed in polythene bags (double) prior to sealing and deposit within locked containers. • Handpicking of ACMs will only be undertaken by suitably trained operatives. • All stockpiles generated from the screening/hand-picking will be visually inspected for the presence of residual asbestos prior to being sampled for biotreatment or reuse. • Dust suppression to be in place to dampen stockpiles and during loading and unloading activities. • All operations to take place on an impermeable surface with sealed drainage. • Boundary monitoring threshold limit of an agreed background reference level. <p>The purpose of soil treatment is to enable reuse of soil for the restoration of the wider landfill site. The picked asbestos pieces would be sent to hazardous landfill for disposal.</p> <p><u>Introductory note</u></p> <p>The variation adds an asbestos screening and picking activity for asbestos impacted soils to the Soil Treatment Facility (STF) located within the existing permitted landfill boundary. Screening of asbestos impacted soils will be enclosed and abated to minimise emissions from the process...Once treated the wastes will be tested for suitability for use in the wider landfill restoration. Soils that don't meet the reuse criteria will be disposed of in the landfill.</p>
<p>Recovery of soils impacted with identifiable pieces of bonded asbestos by separation (AR3A)</p>	<p><u>Table S1.1 activities</u></p> <p>From treatment of soils impacted with identifiable pieces of bonded asbestos, by handpicking of bonded asbestos only, or by 3-way screener into oversize, medium size and silt-sized fractions prior to handpicking of bonded asbestos from the medium fraction, to storage of recovered soils and separated bonded asbestos.</p> <ul style="list-style-type: none"> • Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system. • The screener shall be enclosed. • Handpicking shall take place in a dedicated enclosed picking line. • The screening and handpicking of asbestos impacted wastes shall not increase the asbestos fibre load in the waste. • Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building. • Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting. • Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed and locked containers. • Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill as cover. • Non-hazardous treated soils shall be kept separate from hazardous soils.

Consented process	Emission controls implemented under the Environmental Permit
Temporary storage of hazardous waste in a facility with a total capacity exceeding 50 tonnes (AR4)	<p><u>Table S1.1 activities</u></p> <p>From receipt of waste through to submission for treatment.</p> <ul style="list-style-type: none"> All storage shall take place on an impermeable surface with a sealed drainage system. Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.
Permitted waste types and quantities	
From treatment of soils impacted with identifiable pieces of bonded asbestos, by handpicking of bonded asbestos only, or by 3-way screener into oversize, medium size and silt-sized fractions prior to handpicking of bonded asbestos from the medium fraction, to storage of recovered soils and separated bonded asbestos.	<p><u>Table S1.1 activities</u></p> <ul style="list-style-type: none"> No more than 100 tonnes per day of soils impacted with identifiable pieces of bonded asbestos shall be treated (in aggregate). No more than 10 tonnes of picked asbestos shall be stored on site. No more than 1000 tonnes of treated soils shall be stored on site.
From receipt of waste through to submission for treatment.	<p><u>Table S1.1 activities</u></p> <ul style="list-style-type: none"> No more than 150 tonnes of hazardous waste shall be stored in aggregate. No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR3A shall be stored at any time.
Permitted waste types and quantities for the storage and biological treatment for recovery of hazardous waste (AR3 and AR4)	<p>Only soils containing bound asbestos would be accepted for treatment. Acceptance limits are set for chrysotile (0.1%) and amphibole (0.001%) fibres in the accepted waste.</p> <p>The Soil Treatment Facility is proposed to accept and process up to 29,999 tonnes per annum of hazardous soils.</p> <p><u>Table S2.4 Permitted waste types and quantities for the storage and biological treatment for recovery of hazardous waste</u></p> <p>Wastes having any of the following characteristics shall not be accepted: Waste containing asbestos</p> <p>Maximum quantity:</p> <p>No more than 29,999 tonnes of hazardous waste shall be accepted per year.</p> <p><u>Table S2.8 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos (AR3 and AR4)</u></p> <ul style="list-style-type: none"> soil and stones containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 05 03* and 17 06 05*) soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 05 04 and 17 06 05*) <p>Exclusions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)</p> <p>Maximum quantity: No more than 29,999 tonnes of hazardous waste shall be accepted per year</p>
Emission limits specified in the Environmental Permit	
Asbestos fibres limit	<p>Proposed in application: Asbestos fibres limit = 0.01 fibre/ml or the agreed background reference value.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p>

Consented process	Emission controls implemented under the Environmental Permit
	Supplementary asbestos monitoring at boundary to ensure compliance with an agreed background reference level.
Asbestos screener emission point	<p>Table S3.2 Point source emissions to air – emission limits and monitoring requirements</p> <p>Air extraction system stack: Asbestos fibres limit = 0.1 fibre/ml (hourly average)</p> <p>Monitoring required monthly but may be reduced to a quarterly frequency after 12 monthly monitoring events with the written agreement of the Environment Agency. To the extent possible, the measurements shall be carried out at the highest expected emission state under normal operating conditions.</p>
Outside air testing when asbestos contaminated soils are being received, handled and moved within the site	<p>Table S3.11A Ambient air – monitoring requirements for asbestos treatment</p> <p>Asbestos fibres limit = 0.01 fibre/ml</p> <p>Monitoring required during receipt, handling and movement of asbestos contaminated soil within the site.</p>
Operational measures	
	<p>Table S1.3 Improvement programme requirements</p> <p><u>Within 6 months of the completion of commissioning the operator shall provide a report on the monitoring undertaken as part of the sampling of the incoming waste and the separated wastes streams, from the operation of the asbestos screening process over the first 4 months of operation, for approval by the Environment Agency. The sampling report shall:</u></p> <ul style="list-style-type: none"> • <u>detail the method(s) used to sample and analyse the treated waste streams for asbestos fibres</u> • <u>demonstrate a high percentile level of confidence in the treatment process taking account of the amount of waste treated per batch and the number of samples required to adequately sample each waste stream, both initially and on an ongoing basis</u> • <u>demonstrate that additional asbestos fibre contamination is not being created by the screening process.</u> • <u>recommend any additional measures to be undertaken to ensure compliance with the permit conditions.</u>
Operation of the mechanical screener for treatment of asbestos impacted wastes	<p>Table S1.4 Pre-operational measures for future development</p> <p><u>Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR3A a report shall be submitted for approval detailing the following aspects:</u></p> <ul style="list-style-type: none"> • <u>Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design.</u> • <u>Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site.</u> • <u>Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed.</u> <p><u>No mechanical pre-screening of asbestos contaminated soils under activity reference AR3A shall commence unless the Environment Agency has given prior approval under this condition.</u></p>
<p>Site: <u>Maw Green Landfill Site</u> Operator: 3C Waste Limited (FCC) Site address: Maw Green Soil Treatment Facility, Maw Green Lane, Crewe, CW1 5NG Permit reference (issued): <u>EPR/BS7722ID (V009)</u> Permit reference (EA initiated variation): <u>EPR/BS7722ID (V010)</u></p>	
Temporary storage of hazardous waste (AR6)	<p>Table S1.1 activities</p> <p>A maximum of 38,000 tonnes at any one time on site for wastes due to undergo treatment</p> <p>Table S1.1 activities</p> <ul style="list-style-type: none"> • No more than 150 tonnes of hazardous asbestos impacted wastes for activity AR7 shall be stored at any time.

Consented process	Emission controls implemented under the Environmental Permit
	<ul style="list-style-type: none"> Soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting.
<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment (AR7)</p>	<p><u>Table S1.1 activities</u></p> <p>From receipt of waste through to storage of treated waste. Including storage and use of process additives.</p> <p>All treatment and storage shall take place on an impermeable surface with a sealed drainage system.</p>
<p>Recovery of soils impacted with identifiable pieces of bonded asbestos cement by separation (AR7)</p>	<p><u>Table S1.1 activities</u></p> <ul style="list-style-type: none"> From treatment of soils impacted with identifiable pieces of bonded asbestos cement, by handpicking of asbestos cement only, or by 3-way screener into oversize, medium size and silt-sized fractions prior to handpicking of asbestos cement from the medium fraction, to storage of recovered soils and separated bonded asbestos cement. Screening and handpicking shall take place in a building on an impermeable surface with a sealed drainage system. The screener shall be enclosed. Handpicking shall take place in a dedicated enclosed picking line. No more than 100 tonnes per day of soils impacted with identifiable pieces of bonded asbestos cement shall be treated (in aggregate). The screening and handpicking of asbestos impacted wastes shall not increase the asbestos fibre load in the waste. Storage of screened waste not impacted with asbestos shall be stored outside in bays or in a building. Screened soil impacted with asbestos shall be stored inside a building in a way that minimises asbestos fibre emissions such as spraying and sheeting. Separated bonded asbestos fragments shall be bagged whilst handpicking is in progress. Once handpicked asbestos shall be stored double bagged in sealed, closed and locked containers. Treated waste shall be stored for no longer than 6 months prior to transfer off-site or to the landfill as cover. No more than 10 tonnes of picked asbestos shall be stored on site. No more than 1000 tonnes of treated soils shall be stored on site. Non-hazardous treated soils shall be kept separate from hazardous soils.
Permitted waste types and quantities	
<p>Permitted waste types and quantities for soils impacted with bonded asbestos</p>	<p><u>Table S2.4 Permitted waste types for Site Treatment Facility for the acceptance of bonded asbestos contaminated soil</u></p> <ul style="list-style-type: none"> soil and stones containing hazardous substances (waste code 17 05 03*) other construction materials containing asbestos (waste code 17 06 05*) <p>Annual throughput shall not exceed 50,000 tonnes Acceptance limits are set for chrysotile (<0.1%) and amphibole (<0.001%) fibres in the accepted waste.</p> <p><u>Table S2.4 Permitted waste types and quantities for screening and handpicking, and storage of soils impacted with bonded asbestos cement (AR6, AR7)</u></p> <ul style="list-style-type: none"> soil and stones containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 05 03* and 17 06 05*) soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 05 04 and 17 06 05*) <p>Exclusions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)</p> <p>Maximum quantity: Annual throughput shall not exceed 50,000 tonnes</p>

Consented process	Emission controls implemented under the Environmental Permit
Emission limits specified in the Environmental Permit	
Asbestos screener air extraction system	<p><u>Table S3.2 Point source emissions to air – emission limits and monitoring requirements</u></p> <p>Asbestos screener emissions to air: Asbestos screener asbestos fibres emission limit = 0.1 fibre/ml (hourly average).</p> <p>Monitoring required monthly but may be reduced to a quarterly frequency after 12 monthly monitoring events with the written agreement of the Environment Agency.</p>
Outside air testing when asbestos contaminated soils being received, handled and moved within the site	<p><u>Table S3.14 Ambient air monitoring requirements</u></p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required during receipt, handling and movement of asbestos contaminated soil within the site</p> <p>Reporting of monitoring data due every 12 months.</p>
Operational measures	
Pre-operational measures for the operation of the mechanical screener for treatment of asbestos impacted wastes	<p><u>Table S1.4 Pre-operational measures for future development</u></p> <p>Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR7 a report shall be submitted for written approval detailing the following aspects:</p> <ul style="list-style-type: none"> • Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design. • Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site. • Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed. <p>No mechanical pre-screening of asbestos contaminated soils under activity reference AR3A shall commence unless the Environment Agency has given prior approval under this condition.</p>
Improvement programme requirements	<p><u>Table S1.3 Improvement programme requirements</u></p> <p>The operator shall provide a report on the monitoring undertaken as part of the sampling of the incoming waste and the separated wastes streams, from the operation of the asbestos screening process over 4 months of operation, for approval by the Environment Agency.</p> <p>The sampling report shall:</p> <ul style="list-style-type: none"> • detail the method(s) used to sample and analyse the treated waste streams for asbestos fibres; • demonstrate a high percentile level of confidence in the treatment process taking account of the amount of waste treated per batch and the number of samples required to adequately sample each waste stream, both initially and on an ongoing basis; • demonstrate that additional asbestos fibre contamination is not being created by the screening process. • recommend any additional measures to be undertaken to ensure compliance with the permit conditions.
<p>Site: <u>Edwin Richards Quarry</u>. Operator: 3C Waste Limited (FCC) Site address: Midland Quarry Products, Portway Road, Rowley Regis, Warley, West Midlands, B65 9DN Permit reference: <u>EPR/HP3632RP</u></p>	
Asbestos removal from soils (AR2)	<p><u>Table S1.1 activities</u></p> <p>From receipt of hazardous waste through to storage of treated waste prior to being subject to bioremediation or sent off-site for disposal.</p> <ul style="list-style-type: none"> • Treatment consisting only of the following:

Emission controls implemented under the Environmental Permit	
Consented process	<ul style="list-style-type: none"> ○ Once pre-operational condition 1 has been given written permission the mechanical screening of waste soil prior to transfer to the hand picking line. ○ Hand picking of identifiable pieces of bonded asbestos from waste soils in a dedicated enclosed picking line ● All treatment and storage shall take place on an impermeable surface with a sealed drainage system within the dust shed building ● Waste subject to this process shall only be contaminated with asbestos alone or in combination with hydrocarbons. ● Asbestos removed from the soil shall be double-bagged and stored in a sealed locked skip. ● Temporary storage of hazardous waste following treatment prior to further treatment on site or off-site disposal. <p>Subject to any other requirements of this permit wastes shall be stored for no longer than 1 year prior to disposal.</p>
Temporary storage of hazardous waste pending treatment on site (AR8)	<p><u>Table S1.1 activities</u></p> <ul style="list-style-type: none"> ● All hazardous waste shall be stored on an impermeable surface with a sealed drainage system. ● Asbestos contaminated soil shall be stored either within the dust shed building in a way that minimises asbestos fibre emissions or stored externally, ensuring it remains damped down and covered, unless being transported, so as to minimise potential asbestos fibre emissions. ● The maximum amount of asbestos contaminated soil to be stored externally shall not exceed 10,000 tonnes. ● Asbestos removed from the soil shall be double-bagged and stored in a sealed locked skip. <p>Subject to any other requirements of this permit wastes shall be stored for no longer than 1 year prior to disposal.</p>
Permitted waste types and quantities	
Permitted waste types and quantities for handpicking of asbestos waste	<p><u>Table S2.4 Permitted waste types and quantities for handpicking of asbestos waste</u></p> <ul style="list-style-type: none"> ● soil and stones containing hazardous substances (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye) (waste code 17 05 03*)) ● soil and stones other than those mentioned in 17 05 03 (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye))) (waste code 17 05 04*) ● construction materials containing asbestos (discrete pieces of bonded asbestos within the soil matrix only) (waste code 17 06 05*) <p>Exclusions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)</p> <p>Maximum quantity: In total no more than 89,999 tonnes per annum of hazardous waste and no more than 60,000 tonnes per annum of non-hazardous waste will be accepted for treatment at the site.</p>
Emission limits specified in the Environmental Permit	
Air testing within the dust shed building for the duration of the asbestos hand picking works and, once pre-operational condition 1 has been given written permission, at all times when the mechanical screening of waste soil is taking place.	<p><u>Table S3.3 Process monitoring requirements</u></p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required every 3 months during asbestos picking works.</p>
Outside air testing when asbestos contaminated soils are being received, handled and moved within the site	<p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required every 3 months during receipt, handling and movement of asbestos contaminated soil within the site</p>
Operational measure	

Consented process	Emission controls implemented under the Environmental Permit
Report on mechanical screener (pre-operational condition 1)	<p>Table S1.3 Pre-operational measures</p> <p>Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR2 a report shall be submitted for written permission detailing the following aspects:</p> <ul style="list-style-type: none"> Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design. Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site. Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed. <p>No mechanical pre-screening of asbestos contaminated soils under activity reference AR2 shall commence unless the Environment Agency has given prior written permission under this condition.</p>
Site drainage works	<p>Table S1.4 Improvement programme requirements</p> <p>The Operator shall complete the site drainage works within the dust shed building to:</p> <ul style="list-style-type: none"> seal the redundant manholes; install kerbing at both the entrance and exit; and install a drainage sump to collect any excess runoff generated from the spraying of water used to control dust and asbestos fibres. <p>Following completion of these works the operator shall submit a revised site drainage plan to the Environment Agency</p>
<p>Site: <u>Cornets End Recycling Facility</u>. Operator: NRS Meriden Aggregates Ltd Site address: Cornets End Lane, Meriden, Solihull, CV7 7LH Permit reference: <u>EPR/HB3802HF (V003)</u></p>	
Asbestos picking	<p>Introductory note</p> <p>Hazardous waste containing bonded asbestos will be hand-picked from an enclosed conveyor with water spray to prevent fibre releases...The remaining waste will be tested for fibre content and treated as non-hazardous waste where testing indicates fibre content is below the threshold. If the asbestos containing waste has other hazardous properties, the waste will first be treated by hand-picking of asbestos and then further treated by screening and/or washing where asbestos fibres are not present above the threshold. If the content of asbestos fibres is above 0.1% following hand-picking, the waste will be disposed of at a suitable landfill.</p> <p>The asbestos picking area will be enclosed and the waste will be sprayed with water to prevent release of fibres.</p>
Asbestos removal (AR1)	<p>Table S1.1 activities</p> <p>From receipt of waste through to storage of treated waste.</p> <ul style="list-style-type: none"> Treatment in a dedicated enclosed and abated picking line. [no details in the EP regarding the abatement] Asbestos removed from the waste shall: <ul style="list-style-type: none"> Be double-bagged and stored in a sealed locked container. not be transferred between different bulk containers, which shall be locked when not being loaded and shall not be stacked. <p>All treatment and storage shall take place on an impermeable surface with a sealed drainage system.</p>
Screening of hazardous waste (AR2)	<p>Table S1.1 activities</p> <p>From receipt of waste, including treated waste from Activity AR1, through to storage of treated waste in different size fractions.</p> <ul style="list-style-type: none"> Treatment shall take place on an impermeable surface with a sealed drainage system Waste containing asbestos shall not be screened.
Storage of waste pending operations (AR4)	<p>Table S1.1 activities</p>

Consented process	Emission controls implemented under the Environmental Permit
	<p>From receipt of waste through to submission for treatment.</p> <ul style="list-style-type: none"> All storage shall take place on an impermeable surface with a sealed drainage system Asbestos shall be stored in a locked container. Hazardous waste shall not be stored for more than 6 months The combined total of non-hazardous waste and hazardous waste stored shall not exceed 80,000 tonnes.
Storage of waste	<p>Table S1.1 activities</p> <p>Asbestos shall be stored in a locked container.</p>
Permitted waste types and quantities	
Storage of hazardous waste prior to disposal off-site.	<p>Table S1.1 activities</p> <p>No more than 10 m³ of asbestos shall be stored at any one time.</p>
Permitted waste types and quantities for asbestos removal	<p>Table S2.2 Permitted waste types and quantities for Activity AR1 – Asbestos removal</p> <ul style="list-style-type: none"> insulation materials containing asbestos – pieces/bonded asbestos only (waste code 17 06 01*) construction materials containing asbestos – pieces/bonded asbestos only (waste code 17 06 05*) <p>Exclusions:</p> <p>Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (fibres must be <0.1% w/w)</p> <p>Maximum quantity: ...waste accepted per year under...activity AR1 shall not exceed 30,000 tonnes per year.</p>
Emission limits specified in the Environmental Permit	
	<p>Table S3.2 Ambient air monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml. Monitoring locations in accordance with Dust Management Plan (see below)</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required monthly during receipt, handling and movement of asbestos contaminated wastes.</p>
Operational measure	
Dust Management Plan	<p>Table S1.4 Pre-operational measures for future development</p> <p>The operator shall submit a revised Dust Management Plan in writing to the Environment Agency for approval that includes proposals for the monitoring of asbestos fibres in air at the site boundary. The Plan shall be updated to include:</p> <ul style="list-style-type: none"> A drawing showing the location of the proposed monitoring points which shall be up and down wind of the treatment area; and A monitoring methodology...
<p>Site: <u>Ellesmere Port Waste Treatment Facility</u> Operator: Dunton Technologies Limited Site address: North Road, Ellesmere Port, Cheshire, CH65 1BL Permit reference: <u>EPR/HP3403BL</u> and <u>Decision Document</u></p>	
Physico-chemical treatment of hazardous waste soils (asbestos picking)	<p>Introductory note</p>

Consented process	Emission controls implemented under the Environmental Permit
	<p>The environmental permit allows Dunton Technologies Limited to operate a Hazardous Waste Treatment Facility for the following installation activities at the Ellesmere Port Waste Treatment Facility:... Physico-chemical treatment of hazardous waste soils (asbestos picking)</p> <p>Wastes are brought to the site in covered HGVs and are subjected to acceptance checks in line with the site’s pre-acceptance, acceptance and rejection procedures. Once accepted, the wastes are moved to the reception area from where they are sorted (depending on composition and destined treatment process) into bioremediation or asbestos picking treatment process.</p> <p>All wastes containing asbestos will be brought onto site in enclosed/sheeted vehicles. Asbestos wastes from single source will not be mixed with asbestos contaminated wastes from other sites. Once asbestos contaminated soils have been accepted, the materials will be unloaded into specially designed storage bays from where they will be moved to the treatment facility. The facility consists of a purpose-built picking station comprising an enclosed conveyor belt that transfers waste from the hopper to the enclosed airtight cabin. The wastes are wetted down prior to removal from the asbestos storage bays and are loaded onto a hopper which is equipped with spray bars for additional dust and asbestos fibre control. The storage bays for incoming wastes, the asbestos picking cabin and storage area treated soils are all enclosed and fitted with abatement equipment consisting of carbon filter (for VOCs control), bag and HEPA filters (for dust and fibre control).</p>
Treated and residual wastes management	<p><u>Treated and residual wastes management</u></p> <p>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...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.</p>
Soil screening	<p><u>Consultation Responses</u></p> <p>...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.</p>
Pre-treatment of waste and oversize materials	<p><u>Pre-treatment of waste and oversize materials</u></p> <p>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.</p>
Asbestos removal from wastes (AR2)	<p><u>Table S1.1 activities</u></p> <p>From storage of wastes to treatment via hand picking and despatch of waste off-site.</p> <ul style="list-style-type: none"> • Treatment in a dedicated enclosed and abated picking cabin. • The air extraction system must be operational during picking operations. • Wastes containing asbestos shall not be subject to mechanical screening and/or sorting. • All storage and treatment shall take place on an impermeable surface with a sealed drainage system and dust/fibre abatement and suppression systems. • Asbestos removed from the waste shall be double-bagged and stored in a sealed locked skip.
Storage of hazardous waste prior to on-site treatment for the purpose of recovery (AR3)	<p><u>Table S1.1 activities</u></p> <p>From receipt of waste to its treatment.</p> <ul style="list-style-type: none"> • All storage shall take place on an impermeable surface with a sealed drainage system. • All incoming wastes shall be stored under cover within a designated reception/ treatment areas.
Mechanical screening and sorting of waste to remove any materials not suitable for bioremediation and/ or solidification and/or stabilisation (AR4)	<p><u>Table S1.1 activities</u></p> <ul style="list-style-type: none"> • All treatment must take place on an impermeable surface with sealed drainage. • No pre-treatment of asbestos containing materials. • Separated oversize fractions shall be stored separately prior to removal off site.

Consented process	Emission controls implemented under the Environmental Permit
Storage of treated wastes from asbestos picking and bioremediation treatment activities (AR5)	<p>Table S1.1 activities</p> <ul style="list-style-type: none"> Treated waste to be stored on an area of impermeable surface with sealed drainage. No mixing of waste treated by asbestos picking with waste treated by bioremediation except where the treated asbestos waste is being accepted for bioremediation under activity AR1 [Biological treatment of hazardous waste for recovery]
Abatement systems (AR8)	<p>All storage and treatment areas to be vented through two activated carbon absorption units fitted in series followed by a HEPA/bag filters. Treated air to be vented via the identified emission points.</p>
Permitted waste types and quantities	
Storage of hazardous waste prior to on-site treatment for the purpose of recovery	<p>Table S1.1 activities (AR4)</p> <ul style="list-style-type: none"> Maximum quantity of waste stored for treatment by asbestos picking is limited to 2976 tonnes at any one time.
Storage of treated wastes from asbestos picking and bioremediation treatment activities	<p>Table S1.1 activities (AR5)</p> <ul style="list-style-type: none"> Maximum quantity of waste stored after treatment by asbestos picking is limited to 2880 tonnes at any one time. Maximum quantity of oversize fraction stored following pre-treatment operation is limited to 1,080 tonnes
Manual picking of asbestos waste	<p>Table S2.3 Permitted hazardous waste types and quantities for AR2 Activity of Table S1.1 – Manual picking of asbestos waste</p> <ul style="list-style-type: none"> soil and stones containing hazardous substances (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye) (17 05 03*) construction materials containing asbestos (discrete pieces of bonded asbestos within the soil matrix only) (17 06 05*) other construction and demolition wastes (including mixed wastes) containing hazardous substances (discrete pieces of bonded asbestos within the soil matrix only) (waste code 17 09 03*) <p>Exclusions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. other forms or mixed forms of asbestos in the soil must be <0.01% w/w);</p> <p>Maximum quantity: The total quantity of waste accepted for treatment at the site shall not exceed 67,000 tonnes per year.</p>
Emission limits specified in the Environmental Permit	
Abatement units at the asbestos storage bays and treatment cabin	<p>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</p> <p>Asbestos fibres monthly – no limit specified</p>
Monitoring requirements	
Downwind of the asbestos treatment area	<p>Table S3.4 Ambient air monitoring requirements</p> <p>An hour sampling per month when asbestos handling and picking is in operation</p> <p>Reporting of monitoring data due every 3 months</p>

Consented process	Emission controls implemented under the Environmental Permit
<p>Site: <u>Finningley Quarry Waste Facility</u>. Operator: Tetron Finningley LLP Site address: Old Bawtry Road, Austerfield, Doncaster, DN9 3BZ Permit reference: <u>EPR/NB3039RM (V003)</u> and <u>Decision Document</u></p>	
<p>Picking and washing of asbestos containing material</p>	<p><u>Introductory note</u></p> <p>The site is split into 4 distinct areas...Area 3: picking and washing of asbestos containing material (ACM) soil/mineral-based waste...</p> <p>The treatment of asbestos (Area 3) is fully contained within a building fitted with an air management system retaining a negative pressure. The building has a point source emission to air that will be subject to monitoring [details below]...There are no discharges of water from the site.</p> <p><u>Asbestos and PM10 Emissions</u></p> <p>The risk of release of asbestos fibres will be minimal as the building is air tight and fitted with automated roller shutter doors. Dampening down procedures are in place to minimise dust and asbestos fibre emissions. All extracted air is filtered through a bag filter before release to air. The bag filter will be fitted with High Efficiency Particulate Air (HEPA) filters. The filters will be inspected and changed in accordance with the manufacturers' recommendations.</p>
<p>Treatment of construction wastes and soils impacted with identifiable pieces of bonded asbestos by handpicking, using a dedicated enclosed picking line (AR2)</p>	<p><u>Table S1.1 activities</u></p> <p>From treatment of hazardous waste through to storage of treated waste.</p> <ul style="list-style-type: none"> • Treatment in an enclosed building and an abated picking line • All treatment and storage shall take place on an impermeable surface with a sealed drainage system. • Asbestos removed from the soil shall be double-bagged and stored in a sealed, locked skip. • Operations shall be limited to area 3. • Storage of treated waste shall not exceed 250 tonnes. • A maximum of 50,000 tonnes of bonded asbestos-impacted waste shall be treated through handpicking and washing per year. <p><u>Treatment of soils impacted by bonded asbestos</u></p> <p>All waste is stored and treated within an enclosed building. Prior to picking, the soils will be stored within marked bays inside the designated building.</p> <p>All waste is stored and treated within an enclosed building fitted with negative pressure and appropriate abatement equipment.</p>
<p>Treatment of soils impacted with identifiable pieces of bonded asbestos by washing (AR3)</p>	<p><u>Table S1.1 activities</u></p> <p>From treatment of waste through to storage of separated waste fractions (some of which will continue to be impacted with bonded asbestos cement and require handpicking), and filter cake (from the filter press).</p> <ul style="list-style-type: none"> • Treatment in a soil washing barrel wash plant, including water treatment, settlement, filtration and filter press. • All treatment and storage shall take place on an impermeable surface with a sealed drainage system. • The washing of asbestos impacted wastes shall not increase the asbestos fibre load in the waste. • Operations shall be limited to area 3. • Storage of treated waste shall only take place inside a building within designated bays. • Asbestos contaminated soil shall be stored on site in a way that minimises asbestos fibre emissions such as spraying, sheeting etc. • Asbestos contaminated soil fractions not subject to further picking of asbestos shall be appropriately contained for disposal (double-bagged and/or stored in a lined, sealed locked skip). <p>Storage of treated waste shall not exceed 250 tonnes.</p>

Consented process	Emission controls implemented under the Environmental Permit
	A maximum of 50,000 tonnes of bonded asbestos-impacted waste shall be treated through handpicking and washing per year.
Permitted waste types and quantities	
Treatment of soils impacted with identifiable pieces of bonded asbestos by washing (AR3)	<p>Table S1.1 activities</p> <p>Storage of treated waste shall not exceed 250 tonnes. A maximum of 50,000 tonnes of bonded asbestos-impacted waste shall be treated through handpicking and washing per year.</p>
The temporary storage of hazardous waste prior to on-site treatment (AR4)	<p>Table S1.1 activities</p> <p><u>No more than 200 tonnes of hazardous asbestos impacted waste feedstock (AR2 & AR3) shall be stored at any time.</u></p>
Permitted waste types and quantities for asbestos treatment	<p>Table S2.3 Permitted waste types and quantities for AR2 & AR3 - Asbestos Treatment</p> <ul style="list-style-type: none"> • mixture of concrete, brick, tiles and ceramics which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 01 07 and 17 06 05*) • soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 17 05 04 and 17 06 05*) • soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 19 12 12 & 17 06 05*) • soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person, if examined by the naked eye) (waste codes 19 13 02 & 17 06 05*) <p>Exceptions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w)</p> <p>Maximum quantity: The total quantity of wastes accepted at the site shall not exceed 375,000 tonnes per year.</p> <p>No more than 50,000 tonnes of waste shall be accepted for activities AR2 and AR3 in total.</p>
Emission limits specified in the Environmental Permit	
Air Extraction System point source emissions	<p>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</p> <p>Asbestos fibres emission limit = 0.1 fibre/ml (hourly average).</p> <p>Monitoring required monthly but may be reduced to a quarterly frequency after 12 monthly monitoring events with the written agreement of the Environment Agency</p>
Outside air testing when asbestos contaminated soils are being received, handled and moved within the site.	<p>Table S3.3 Process monitoring requirements</p> <p>Asbestos fibres emission limit = 0.01 fibres/ml.</p> <p>Where total fibre concentration exceeds 0.01 fibres/ml in any sample, that sample must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required during receipt, handling and movement of asbestos contaminated soil within the site.</p> <p>The downwind asbestos monitoring locations are located on the north eastern boundary of Area 3 and the upwind asbestos monitoring locations are located on the western and southern boundaries of Area 3 which also the western and southern boundaries of the permit boundary.</p>

Consented process	Emission controls implemented under the Environmental Permit
	Reporting of monitoring data due every 6 months
Operational measures	
Pre-operational measures - report on the air extraction system	<p>Table S1.4 Pre-operational measures for future development</p> <p>Operation of the installation activities AR2 and AR3:</p> <p>At least 4 weeks (or any other date as agreed with the Environment Agency) prior to commissioning of the installation, the operator shall provide a written report on the air extraction system for the installation for approval by the Environment Agency. The report shall include the following:</p> <ul style="list-style-type: none"> • an assessment of the building fabric for potential fugitive emission routes to air, and any actions taken to rectify the potential routes. • an assessment of the air extraction system demonstrating that the building is under effective negative pressure and that all air extracted is emitted via the air filtration system. <p>No site operations shall commence or waste accepted at the installation unless the Environment Agency has given prior written permission under this condition.</p>
<p>Site: <u>Horseley Field Waste Treatment Facility</u>. Operator: Dunton Environmental Limited Site address: Lower Horseley Field, Union Mill Street, Wolverhampton, WV1 3DW Permit reference: <u>EPR/BP3331DD</u> and <u>Decision Document</u></p>	
Physico-chemical treatment of hazardous waste (asbestos treatment)	<p>Introductory note</p> <p>The facility consists of two installation treatment activities and associated waste storage... The site will accept hazardous waste including soils contaminated with...asbestos containing materials...Installation activities include... Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment of hazardous waste (asbestos treatment). This activity consists of the storage and picking of asbestos containing materials from contaminated waste. The Operator will utilise enclosed storage and enclosed treatment served by an appropriate extraction and abatement system. This activity will not include the treatment of wastes containing hazardous levels of fibrous asbestos.</p> <p>The site has two point source air emissions from the site's emissions abatement equipment...Site abatement will include...an electrostatic precipitator/bag filter for the treatment of emissions from the enclosed asbestos storage and picking processes. All reception, treatment and storage area will be on an impermeable surface with sealed drainage. Waste storage will be appropriately segregated to prevent cross contamination.</p>
Ex-situ treatment of waste contaminated with asbestos containing materials by picking (AR2)	<p>Key issues of the decision: Treatment of soil containing asbestos containing materials</p> <p>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...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.</p> <p>Table S1.1 activities</p> <p>From receipt of waste to storage and treatment of waste in enclosed picking station with abatement prior to being...sent offsite for disposal or recovery.</p> <ul style="list-style-type: none"> • The extraction system must be operational during storage and treatment. • Waste subject to this process shall only be hazardous due to asbestos contamination or hydrocarbon contamination. • This activity will not include the treatment of wastes containing hazardous levels of fibrous asbestos.

Consented process	Emission controls implemented under the Environmental Permit
	<p>Introductory note</p> <p>Site abatement will include...an electrostatic preceptor/bag filter for the treatment of emissions from the enclosed asbestos storage and picking processes.</p>
Storage of treated non-hazardous waste from asbestos (AR4)	<p>Table S1.1 activities</p> <p>To be stored on an area of impermeable surface with sealed drainage.</p>
Storage of asbestos in bags within skips (AR7)	<p>Table S1.1 activities</p> <p>Asbestos waste shall be double bagged and kept within clearly identified, segregated, secure, lockable containers on an impermeable surface with sealed drainage system.</p> <p>All treatment must take place on an impermeable surface with sealed drainage.</p>
Permitted waste types and quantities	
Permitted waste types and quantities for asbestos picking	<p>Table S2.3 Permitted waste types and quantities for asbestos picking</p> <ul style="list-style-type: none"> • construction materials containing asbestos (waste code 17 06 05*) • soil and stones containing hazardous substances (waste code 17 05 03*) <p>Maximum quantity: Annual throughput shall be less than 200,000 tonnes for all activities.</p>
Emission limits specified in the Environmental Permit	
Electrostatic precipitator/bag filter exhaust	<p>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</p> <p>Asbestos fibres – no limit or monitoring frequency specified. To be confirmed through pre-operational condition.</p>
Downwind of asbestos treatment area	<p>Table S3.3 Ambient air emission limits and monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml</p> <p>Monitoring frequency specified as per references IC6a and IC6b [see below]</p> <p>Table S4.1 Reporting of monitoring data</p> <p>Reporting of monitoring data downwind of asbestos activities is required every 3 months.</p>
Operational measures	
Asbestos monitoring	<p>Table S1.3 Improvement programme requirements</p> <p>7 months after commencement of all site treatment operations the Operator shall undertake 6 months of...asbestos monitoring...and submit a report to the Environment Agency for written approval which reviews the ...whether ambient air monitoring environmental standards for...asbestos fibres are being achieved (reference IC5).</p> <p>The Operator shall undertake daily asbestos monitoring for the first week of commencing asbestos storage and treatment and submit results the Environment Agency for Written Approval (reference IC6a).</p> <p>Following completion of IC6a, if emissions of asbestos fibres are demonstrated as being less than 0.01 fibres/ml, once approved by the Environment Agency, the Operator may reduce asbestos monitoring frequency to weekly for the next 5 weeks and submit results to the Environment Agency. If following the 5 week period referred to above, if emissions are demonstrated as being consistently less than 0.01 fibres/ml, if approved by the Environment Agency, the Operator may reduce asbestos monitoring</p>

Consented process	Emission controls implemented under the Environmental Permit
	frequency to monthly. In the event asbestos emissions above 0.01 fibres/ml are detected during monthly monitoring the Operator shall propose more frequent monitoring and timescales for implementation to the Environment Agency for written approval. The Operator shall implement more frequent monitoring in line with the timescale agreed with the Environment Agency (reference IC6b).
Site: <u>Land Recovery Limited Waste Facility</u>. Operator: Land Recovery Limited Site address: Chemical Lane, Tunstall, Stoke-on-Trent, ST6 4NU Permit reference: <u>EPR/PP3839YT (V004)</u>	
	Introductory Note There is no treatment of asbestos waste and there are limits to the waste types which can be accepted under AR9.
Physical screening of hazardous waste (AR1)	<u>Table S1.1 activities</u> From receipt of hazardous waste materials to despatch of waste off site for recovery and/or disposal. <ul style="list-style-type: none"> • Treatment will be limited to mechanical screening of wastes into different categories for recovery or disposal for despatch off site. • Hazardous wastes detailed in Table S2.6 shall not be treated on site and shall only be stored and bulked up pending despatch off site for recovery or disposal. • No treatment of asbestos wastes shall take place on site other than double bagging prior to storage in a sealed skip. • Treatment of all hazardous wastes shall be carried out on an impermeable pavement with sealed drainage.
Hazardous waste transfer facility (AR4)	<u>Table S1.1 activities</u> From the receipt of waste to despatch off site for recovery and/or disposal. <ul style="list-style-type: none"> • Wastes will be stored securely on an impermeable surface with sealed drainage system. • No asbestos wastes shall be mechanically handled on site. • All asbestos wastes shall be double-bagged and stored in a sealed locked skip.
Permitted waste types and quantities	
Storage of asbestos waste	<u>Table S1.1 activities</u> The maximum storage capacity of asbestos waste shall not exceed 50 tonnes at any one time.
Permitted waste types containing asbestos	<u>Table S2.2 Permitted waste types and quantities for activities AR1 & AR4 storage, treatment and transfer of hazardous waste</u> <ul style="list-style-type: none"> • metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers (asbestos double bagged) (waste code 15 01 11*) • insulation materials and asbestos-containing construction materials (waste code 17 06 01*, 17 06 03*) • construction materials containing asbestos (waste code 17 06 05*) <u>Table S2.6 Permitted waste types suitable only for storage on site</u> <ul style="list-style-type: none"> • metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers (asbestos double bagged) (bulked into sealed containers for storage/transfer) (waste code 15 01 11*) • insulation materials containing asbestos (waste code 17 06 01*) • construction materials containing asbestos (Non-bulk wastes delivered in sealed double bags or wrapping for transfer into sealed container for storage/transport) (waste code 17 06 05*) • construction materials containing asbestos (Non-bulk wastes delivered in sealed container for storage only) (waste code 17 06 05*) • construction materials containing asbestos (Bulk wastes delivered in bulk consisting only of wastes contaminated or suspected to be contaminated with Asbestos or Asbestos containing materials (ACM) (waste code 17 06 05*)

Consented process	Emission controls implemented under the Environmental Permit
Emission limits specified in the Environmental Permit	
Asbestos emission limits	None specified in the Environmental Permit
Site: <u>Mepal Soil and Waste Treatment Centre</u> Operator: Mick George Limited Site address: Witcham Meadlands Landfill Site, Block Fen Drove, Mepal, Chatteris, Cambridgeshire, CB6 2AY Permit reference: <u>EPR/EP3492SP (V07)</u> and Decision Document	
Storage of soils containing asbestos	<p><u>Key issues of the decision</u></p> <p>Prior to treatment soils containing asbestos will be stored in 4 pre-treatment asbestos bays within their building...Dampening down procedures are in place to minimise...asbestos fibre emissions. The soils are loaded onto the conveyor belt using a 360 excavator. The excavator/loading shovel is operated in a manner that does not unduly disturb the material.</p> <p>The permit allows the segregation of bonded asbestos from the soils/aggregates to allow the soils ad aggregates to proceed with further treatment via the soil washing facility. The bonded asbestos, once separated from the incoming waste streams will be double bagged and then sent to the Mepal landfill site for disposal.</p>
Physical treatment of asbestos for direct disposal or following further treatment by stabilisation or bioremediation (AR6)	<p><u>Table S1.1 activities</u></p> <p>Asbestos removal from soils and construction and demolition waste</p> <ul style="list-style-type: none"> • Treatment consisting only of hand picking of identifiable pieces of bonded asbestos from waste soils in a dedicated enclosed picking line located within the asbestos treatment building. • Asbestos removed from the soil shall be double bagged and kept within clearly identified, segregated, secure, lockable container located within the asbestos treatment building. • All treatment and storage shall take place on an impermeable surface with a sealed drainage system within the asbestos treatment building. • ...wastes shall be stored for no longer than 6 months prior to disposal. <p><u>Key issues of the decision</u></p> <p>Waste will be processed via a dedicated picking station which will consist of a raised conveyor belt...The treated soils are then deposited via a mobile conveyor belt into one of 4 post-treatment asbestos bays in the building whilst they await further compliance testing. Soils that meet the compliance testing will either be further treated on the site or used in the adjacent landfill.</p> <p>To ensure that asbestos fibre emissions are not released from the treatment process air testing for asbestos fibres will also be undertaken within the building during the handpicking works. The air testing will ensure the waste acceptance and dampening down procedures proposed remain effective...The building will use a bag filter as an air emissions abatement method coupled with the building being under negative pressure. The bag filter will use a HEPA (High Efficiency Particulate Air) filter...In addition operators within the building will have personal asbestos detection pumps.</p> <p><u>Decision checklist</u></p> <p>The addition of the handpicking of identifiable pieces of asbestos is undertaken within a building. The building is not sealed but the risks of...asbestos fibre emission generation is considered to be low...</p>
Permitted waste types and quantities	
The storage of hazardous waste (AR7)	<p><u>Table S1.1 activities</u></p> <p>Asbestos storage prior to treatment is limited to 4,000 tonnes at any one time.</p> <p><u>Table S2.5 Permitted waste types and quantities for handpicking of asbestos waste (AR6, AR7)</u></p>

Consented process	Emission controls implemented under the Environmental Permit
	<ul style="list-style-type: none"> • Concrete, bricks, tiles and ceramics (alone or in mixtures) containing hazardous substances (waste code 17 01 06*) • soil and stones containing hazardous substances (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 05 03*) • soil and stones other than those mentioned in 17 05 03 (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 05 04) • construction materials containing asbestos (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 06 05*) • other construction and demolition wastes (including mixed wastes) containing hazardous substances (contains identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 09 03*) <p>Exclusions:</p> <p>Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in soil and construction and demolition wastes must be <0.1% w/w. Other forms or mixed forms of fibrous asbestos in the soil must be <0.01% w/w.)</p> <p>Maximum quantity:</p> <p>In total no more than 150,000 tonnes per annum of hazardous waste will be accepted for treatment at the site</p>
Emission limits specified in the Environmental Permit	
Air extraction via bag filter release point	<p>Table S3.1 Emission and monitoring</p> <p>Asbestos fibres emission limit = 0.1 fibre/ml (hourly average).</p> <p>Monitoring required monthly but may be reduced to a quarterly frequency after 12 monthly monitoring events with the written agreement of the Environment Agency</p>
Air testing within the asbestos treatment building for the duration of the asbestos hand picking works	<p>ER Table S3.3 Process monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required during asbestos hand picking works although frequency may be reduced to a frequency agreed in writing by the Environment Agency after 6 months of continuous monitoring.</p> <p>Reporting of monitoring data due every 3 months.</p>
20m downwind of asbestos building, 50m upwind of asbestos building and site boundary downwind of asbestos building	<p>ER Table S3.3 Process monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required monthly.</p> <p>Reporting of monitoring data due every 3 months.</p>
Sealed drainage tank within asbestos building	<p>ER Table S3.3 Process monitoring requirements</p> <p>Where process water from the tank is reused on site total asbestos fibre concentration must be less than 0.001 fibres/ml.</p>

Consented process	Emission controls implemented under the Environmental Permit
	<p>Monitoring required monthly.</p> <p>Reporting of monitoring data due every 3 months.</p>
Operational measures	
<p>Site: Mohawk Wharf Recycling Facility. Operator: Keltbray AWS Limited Site address: Mowhawk Wharf Bradfield Road Silvertown London E16 2AX Permit reference: EPR/FP3092LH/V005</p>	
Asbestos treatment	<p><u>Introductory note</u></p> <p>The new asbestos treatment activity constitutes a picking line whereby trained operatives pick visible asbestos fragments from asbestos containing wastes on a conveyor belt. The management of waste in this building is compliant with BAT measures for dusty wastes and is controlled by a dust emissions management plan. All asbestos containing waste loads are only deposited in the building when the building doors are closed. The waste is dampened during this process and is dampened frequently throughout the treatment. The treatment building will be held under negative pressure and benefit from air abatement in the form of a high efficiency particulate air (HEPA) filter. This filter removes airborne asbestos fibres from the air extracted from the building.</p>
Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment (AR3)	<p><u>Table S1.1 activities</u></p> <p>From receipt of waste through to storage of treated waste.</p> <ul style="list-style-type: none"> • Treatment in a dedicated enclosed and abated picking line. • All treatment and storage shall take place on an impermeable surface with a sealed drainage system. • Asbestos removed from the soil shall be double-bagged and stored in a sealed locked skip.
Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes (AR4)	<ul style="list-style-type: none"> • Storage of all hazardous wastes shall be carried out on an impermeable pavement with sealed drainage. • Storage shall not exceed 10,000 tonnes. • All storage of asbestos containing waste shall be within the asbestos treatment building.
Post treatment screening of non-hazardous waste to remove any materials which are not suitable for use (AR6)	<p>Wastes which have any of the following characteristics shall not be accepted:</p> <ul style="list-style-type: none"> • waste comprised or contaminated with asbestos;
Screening of waste (AR7)	<p>No wastes containing asbestos shall be treated under this activity</p>
Permitted waste types and quantities	
Treatment of hazardous waste through the picking line	<p><u>Table S1.1 activities</u></p> <p>Treatment of hazardous waste through the picking line shall not exceed 50,000 per annum</p>
Permitted waste types and quantities for AR3 and AR4 – temporary storage and physical treatment of asbestos containing waste.	<p><u>Table S2.4 Permitted waste types and quantities for AR3 and AR4 – temporary storage and physical treatment of asbestos containing waste.</u></p> <ul style="list-style-type: none"> • soil and stones containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye) (waste codes 17 05 03 and 17 06 05*) • soil and stones other than those mentioned in 17 05 03 which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye) (waste codes 17 05 04 and 17 06 05*) • other construction and demolition wastes (including mixed wastes) containing hazardous substances which are impacted with identifiable pieces of bonded asbestos (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye) (waste codes 17 09 03* and 17 06 05*)

Consented process	Emission controls implemented under the Environmental Permit
	<p>Exclusions: Wastes having any of the following characteristics shall not be accepted... Asbestos in unbound fibrous form (free chrysotile fibrous asbestos in the soil must be <0.1% w/w. Other forms or mixed forms of asbestos in the soil must be <0.01% w/w)</p> <p>Maximum quantity: Total annual throughput for the site shall not exceed 50,000 tonnes per annum of hazardous waste</p>
Emission limits specified in the Environmental Permit	
HEPA filter abatement plant serving asbestos treatment building.	<p>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</p> <p>No limit specified for asbestos fibres.</p> <p>Monitoring point (A1) located adjacent and to the west of the asbestos treatment building.</p> <p>Reporting of monitoring data due every 6 months.</p>
Ambient air monitoring during handling or treatment of asbestos	<p>Table S3.2 Ambient air monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required every 4 hours during handling or treatment of asbestos. The locations of M1, M2 and M3 are not clear from the EP. Reporting of monitoring data due every 3 months.</p>
Operational measures	
<p>Site: <u>Redhill Landfill Site</u>. Operator: Biffa Waste Services Limited Site address: Cormongers Lane, Nutfield, Redhill, Surrey, RH1 4ER Permit reference: EPR/BU8126IY (V018) and Decision Document</p>	
Waste acceptance and pre-acceptance	<p>Introductory Note: The variation authorises the operation of an asbestos picking station adjacent to the existing soil treatment facility located within Redhill Landfill Site. This will permit the handpicking of identifiable pieces of bonded asbestos from waste soils.</p> <p>Waste acceptance and pre-acceptance</p> <p>Acceptance will include testing for mixed forms of Amphibole fibrous asbestos in order to ensure that free fibrous asbestos within the soil matrix is low enough not to risk the release of fibre asbestos in unbound fibrous form.</p>
Soil movement	<p>Soil movement</p> <p>Vehicles delivering Asbestos Contaminated Materials (ACM) to the site will be covered to prevent dust and fibre releases during transportation. Once on site the soils will be unloaded within the dedicated ACM treatment area. Received soils will be directed to the appropriately signed tipping area. Stockpiles will be clearly signposted to distinguish whether the material is hydrocarbon contaminated or not.</p>
Asbestos removal from soils prior to bioremediation or off-site disposal (A4)	<p>Table S1.1 activities</p> <p>From receipt of hazardous waste through to storage of treated waste prior to being subject to bioremediation or sent off-site for disposal.</p> <ul style="list-style-type: none"> • Treatment consisting only of hand picking of identifiable pieces of bonded asbestos from waste soils in a dedicated enclosed picking line. • All treatment and storage shall take place on an impermeable surface with a sealed drainage system • Waste subject to this process shall only be contaminated with asbestos alone or in combination with hydrocarbons.

Consented process	Emission controls implemented under the Environmental Permit
	<ul style="list-style-type: none"> Asbestos removed from the soil shall be double-bagged and stored in a sealed skip. <p><u>Description of activities</u></p> <p>Soils will be received at the site in covered vehicles and directed to the appropriately signposted stockpiling area. Prior to treatment soil stockpiles will be stored outside on a concrete pad and covered with tarpaulin. The tarpaulin will only be removed prior to the stockpiles being broken down for transfer to the picking station. Damping down procedures are in place to minimise dust and fibre emissions. The soils will be loaded onto an enclosed conveyor belt using a tracked excavator. They will then travel into the raised portacabin like picking station.</p> <p>There are 4 picking stations within the picking booth. Operatives will place picked asbestos fragments into polythene bags located next to them. When full or at the end of each working day the bags will be sealed and placed within a second bag. The double bagged asbestos fragments will be carefully carried to the asbestos skip that will remain locked unless it is being loaded. The skips will be lined with plastic skip liners which prevent the skips from becoming contaminated. The skips are then removed with the contents tipped into the on-site stable hazardous non-reactive cell.</p> <p>Soils will have nil visible asbestos once picked and will move out of the picking station along the output conveyor before transfer to a designated second stockpile area. During material movement damping down equipment will be used as before.</p> <p>Soils will be transported about the site using dump trucks which prior to leaving the stockpiling areas will pass beneath a spray bar which will coat the soils in a layer of dust suppression liquid.</p> <p><u>Decontamination</u></p> <p>Anyone working with asbestos materials must do so in line with the Control of Asbestos Regulations 2012. On completion of works excavator buckets and tracks will be washed down with a low pressure wash in the designated “wash down” area by a site operative whilst the driver remains in their cab. After decontamination plant will be moved outside the designated asbestos contaminated material treatment area.</p> <p>When leaving the designated ACM treatment area operatives will wash their boots in the boot wash in the designated PPE transition zone. Spent PPE will be double bagged using red and clear asbestos bags and placed in a secured covered asbestos skip for off-site disposal via a licensed contractor.</p> <p><u>Surface waters</u></p> <p>Wash down water generated by the above decontamination procedure will be pumped into an intermediate bulk container to allow suspended solids to settle. The water will then pass through a 1 micron bag filter prior to transfer to the existing soil treatment facility water treatment system. These will capture any suspended asbestos particles. Once full the bags will be placed within the locked asbestos skip. Once this is full the waste will be placed within the stable non-reactive hazardous waste cell.</p> <p>All surface water runoff from the asbestos waste treatment and storage area will be directed to the existing soil treatment facility drainage system. This drains to a lagoon where waters are tested prior to discharge via oil/water separator to the surface drains around the site. This is considered acceptable as soil stockpiles will be covered when not being broken down. Operating techniques as described will prevent contaminated waters running off under normal circumstances.</p>
<p>Temporary storage of hazardous waste pending treatment or disposal (A5)</p>	<p><u>Table S1.1 activities</u></p> <p>Asbestos contaminated soil should be stored on an impermeable surface with a sealed drainage system...in a way that minimises asbestos fibre emissions.</p> <p>Subject to any other requirements of this permit wastes shall be stored for no longer than 1 year prior to disposal.</p>
Permitted waste types and quantities	
<p>Permitted quantity of asbestos contaminated soil at the soil treatment facility</p>	<p><u>Table S1.5 Annual waste input limits</u></p> <p>25,000 tonnes per year</p>

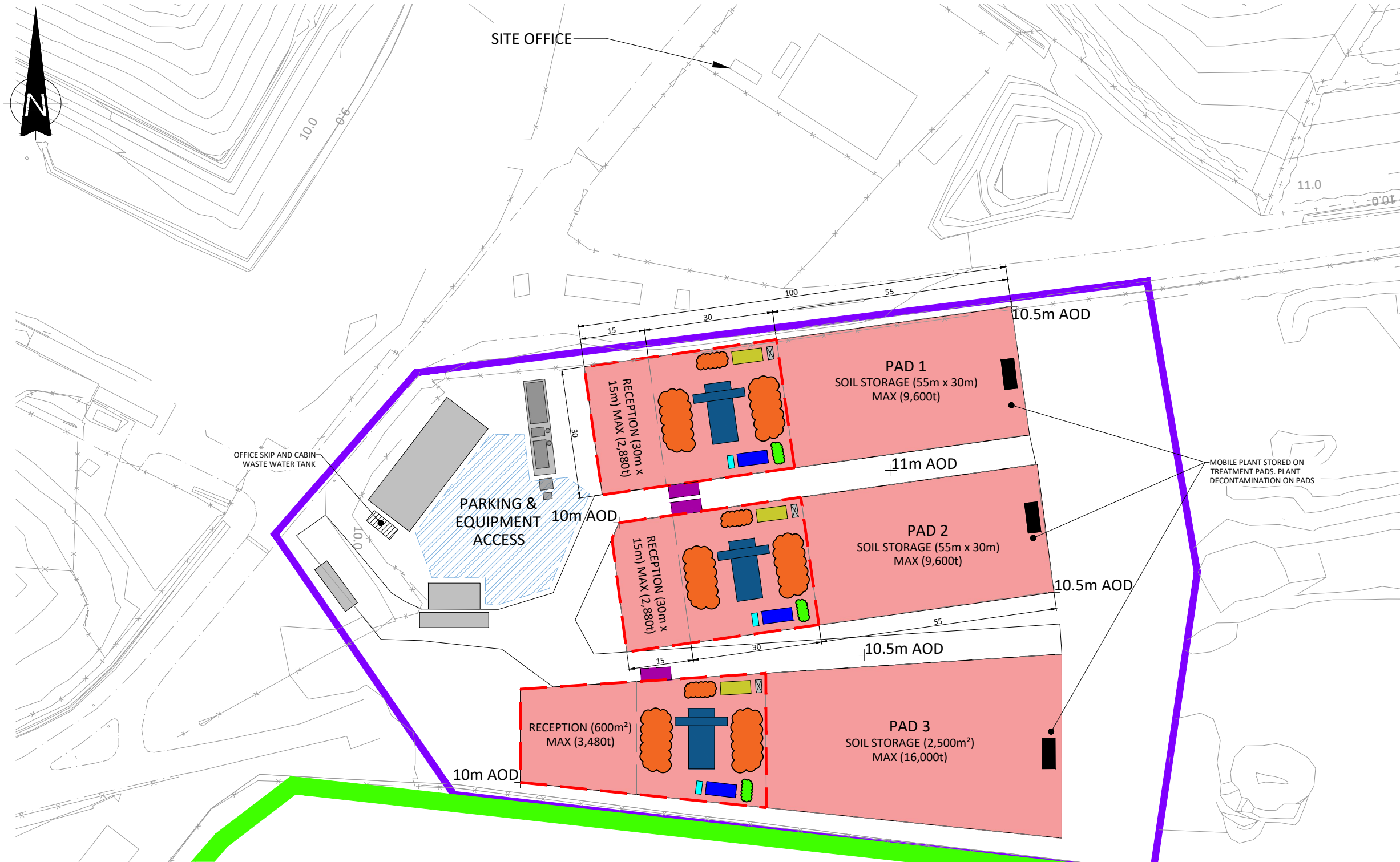
Consented process	Emission controls implemented under the Environmental Permit
Permitted waste types and quantities for handpicking of asbestos waste	<p>Table S2.5 Permitted waste types and quantities for handpicking of asbestos waste (Soil Treatment Facility A4)</p> <ul style="list-style-type: none"> soil and stones containing hazardous substances (CONTAINS IDENTIFIABLE PIECES OF BONDED ASBESTOS (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 05 03*) soil and stones other than those mentioned in 17 05 03 (CONTAINS IDENTIFIABLE PIECES OF BONDED ASBESTOS (any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye)) (waste code 17 05 04) construction materials containing asbestos (DISCRETE PIECES OF BONDED ASBESTOS WITHIN THE SOIL MATRIX ONLY) (waste code 17 06 05*) <p>Exclusions: Wastes having any of the following characteristics shall not be accepted: Asbestos in unbound fibrous form (FREE CHRYSOTILE FIBROUS ASBESTOS IN THE SOIL MUST BE < 0.1% w/w. OTHER FORMS OR MIXED FORMS OF FIBROUS ASBESTOS IN THE SOIL MUST BE <0.01% w/w)</p>
Emission limits specified in the Environmental Permit	
20m downwind of asbestos disposal cell,	<p>Table S3.7 Particulate matter in ambient air - monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required twice per year or every 5000 tonnes asbestos deposited, whichever is greater.</p> <p>Reporting of monitoring data due every 6 months.</p>
50m upwind of asbestos disposal cell	<p>Table S3.7 Particulate matter in ambient air - monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required during all downwind monitoring.</p> <p>Reporting of monitoring data due every 6 months.</p>
Site boundary downwind of asbestos disposal cell	<p>Table S3.7 Particulate matter in ambient air - monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required a minimum of twice per year.</p> <p>Reporting of monitoring data due every 6 months.</p>
Monitoring location M as shown on Figure 6 (Diagram of air monitoring locations within the Asbestos management Plan document)	<p>Table S3.15 Process monitoring requirements</p> <p>Asbestos fibres limit = 0.01 fibres/ml.</p> <p>Samples that exceed the limit must be submitted for electron microscopy to confirm the concentration of asbestos fibres present.</p> <p>Monitoring required twice weekly on 2 separate days and continuous sampling over a 4 hour period.</p>

Consented process	Emission controls implemented under the Environmental Permit
	Reporting of monitoring data due every 3 months.

Table 6. Summary of the comparison of the activities and controls at the consented soil treatment facilities

Site Name	Daneshill	Maw Green	Redhill Landfill Site	Edwin Richards Quarry	Cornets End, Meriden	Ellesmere Port Treatment Facility	Finningley Quarry	Horseley Fields	Mepal Soil and Waste Treatment Centre	Mohawk Wharf Recycling Facility
Permit Reference	EPR/NP3538 MF (V010)	EPR/BS7722ID (V010)	EPR/BU81 26IY (V018)	EPR/HP3632RP (V003)	EPR/HB3802H F (V003)	EPR/HP34 03BL	EPR/NB3039RM (V003)	EPR/BP3331DD	EPR/EP34 92SP (V007)	EPR/FP3092LH/V 005
Operator	FCC	3C waste	Biffa Waste Services Limited	3C waste	NRS Meriden Aggregates	Dunton Technologies	Tetron Finningley	Dunton Technologies	Mick George Limited	Keltbray AWS Limited
Information on the probable operational status based on a review of waste returns and anecdotal reports	Not operational	Not operational	Operational	Operational	Operational	Not operational	Not operational	Operational	Understood to be operational but the treated waste may only be landfilled rather than recovered.	Unclear if this site is operational
Asbestos waste codes	17 05 03* 17 06 05*	17 05 03* 17 06 05*	17 05 03* 17 06 05*	17 05 03* 17 06 05*	17 06 01* 17 06 05*	17 05 03* 17 06 05* 17 09 03*	17 06 05*	17 05 03* 17 06 05*	17 01 06* 17 05 03* 17 06 05* 17 09 03*	17 05 03* 17 06 05* 17 09 03*
Acceptance Criteria (asbestos in unbound fibrous form)	Chrysotile <0.1%, other types <0.01%	Chrysotile <0.1%, other types <0.01%	Chrysotile <0.1%, other types <0.01%	Chrysotile <0.1%, other types <0.01%	Asbestos <0.1%	Chrysotile <0.1%, other types <0.01%	Chrysotile <0.1%, other types <0.01%	Asbestos <0.1%	Chrysotile <0.1%, other types <0.01%	Chrysotile <0.1%, other types <0.01%
External Asbestos Soils Storage	No	No	Yes	Yes or building	Yes	Storage bays 'enclosed'	No	Storage bays 'enclosed' with extraction	No	No
Treatment in building	Yes	Yes	No	Yes	Not specified	Not specified but 'enclosed'	Yes	Yes	Yes	Yes
HEPA filter	Yes	Yes	No	Yes - active abatement system and HEPA (or similar) required by PO1	No	Yes	Yes	EP bag filter	Yes	Yes

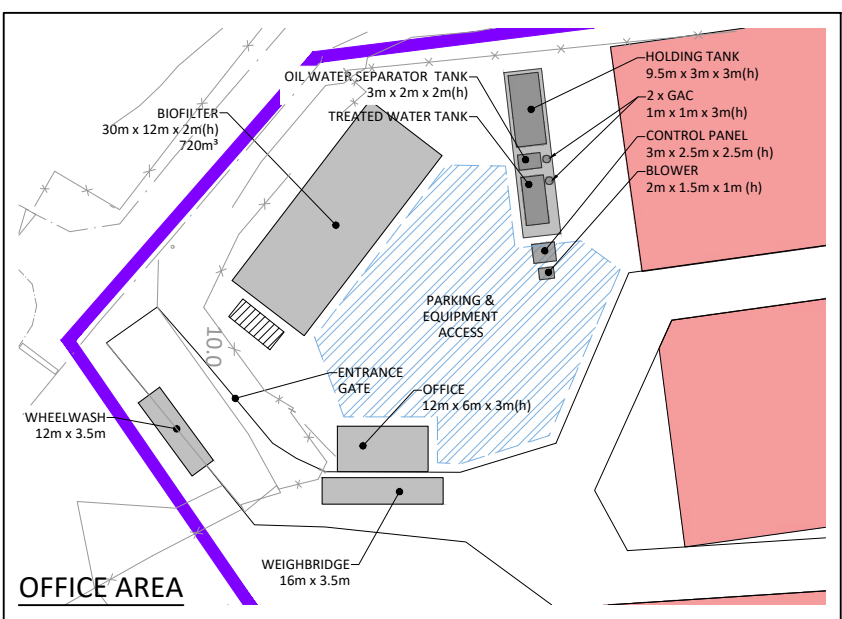
FIGURES



NOTES

- DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN METRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS NOTED OTHERWISE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.
- DESIGN BASED ON PROVECTUS DRAWING - DANESHILL 1

- LEGEND**
- AREA OF PROPOSED ACTIVITY
 - ASBESTOS CONTROLLED WORKING AREA
 - PICKING AREA
 - ASBESTOS SKIP
 - DECONTAMINATION AREA
 - INTEGRALLY BUNDED FUEL CUBE FOR PLANT USE
 - WASTE SKIPS - SOIL DERIVED REFUSE
 - 600kg BAGS OF AMMONIUM NITRATE IN WATERPROOF PACKAGING
 - 30m³ WOOD CHIP
 - FINES, OVERSIZE AND MID RANGE FRACTIONS
 - SOIL SCREENER



REV	MODIFICATIONS	BY	RE	AP	DATE
P04	AMENDED TO ENGINEERS COMMENTS	EJD	KB	KB	26.10.21
P03	AMENDED TO ENGINEERS COMMENTS	EJD	KB	KB	04.10.21
P02	WHEEL WASH POSITION AMENDED	EJD	KB	KB	01.10.21
P01	ISSUED FOR INFORMATION	EJD	KB	KB	30.09.21

PURPOSE OF ISSUE				STATUS	
FOR INFORMATION				S2	

CLIENT:

PROJECT:

DANESHILL SOILS TREATMENT FACILITY

TITLE:

SOILS TREATMENT PADS 1 / 2 / 3 SITE LAYOUT PLAN

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
KB	EJD	KB	KB

DATE	SCALE @ A3	JOB REF:	REVISION
29.09.2021	1:1000	3982	P04

DRAWING NUMBER

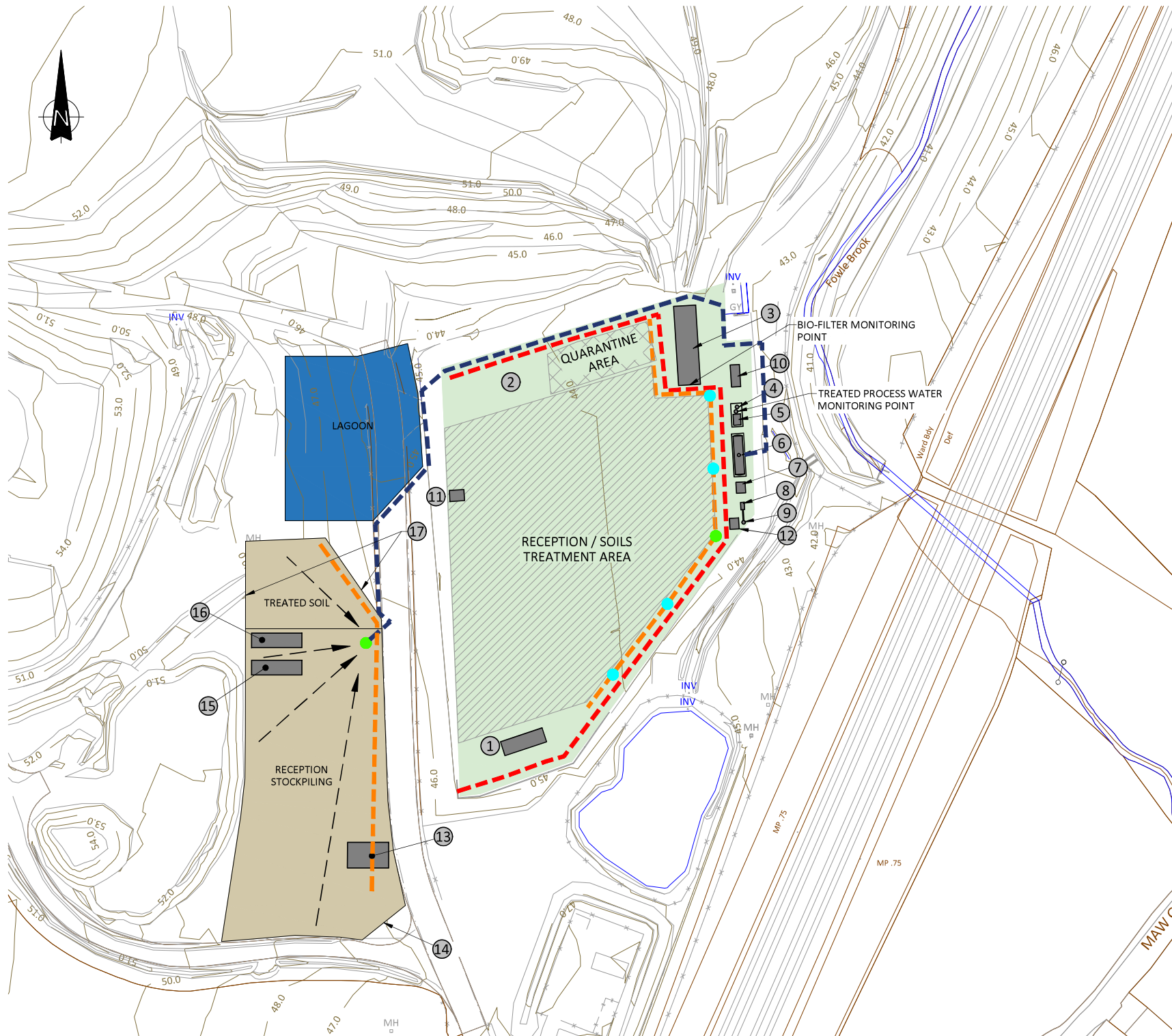
3982-CAU-XX-XX-DR-V-1807

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LEGEND

- CONCRETE IMPERMEABLE PAVING
- CRUSHED CONCRETE SITE SURFACING WITH GEO-COMPOSITE CLAY LINER (GCL)
- BOUNDARY KERB LINE
- WATER DRAINAGE PIPE
- DISCHARGE LINE
- FALL OF PAD
- DRAINAGE GULLY
- PUMPING CHAMBER
- 1 SITE OFFICE
- 2 NUTRIENT STORAGE
- 3 BIOFILTER
- 4 GRANULAR ACTIVATED CARBON FILTERS
- 5 TRANSFER TANK
- 6 PROCESS WATER SETTLEMENT TANK
- 7 10ft CONTAINER WITH CONTROL PANEL
- 8 BLOWER
- 9 AIR WATER SEPARATOR
- 10 20ft TOOL STORE
- 11 FUEL STORAGE
- 12 3WV
- 13 DECONTAMINATION UNIT
- 14 RECEPTION ENTRANCE AND EXIT
- 15 SOIL SCREENER
- 16 PICKING STATION
- 17 PLANT ENTRANCE AND EXIT

PO2	UPDATED TO CLIENT INSTRUCTION	EJD	SH	SH	13.12.22
PO1	ISSUED FOR INFORMATION	EJD	SH	SH	20.10.22
REV	MODIFICATIONS	BY	RE	AP	DATE
PURPOSE OF ISSUE					STATUS
FOR INFORMATION					S2

CLIENT:
3C WASTE LIMITED

PROJECT:
**MAW GREEN
SOILS TREATMENT FACILITY
PERMIT VARIATION**

TITLE:
PROPOSED SITE LAYOUT PLAN

DESIGNED BY EJD	DRAWN BY EJD	REVIEWED BY SH	AUTHORISED BY SH
DATE 19.10.2022	SCALE @ A3 1:1000	JOB REF: 5193	REVISION P02

DRAWING NUMBER
5193-CAU-XX-XX-DR-V-1805

146

engineering environmental planning

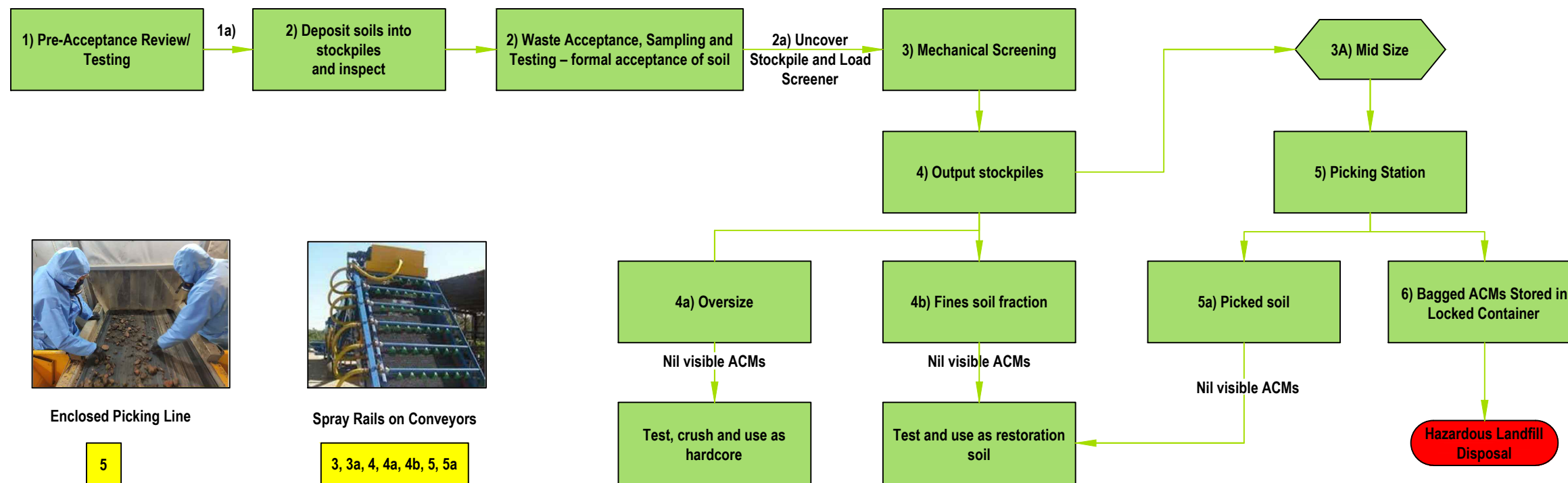
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Key / Notes

Process Stages (as described in detail in Table 1)



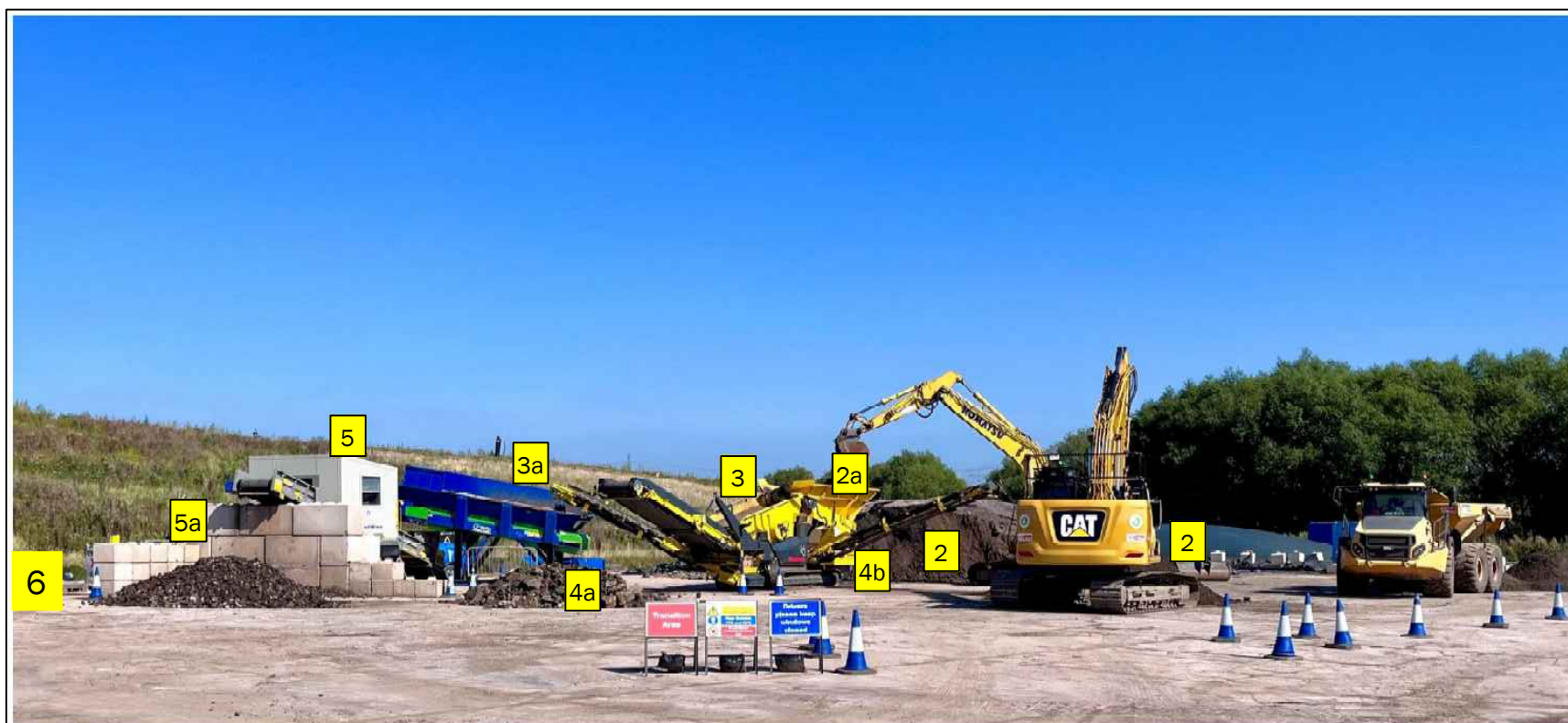
Enclosed Picking Line

5



Spray Rails on Conveyors

3, 3a, 4, 4a, 4b, 5, 5a



Fixed and mobile dust suppression equipment

2, 2a, 3, 4, 4a, 4b, 5, 5a



Covered Stockpile

2



Asbestos Skip

6

Rev	Status	Drn	App	Chk	Date
	Final	TL	LH	LH	20/02/24

Site
DANEHILL AND MAW GREEN SOIL TREATMENT FACILITIES

Client
FCC Recycling (UK) Limited

Title
Proposed treatment activity process stages

Figure 3 Scale 1:1,250@A3

Drawing Ref
FCC/DH/01-24/24125

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