

APP/EPR/636, 651 & 652

**IN THE MATTER OF:
THE ENVIRONMENTAL PERMITTING REGULATIONS (ENGLAND AND WALES) 2016**

AND

**AN APPEAL BY FCC RECYCLING (UK) LIMITED And 3C WASTE LIMITED AGAINST THE
DANESHILL SOIL TREATMENT FACILITY REFUSAL AND SUBSEQUENT VARIED PERMITS
ISSUED AT DANESHILL LANDFILL SITE AND MAW GREEN LANDFILL SITE FOR THE
MECHANICAL SCREENING OF ASBESTOS CONTAMINATED SOILS**

PROOF OF EVIDENCE OF

Paul Barker, Senior Advisor - Hazardous Waste Treatment

Environment and Business - Environment Agency

Personal information

1. My name is Paul Barker. I am a Senior Advisor on Hazardous Waste treatment. I work within the Environment Agency's ("the Agency") Regulated Industry - Waste Regulation department in the Treatment, Transfer and Storage team under the Environment and Business Directorate. I am based at Manley House, Kestrel Way, Exeter, Devon, EX2 7LQ.
2. I provide technical advice and support to waste operators, the National Permitting Service and our regulatory officers on storage and treatment of hazardous waste. This involves explaining what the appropriate storage and treatment standards are under both Best Available Techniques ("BAT") for waste installation facilities permits and appropriate measures for waste operation facility permits. The Waste Treatment and Storage Team I work in have been involved in the development and implementation of BAT for many years. The Team is made up of two sub-teams namely: The Non-hazardous and Biowaste treatment which is led by Howard Leberman who was the UK Representative for 2nd BREF in 2018 and my team leader Paul Fernee for Hazardous Waste Treatment and Metal Recycling who was the UK rep on the 1st BREF in 2006.
3. I have held this particular post since December 2022 and I am considered 'technically competent' and 'experienced' by my managers to carry out my work.
4. I have been employed by the Environment Agency for 22 years. Prior to this role I was a Senior Permitting Officer for the National Permitting Service and have worked as a national Technical Advisor previously developing standards and guidance for the storage and treatment of waste electrical and electronic equipment ("WEEE") and as an Environment Officer regulating waste management sites. Prior to the Environment Agency I worked as a waste management consultant.
5. I have a MSc degree in Wastes Management and a BSc degree in Applied Geology. I am also a full member of the Chartered Institute of Wastes Management ("CIWM").

Scope and structure of proof

6. This proof has been prepared to assist the Inspector at the hearing in appeal reference APP/EPR/636, 651 & 652. In this proof, my evidence will primarily relate to defining the appropriate technical standards using Best Available Techniques and appropriate measures to prevent or minimise fugitive emissions to air, from dust and asbestos fibres, from the treatment of asbestos contaminated soils.
7. My evidence will cover the general technical standards of operation for waste treatment in line

with BAT and appropriate measures which apply to the storage, handling and treatment of asbestos contaminated soils but not to the 'site specific' permit conditions for Daneshill and Maw Green. My colleagues Daniel Kirk and Graham Raynes will deal with such matters in their of proof of evidence statements. Chris Lowe will also separately explain the Environment Agency's regulatory position around the application of ambient air monitoring to determine the risk posed by dust and asbestos.

8. My statement will refer to:

- The legal background for Best Available Techniques and how they apply to all waste storage, handling and treatment activities and therefore are relevant to the storage, handling and treatment of asbestos contaminated soils by mechanical screening and handpicking.
- The specific applicable techniques for preventing and minimising emissions to air (both asbestos fibres and dust) from the storage, handling and treatment of asbestos contaminated soils by mechanical screening and handpicking as set out in the current BAT conclusions for Waste treatment and our Chemical waste: appropriate measures for permitted facilities guidance.
- The differences between Mobile Plant permitted activities and Installations.
- The dangers of asbestos.
- BAT measures in place at other permitted activities in England (and Europe) that are storing, handling and treating soils containing asbestos in an enclosed and abated manner.
- The Environment Agency's response to the Appellant's monitoring report data submitted under the appeals for Edwin Richards and Maw Green.
- Conclusions and endorsement

**Legal background - Industrial Emissions Directive and Waste Framework Directive
And requirement for Best Available Techniques and how this applies to permits**

9. Best Available Techniques apply to permitted waste Installations, both at the Daneshill and Maw Green sites which are the subject of these appeals. These sites are waste part A1 Installations under the Environmental Permitting (England and Wales) Regulations 2016 ("EPR 2016"). The proposed activity falls under Section 5.3 Part A(1)(a)(vi) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds.

10. Article 11 is implemented under the provisions in Schedule 7 Part A Para 5(e) of the EPR 2016 regarding the regulation of installations include an obligation on the regulator to:

"exercise its relevant functions so as to ensure compliance with the following provisions of the

Industrial Emissions Directive – Article 5(1); Article 7; Article 8(2); Article 11; Article 13(7); Articles 14 to 18; Article 20(1) and (2); Article 22. Article 5(1) of the IED requires that the Agency: *“shall grant a permit if the installation complies with the requirements of the Directive.”*

11. Article 11 of the Industrial Emissions Directive (“IED”) requires 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”.

12. Article 14 of IED requires:

Article 14(1) *“the permit includes all measures necessary for compliance with the requirements of Articles 11 and 18”.*

Article 14(3) requires: *“BAT conclusions shall be the reference for setting the permit conditions”.*

Article 14(6) requires: *“Where an activity or a type of production process carried out within an installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process, the competent authority shall, after prior consultations with the operator, set the permit conditions on the basis of the best available techniques that it has determined for the activities or processes concerned, by giving special consideration to the criteria listed in Annex III”.*

13. Annex III of the IED gives the Criteria for determining Best Available Techniques. Annex III (10) requires:

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

And also under Annex III (4)

“comparable processes, facilities or methods of operation which have been tried with success on an industrial scale”

From the evidence presented in Appendix 1 there are equivalent permitted operations undertaking treatment of asbestos contaminated soils that are already operating in line with BAT – i.e. enclosed and abated to prevent or minimise risk of emissions.

14. Article 18 also requires:

“Where an environmental quality standard requires stricter conditions than those achievable by the use of the best available techniques, additional measures shall be included in the permit, without prejudice to other measures which may be taken to comply with environmental quality standards.”

15. BAT is defined under IED as the most effective and advanced techniques designed to prevent or

reduce emissions and impact on the environment. The full definition under Article 3 (10) of IED is:

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

(a) *‘techniques’ includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,*

(b) *‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator,*

(c) *‘best’ means most effective in achieving a high general level of protection of the environment as a whole”.*

We do not consider that the alternative techniques proposed by the Appellant which are limited to operating outdoors with misting for dust suppression meet the definition of best available techniques as specified referred to under BAT 14d of the BAT conclusions to prevent and minimise emissions to air of asbestos fibres and dust, or achieve a high general level of environmental protection overall.

Waste Framework Directive

16. The Waste Framework Directive also makes direct reference to BAT. Specifically, Article 27 and

13. Article 27 sets out the:

“minimum standards for waste treatment” and the requirement to “take into account best available techniques”.

Article 13 requires that:

“necessary measures are taken to ensure waste management is carried out without endangering human health, without harming the environment and in particular without risk to water, air, soil, plants or animals”.

Control of Asbestos Regulations 2012

17. The Control of Asbestos Regulations 2012, (“CAR 2012”) cover the handling of asbestos from the Health and Safety Executive’s perspective. Whilst this is outside of the Environment Agency’s

remit there are some sections which are similar to the approach taken under BAT and Appropriate measures to prevent or minimise risk. These include a requirement to prevent and reduce exposure and spread of asbestos under Part 2 General requirements, section 11 which has requirements on the employer for the *“prevention or reduction of exposure to asbestos”*. Part 2 requires in order of priority

- “(a) the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials in order to avoid or minimise the release of asbestos;*
and
- (b) the control of exposure at source, including adequate ventilation systems and appropriate organisational measures”.*

18. Section 16 places a duty on the employer to prevent or reduce the spread of asbestos.

“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.”

Again, the controls specified under BAT 14d and appropriate measures for enclosure, collection and abatement during storage, handling and processing of asbestos contaminated soils would also help to prevent or reduce the potential for spread of asbestos fibres into the wider environment.

Relevant guidance which applies to treatment of asbestos contaminated soils

19. The applicable techniques under BAT for preventing or minimising diffuse emissions to air for all waste treatment activities, which also apply to the storage, treating and handling of asbestos contaminated soils are set out in:

- Best Available Techniques (BAT) Reference Document for Waste Treatment (“BREF”), 2018
- BAT conclusions for waste treatment, 10/08/2018
- Chemical Waste: appropriate measures for permitted facilities, 18/11/2020
- Soil treatment options, V3 fixed plant requirements- 05/01/2022 (internal interim guidance for national permitting service)

In addition, the supporting guidance “European Environmental Bureau (“EEB”) Implementing EU environmental standards for waste treatment Guidance for Non-governmental Organisations on the EU Waste Treatment BREF, June 2019” explains how NGOs should implement BAT. This is explained under point 32 below.

Best Available Techniques (BAT) Reference Document for Waste Treatment, 2018

20. Guidance notes are published by the European IPPC Bureau (“EIPPCB”) which describe Best

Available Techniques for processes regulated under IED. They are known as BAT reference (“BREF”) documents and BAT conclusions (“BATC”). The BREF is based on examination of techniques used by waste operations across Europe. The current Waste treatment BREF and BAT conclusions were published in August 2018. Member states had 4 years to implement the requirements of the BATC – i.e. by August 2022. The BAT Conclusions set out the appropriate standards for operators to meet.

21. Section 5.6 of the BREF discusses different treatment methods for excavated contaminated soil as part of section 5 “*physio-chemical treatment of solid and or pasty waste*” as covered under BAT 41 above, which refers to BAT 14d. There is not a specific section on treatment of asbestos contaminated soils by mechanical screening and handpicking, but it does mention associated treatment technologies such as soil washing which can employ mechanical screening processes as covered by BAT 50 above, which also refers to BAT 14d.

22. Section 2.3.5.3 of the BREF provides more details on the measures prescribed under BAT 14d used for containment, collection, and treatment of diffuse emissions to air. This includes:
 - *“To store, treat and handle waste and material that may generate diffuse emissions in enclosed buildings and/or enclosed equipment (e.g. conveyor belts)*
 - *To cover conveyor belts, especially the connection points and discharge areas.*
 - *To enclose transfer points and sorting facilities.*
 - *To ensure enclosure by work instructions or automation, e.g. closing doors.*
 - *a. To have the enclosed equipment or buildings under adequate pressure;*
 - *b. To have the enclosed systems or buildings equipped with extraction, and connected to a suitable abatement system.*
 - *c. To design extraction systems to take into account the removal of the large volumes of air present due to the dimensions of the mixing areas and the need to have vehicular access for loading and unloading.*
 - *To have localised extraction and/or misting/sprinkler systems on equipment with significant dust formation (e.g. screening drums) or in storage areas, at handling or dust- intensive process steps such as unloading. These systems distribute a fine spray of water that stops the dust from rising while binding the water at the same time to prevent waste water.*
 - *To use air suction systems close to the emission sources”.*

We note that the Appellant’s proposed alternative techniques to BAT and our appropriate measures guidance for mechanically screening asbestos contaminated soils are limited to operating outdoors with misting for dust suppression only, and do not consider the full range of appropriate measures prescribed above from the BREF, specifically around enclosure and abatement, in order to prevent or minimise emissions of asbestos fibres and dust to air.

BAT conclusions for waste treatment, 10/08/2018

23. Article 14(3) of IED requires that:

“BAT conclusions shall be the reference for setting the permit conditions”

The general considerations are:

“The techniques listed and described in these BAT conclusions are neither prescriptive nor exhaustive. Other techniques may be used that ensure at least an equivalent level of environmental protection. Unless otherwise stated, the BAT conclusions are generally applicable” We do not consider the Appellant’s alternative measures provide an equivalent level of environmental protection to that prescribed under BAT 14d.

24. The specific requirements from the BAT conclusions for preventing or minimising diffuse (also known as fugitive) emissions to air which are relevant to this appeal are set out in BAT 14. BAT 41 and BAT 50 are also relevant to contaminated soil treatment activities, and specifically refer back to BAT 14d. Channelled emissions also known as ‘point source’ are:

“Emissions of pollutants into the environment through any kind of duct, pipe, stack, etc. This also includes emissions from open-top biofilters”.

Diffuse emissions are:

“Non-channelled emissions (e.g. of dust, organic compounds, odour) which can result from ‘area’ sources (e.g. tanks) or ‘point’ sources (e.g. pipe flanges). This also includes emissions from open-air windrow composting”.

25. BAT 14 lists as number of techniques – a to h which are applicable to preventing and minimising diffuse (fugitive) emissions. Depending on the risk posed by the waste specific measures are prescribed under BAT 14d. The Environment Agency considers that the mechanical handling and processing of asbestos contaminated soils presents a risk of fugitive emissions to air from asbestos fibres and dust and therefore the specific control measures under 14d are required i.e. the activities are enclosed and emissions are abated and directed via a point source/stack. ***“Depending on the risk posed by the waste in terms of diffuse emissions to air, BAT 14d is especially relevant.”*** [Emphasis added]

BAT 14d includes specific techniques for containment, collection and abatement/treatment of diffuse emissions. These are: *“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”.*

26. Section 6.1 references a list of appropriate abatement techniques which may be applicable for dust, and for asbestos fibres, such as cyclone, electrostatic precipitator, fabric filter, High-

Efficiency Particulate Absorbing filter (“HEPA filter”) or wet scrubbing.

27. The applicability of 14d to enclosure is limited by:

“The use of enclosed equipment or buildings may be restricted by safety considerations such as the risk of explosion or oxygen depletion. The use of enclosed equipment or buildings may also be constrained by the volume of waste.”

Whilst there may be a potential argument made from the Appellant about constraints due to the volume of waste, other operators with permitted Installations as detailed in Appendix 1 are able to carry out their asbestos contaminated soil treatment activities successfully within enclosed equipment or a building.

28. BAT 41 refers to physio-chemical treatment of solid and or pasty waste. Mechanical screening of asbestos contaminated soils is a physical treatment activity, so would fall under BAT 41. BAT 41 specifically references back to BAT 14d to order to prevent or minimise fugitive emissions to air, by enclosing, collection and abatement as listed in section 6.1. BAT 41 also sets the BAT

Associated Emission Level (“AEL”) for channelled emissions (which are ‘point source’ emissions) for dust at 2-5 mg/Nm³. A dust limit of 5 mg/Nm³ has been applied to the varied permits issued at Daneshill and Maw Green based on this BAT AEL requirement.

29. There is no point source emission limit to air (BAT AEL) for asbestos fibres defined in the BAT conclusions. The limit for asbestos fibres of 0.1 fibres/ml used in our permits is an Agency requirement, which has been set in accordance with the Control of Asbestos Regulations 2012. The limit is the control limit set in CAR 2012 and is therefore considered an achievable limit. In CAR the control limit is not a ‘safe’ level and exposure must be reduced to as far as below the control limit as possible. The EU Directive 2009/148/EC on protection of workers from the risks related to exposure to asbestos at work also references the 0.1 fibres/ml limit. It is worth noting however, that this Directive was amended on 22 November 2023 under (EU)2023/2668 to set more stringent limits of 0.01 fibres/ml (and 0.002 fibres/ml 3 years later) for implementation in member states by 20 December 2025 to reflect the increased concerns over health risks associated with asbestos exposure.

30. BAT 50 refers to water washing of contaminated soil. This also specially refers to the use of BAT 14d to prevent and minimise fugitive emissions to air:

“In order to reduce emissions of dust and organic compounds to air from the storage, handling, and washing steps, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.”

Whilst soil washing is not being carried out at the sites under this appeal, the specific reference to BAT 14d during storage and handling demonstrates the relevance of this specific BAT requirement for preventing and minimising air emissions, asbestos fibres and dust, into the environment. Also note that the permitted soil washing activity for asbestos contaminated soils at Tetron Finningley

LLP in Appendix 1 is enclosed and abated in accordance with Bat 14d to prevent and minimise fugitive emissions to air.

31. BAT 2 sets the requirements for overall environmental performance of the plant, to ensure the overall treatment processes are effective. BAT 2d requires an output quality management system is in place to ensure outputs from the treatment are in line with expectations. This is also required in our appropriate measures guidance, under point 38 below and is the reason for requiring in the permit the Appellant to monitor the both the incoming and separated waste streams to demonstrate that the treatment activity (handpicking of asbestos fragments) is effective, and that use of a mechanical screener prior to the handpicking stage is not resulting in additional fibre releases which could potentially increase the asbestos contamination in the screened output fractions, which include: the fine, oversize and handpicked mid-size fractions.

European Environmental Bureau EEB Implementing EU environmental standards for waste treatment Guidance for Non-governmental Organisations on the EU Waste Treatment BREF, June 2019

32. The purpose of this document is to brief Non- Governmental Organisations (“NGOs”) involved with environmental protection on the requirements of the waste treatment BREF and BAT conclusions to ensure that regulators fulfil their duties.

33. Page 11 sets out the main changes as a result of the 2018 BAT conclusions. It states that: *“Overall outcome of the review is positive; there have been several improvements compared to the original conclusions of 2006. Most notably: in terms of air pollution, diffuse emissions of dust, heavy metals and other toxic substances will now have to be captured and properly treated in most waste treatment facilities that fall under the scope of the BAT conclusions – the only exception concerns the facilities for biological treatment of waste.”*

34. Page 13 addresses air pollution and BAT 14d specifically. In the list of main recommendations, the first recommendation is:

“Prevention / reduction of diffuse pollutant emissions to air (BAT 14): Depending on the risk posed by the waste in terms of diffuse emissions, NGOs shall demand from the competent authority to properly implement BAT 14(d) in particular (‘containment, collection and treatment of diffuse emissions’). The consideration of BAT 14(d) is mandatory for most installations falling under the scope of these BAT conclusions (with the exception of the installations for the biological treatment of waste)”

This guidance further supports the Agency position that emissions to air from the treatment of asbestos contaminated soils need to be contained/enclosed, captured and abated prior to release to the environment.

Chemical Waste: appropriate measures for permitted facilities, 18/11/2020

35. Prior to 18 November 2020, the BAT for treatment and transfer of chemical wastes in England was set out in Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste which was originally published in 2004 to implement the IPPC Directive. Since 18 November 2020, the standards for such sites, that is BAT for installations and necessary measures for waste operations, is given in technical guidance 'Chemical Waste: appropriate measures for permitted facilities'. The appropriate measures for the treatment of soils containing hazardous chemicals is covered under this guidance. The term "appropriate measures" covers both the requirements of Best Available Techniques for installation facilities and "necessary measures" for waste operation facilities. Appropriate measures are the standards that operators should meet to comply with their environmental permit requirements.

36. There is some flexibility in the guidance as with the general considerations under the BATc "*Where a particular measure is not suitable, an operator can propose alternative measures that achieve the same level of environmental protection*".

We do not consider the current alternative measures proposed by the appellant, as supported by their current environmental monitoring data achieve the same level of environmental protection to prevent or minimise fugitive emissions of asbestos fibres and dust as required under BAT and appropriate measures.

37. The relevant appropriate measures for waste treatment are in:

Section 5.1 – General waste treatment

And

Section 6.2 – Fugitive emissions to air (including odour) reproduced below.

38. General waste treatment section 5.1.1

"Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise the waste treatment process to make sure that you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it. The treated output material must meet your expectations and be suitable for its intended disposal or recovery route. You must identify and characterise emissions from the process, and take appropriate measures to control them at source."

39. General waste treatment section 5.1.10

"Where an emission is expected, all treatment or reactor vessels must be enclosed. Only vent them to the atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief)."

40. Fugitive emissions to air (including odour) Section 6.2.2 – "*You must design, operate and*

maintain storage and treatment plant in a way that prevents fugitive emissions to air, including dust, organic compounds and odour. Where that is not possible, you must minimise these emissions. Storage and treatment plant includes associated equipment and infrastructure such as:

- *shredders*
- *conveyors*
- *skips or containers*
- *building fabric, including doors and windows*
- *pipework and ducting”.*

41. Fugitive emissions to air, including odour, Section 6.2.5 *“Where necessary, to prevent fugitive emissions to air from the storage and handling of wastes, you should use a combination of the following measures:*

- *“Store and handle such wastes within a building or enclosed equipment.*
- *Keep buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system.*
- *Where possible, locate air extraction points close to potential emissions sources.*
- *Use fully enclosed material transfer and storage systems and equipment, for example conveyors, hoppers, containers, tanks and skips.*
- *Use fast-acting ‘airlock’ doors that default closed.*
- *Keep building doors and windows shut to provide containment, other than when access is required.*
- *Minimising drop height.*
- *Use misting systems and wind barriers to prevent dust”.*

These measures are in line with the requirements under the BREF and BAT 14d above.

Soil treatment options, fixed plant requirements, 2022 (internal guidance)

42. This internal guidance v3 dated 05/01/2022 was produced by my predecessor Dr Chris Hall as a supplement to our Chemical Waste: Appropriate Measures guidance to primarily aid permitting officers in defining BAT for the hazardous waste soil treatment sector. It is internal guidance and work in progress and has therefore not been formally consulted on with Industry. The Environment Agency shared this guidance with the Appellant during the appeal to help explain the expected standards to meet BAT and our appropriate measures. The document sets out a number of standards for different soil treatment activities. For treatment of asbestos contaminated soils it states that:

“Screening cannot proceed unless the process is enclosed and asbestos fibres are abated via a HEPA filter.”

This is in line with the requirements under BAT14 d and our appropriate measures guidance.

Other relevant external guidance:

CAR-SOIL, Control of Asbestos Regulations 2012, Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials, July 2016

43. This Industry document includes information on the deterioration of Asbestos Containing Materials (“ACM”) as a result of mechanical processing and therefore the increased risk of fibre and dust generation as a result. This supports the need to enclose, collect and abate fugitive emissions as required under BAT and appropriate measures to prevent and minimise this risk. It includes a flow chart of steps regarding needing to register the work as Notifiable Non-Licensed Work (“NNLW”) with the Health and Safety Executive. Any NNLW work or licensable work with asbestos needs to be carried out with appropriate controls in place to meet HSE requirements. Step C considers if the material is friable:

“materials which are “firmly linked” in a matrix (i.e. asbestos cement, textured decorative coatings, felts, textiles, gaskets, paper linings, washers and rope are also considered to be non-friable.”

However, it also states:

“Note that being non-friable does not mean that the material will not release fibres under all circumstances. Non-friable materials may release fibres if damaged or subjected to high intensity processes”

Page 37, step F also notes that:

“Work methods where the material is broken up during removal will cause “deterioration” e.g. power screening, grading or crushing asbestos-contaminated material.

44. Para 70 on page 29 also states that *“According to the HSE8, there is now significant monitoring evidence available within the ground investigation and remediation industry to suggest that significant visible quantities of bound ACMs will need to be present to give rise to exposures above 0.01 f/ml, equivalent to one tenth of the control limit, unless they are being subject to highly energetic processes (e.g. crushing, power screening and grading of demolition waste and made ground or soil).”* These extracts from this Industry guidance support our view that the mechanical screening of soils with ACMs is likely to generate fugitive emissions of asbestos fibres and dust to the environment, and therefore the activity needs to be enclosed and abated in line with BAT 14d and appropriate measures.

Guidance on the Assessment of Mineral Dust Impacts for Planning, Institute of Air Quality Management, 2016 V1.1

45. The requirements to enclose activities to prevent fugitive air emissions are not unique to the waste sector, they are also prescribed in the above guidance to planning authorities as BAT equivalent for the mineral processing Industry. Note the requirements to fully enclose screening

activities below, which is broadly consistent with the requirement for enclosure under BAT and appropriate measures to prevent and minimise emissions. The guidance also acknowledges the practical differences around enclosure requirements for fixed and mobile plant. These standards apply to prevent and minimise dust emissions from generally inert mineral materials. The environmental risk of screening of asbestos contaminated soils are likely to be higher compared to screening inert mineral minerals, due to the risks of asbestos fibre releases in addition to dust hence the additional requirements under BAT and appropriate measures for collection and abatement. *Page 28 – Mineral processing (crushing and screening) “Wherever practicable, crushing and screening should take place within fully enclosed structures, or where this is not possible (e.g. in the case of mobile plant) mineral processing should take place within a sheltered part of the quarry, away from boundaries with off-site receptors. The following measures are considered to be effective in minimizing dust emissions during the mineral processing process:*

- *dampen material, for example, wetting down of rock stockpiles prior to crushing operation*
- *protect equipment (for example, conveyors, process plant) by partial or complete enclosure within housing*
- *use crushing and screening plant within its design capacity*
- *maintain good standards of all plant and equipment.”*

The dangers of asbestos

46. The dangers posed by handling asbestos are well documented by the Health and Safety Executive, the UK Health Security Agency (“UKHSA”) and is why the Environment Agency takes a precautionary approach when permitting activities involving the storage and treatment of asbestos contaminated soils. The HSE points have been made previously in our Statement of Case for the original Daneshill refusal (ref APP/EPR 2016/636) but are highlighted below for ease of reference.

47. The HSE website - why is asbestos dangerous, states:

“Asbestos still kills around 5000 workers each year, this is more than the number of people killed on the road. When materials that contain asbestos are disturbed or damaged, fibres are released into the air. When these fibres are inhaled they can cause serious disease. These diseases will not affect you immediately; they often take a long time to develop, but once diagnosed, it is often too late to do anything.” The diseases include “mesothelioma, asbestos related lung cancer, asbestosis and pleural thickening”.

48. The Asbestos: general information page on GOV.UK for public Health England also states:

- *“when damaged asbestos can release smaller fibres that can be breathed in or swallowed*
- *breathing in asbestos can lead to a condition called asbestosis that leads to an increased susceptibility to cancer*
- *asbestos has been classified as being carcinogenic to humans”*

49. Our M17 guidance on monitoring particulate matter in ambient air around waste facilities also highlights these risks which are taken from the from World Health Organization- Air quality

guidelines for Europe, 2nd Edition:

“Asbestos is a proven human carcinogen (IARC Group 1). No safe level can be proposed for asbestos because a threshold is not known to exist. Exposure should therefore be kept as low as possible and asbestos should not be found above background levels at site boundaries.”

50. We consider that the mechanical screening process proposed by the Appellant is likely to agitate the waste and result in the generation of asbestos fibres (and dust). Such fibres from damaged/broken bonded asbestos can easily become airborne during treatment. The inhalation of asbestos fibres can cause serious illness and significant harm to human health including malignant lung cancer. Therefore, having regard to the nature of the potential emissions and the need to prevent or minimise them without endangering human health or without harming the environment, it is essential that the requirements under BAT 14d and appropriate measures are used to minimise these risks.

The key differences between mobile plant permitted activities and Installations

51. The Appellant has stated the Environment Agency is inconsistent in our approach between mobile plant permits and Installations. Mobile plant are very different in nature and scale compared to Installations. Mobile plant deployments are limited to short term temporary operations (maximum of one year, and often shorter). They are deployed directly at the contaminated land site where the soil is to be treated/remediated. They do not involve the transportation and import of contaminated materials to site. The short duration of the deployment minimises the level of risk and therefore the level of control measures that are applied (for example it would not be feasible to erect a building to contain a process which may be over in a matter of a few weeks).

52. Installation permits are not time limited and can accept wastes from numerous sources. The quantities of waste treated are therefore greater and more variable hence increasing the overall environmental risk and the need for BAT and appropriate measures to apply to these sites. The Environment Agency do not consider the short-term remediation of a contaminated site in any way carries the same risk profile as a permanent soil treatment facility authorised to import soils from multiple sites year after year. The NICOLE Report referred to by the appellant as part of their evidence only lists examples of on-site remediation activities using mobile plant, not Installations which have a greater risk.

BAT measures in place at other permitted activities in England (and Europe) that are treating asbestos contaminated soils in an enclosed and abated manner.

53. In order for techniques to be BAT they must be ‘available techniques’ [Article 3 (10)(b)]. In appendix 1 have set out the main permit requirements and the techniques currently used by operators to treat asbestos contaminated soils. The range of treatment include: handpicking, soil washing and thermal treatment of asbestos cement. All the activities are enclosed and abatement

and associated air monitoring is in place in order to minimise the risk of asbestos fibres and dust emissions during the storage, handling and treatment of asbestos contaminated soils. This demonstrates that we have taken a broadly consistent approach in permitting these activities to minimise emissions of asbestos fibres and dust. The Agency Initiated variations for Daneshill and Maw Green which are the subject of this appeal contain similar requirements in their permit conditions to ensure we are being consistent in applying BAT and appropriate measures across the asbestos contaminated soil treatment sector going forward, as part of our permit review work.

54. A list of currently permitted sites which treat cement bonded asbestos and asbestos contaminated soils is given below. See attached document in appendix 1– consolidated sector summary document version 1, for more information.

Permit ref	Operator	Address
EPR/BP3331DD	Dunton Environmental Limited	Horseley, Wolverhampton
EPR/WE8923AB	Dunton Environmental Limited	Smethwick, Birmingham
EPR/NB3039RM	Tetron Finningley LLP	Finningley Quarry, Doncaster
EPR/FP3092LH	Keltbray AWS Limited	Mohawk Wharf, London
EPR/EP3492SP	Mick George Limited	MEPAL, Cambridgeshire
EPR/HB3802HF	NRS Meridan Aggregates Ltd	Cornets End, Solihull
EPR/BP3136WY	Thermal Recycling	Staffordshire
EPR/BU8126IY	Biffa Waste Services Limited	Red Hill Landfill

55. Dunton Environmental are permitted at two sites for treatment of asbestos contaminated soils by handpicking. At Horseley, screening is carried out post handpicking. The operator uses enclosure with extraction and abatement to prevent dust and asbestos fibre releases in addition to dampening. The operator has point source monitoring and ambient air monitoring ensure air emissions from asbestos fibres and dust are minimised and controlled. Dampening for dust suppression is also used. At Smethwick a building is used with extraction and abatement for dust and asbestos fibres. Dampening for dust suppression is also used.

56. The Tetron site at Finningley is for handpicking and washing of asbestos contaminated soils. The treatment process is fully enclosed in a building, under negative pressure with abatement and monitoring (point source and ambient air) to prevent dust and asbestos fibre emissions. Dampening for dust suppression is also used.

57. The Keltbray site in London is for handpicking of asbestos contaminated soils. The activity takes place inside an enclosed building under negative pressure and with abatement by HEPA filter for asbestos fibres and dust. Dampening for dust suppression is also used. Dust and asbestos fibre monitoring is carried out for point source and ambient air emissions.

58. The Mick George site in Cambridgeshire is for handpicking of asbestos contaminated soils. This takes place within an enclosed building (with enclosed conveyors) under negative pressure which

is extracted and abated for asbestos fibres and dust. Dampening for dust suppression is also used. Dust and asbestos fibre monitoring is carried out for point source and ambient air emissions.

59. NRS Meridan Aggregates in Solihull undertake handpicking of asbestos contaminated soils. This takes place in an enclosed and abated picking line. The conveyors are also enclosed and dampening for dust suppression is used. Following handpicking to remove asbestos the waste may be further treated by screening or washing. Ambient air monitoring for asbestos fibres is also carried out.

60. Thermal recycling in Staffordshire thermally treats cement bonded asbestos. This is done in a enclosed building under negative pressure and abated via HEPA filter with point source monitoring for asbestos fibres.

61. Biffa Waste Services in Surrey handpick asbestos contaminated soils in a dedicated enclosed picking line with enclosed conveyors on impermeable pavement and sealed drainage. Dampening for dust suppression is also used. The site also carries out ambient air monitoring for asbestos fibres. A similar proposal for mechanical screening of asbestos contaminated soils was also refused by the Environment Agency due to concerns over the risk of release of airborne asbestos fibres during the screening operation, and the operators proposed measures not meeting the requirements of BAT or appropriate measures.

62. Enclosed plant are also considered BAT in Europe for treatment of asbestos contaminated soils, as evidenced by this SUEZ plant operating in Belgium. Website (see Appendix 3) - SUEZ extends its expertise in asbestos waste management and recovery - SUEZ Group

“SUEZ Remediation teams can already meet this new challenge, thanks to our polluted soil treatment platform in Grimbergen, which produces washed sand for reuse. However, the presence of asbestos fragments in the coarsest fractions can significantly reduce the overall recycling rate. To overcome this, a pre-treatment facility is now being built to separate the incoming materials into different fractions. This will take place in an enclosed, contained area. The goal is to use sorting equipment to separate soils and elements containing asbestos. In accordance with health, safety and environmental rules, the possible presence of asbestos fibres will be monitored continuously and strict individual and collective protective measures will be applied throughout the process.”

The Agency’s response to FCCs monitoring report data submitted under this appeal for Edwin Richards and Maw Green.

63. We have reviewed the factual monitoring report Daneshill and Maw Green STF Permit Appeal – Provectus STF Factual Monitoring Data for FCC Recycling (UK) Ltd and 3C waste Ltd dated 02/02/2024 (see Appendix 2 - EA Feedback on factual Document).

64. We have not had sufficient time to fully review the data and applied methodology used so we are

unable to agree or dispute this. We have however reviewed the factual document and data in its context and have highlighted issues which could potentially affect the level of confidence that can be applied to the monitoring data.

65. In summary these are:

- The monitoring of waste inputs indicates that a substantial amount of waste processed during the monitoring period had no detectable asbestos, which casts doubt on whether the air monitoring results can be relied on as representative of a worst-case scenario.
- It is not clear whether the amount of waste processed on any particular day during the monitoring period is representative of the full treatment capacity of the mechanical treatment process. Again, this goes to the point of whether the air monitoring results can be relied on as representative of a worst-case scenario.
- For the Edwin Richards Quarry (“ERQ”) site, only approximately 3 months of the monitoring relates to the mechanical treatment of waste (more vigorous for fibre creation), the rest of the monitoring was taken when they were only handpicking the waste and so is not fully representative of the expected activities.
- Multiple sets of data are provided on air monitoring, soil content monitoring, moisture monitoring but there is limited if any interpretation linking the different results together. For example, for soil moisture data it is not clear how this data corresponds to the other monitoring data. It is also not clear whether the operator was actively controlling the water moisture and how the air monitoring results reflect their active management of moisture.
- Some data provided indicates that there is the potential for the waste processed to contain other forms of asbestos (other than cement bonded asbestos) which are more likely to release fibres when subject to high intensity mechanical treatment.
- Post processing data indicates there are still other forms of asbestos in the waste after processing. The risk that this poses beyond the treatment process could be considerable.
- Post processing data suggests that asbestos is still potentially present in a similar or higher percentage of samples when compared to pre-treated waste. At ERQ post processed soil results suggest higher concentrations during the period in which the mechanical treatment process was in operation. This leads to potential concerns about the effectiveness of the treatment processes and for spread and dispersion of fibres into the output fractions.

- Asbestos fibres were found in the tracked/sedimented soil dust on the STF concrete hardstanding at Maw Green. There is potential for the spread/entrainment of asbestos in the proposed crushed concrete surfaces of the treatment pads by such materials.
- At ERQ results suggest the operation of the mechanical screener increases the frequency of fibres being released and detected in the building, particularly when operated without enclosure and abatement.
- At ERQ the monitoring locations may not be representative of true conditions in the building as they appear to be in doorways where there is likely to be turbulent air and therefore may not represent true ambient/controlled conditions.

66. As a result of the above, I am not satisfied that the monitoring reflects a reliable assessment of the risks posed by the proposed activity to human health and the environment.

Conclusions and endorsement

67. As presented above, the requirements set out in BAT and appropriate measures to prevent and minimise releases of asbestos fibres and dust during storage, handling and treatment of asbestos containing soils are to enclose, collect and abate any emissions where there is a risk posed. I consider there is a risk to human health and the environment from the proposed mechanical screening activity and therefore the requirements under BAT and our appropriate measures apply.

68. The Appellants currently proposed alternative measures for operation of the mechanical screener without enclosure and abatement do not adequately demonstrate that “all the appropriate preventive measures are taken against pollution”; or provide an equivalent level of environmental protection in line with the requirements under BAT and appropriate measures. We also have significant concerns regarding the representativeness of the monitoring data presented to date to justify the risks posed by the treatment process. These include variability in the waste inputs, not reflecting real operational worst case conditions, along with clear evidence that asbestos fibre frequency increased when the screener was operated without enclosure and abatement.

69. I have also demonstrated that other permitted activities for treatment of asbestos contaminated soils are doing so with the additional environmental controls in place in accordance with BAT and appropriate measures, including enclosure in buildings or equipment, with collection and abatement of asbestos fibres and dust emissions to prevent harm to human health or the environment. These measures are therefore both available and achievable and in line with BAT and appropriate measures.

Signed: Paul Barker

A handwritten signature in black ink that reads "Paul Barker". The script is cursive and fluid, with the first letters of "Paul" and "Barker" being capitalized and prominent.

Dated: 28/02/2024

Environment Agency – Manley House, Kestrel Way, Exeter, Devon, EX2 7LQ.

APPENDICES

Appendix 1: BAT measures in place at other permitted activities in England that are treating soils containing asbestos in an enclosed and abated manner.

PB 01: Consolidated sector summary document version 1

Appendix 2: The Agency's response to FCCs monitoring report data submitted under this appeal for Edwin Richards and Maw Green.

PB 02: EA Feedback on factual Document

Appendix 3: List of associated documents

Legislation

PB 03: Environmental Permitting (England and Wales) Regulations 2016 ("EPR 2016").

PB 04: Industrial Emissions Directive 2010

PB 05: The Waste Framework Directive, 2008

PB 06: The Control of Asbestos Regulations 2012

Guidance

PB 07: Waste treatment BREF, 2018

PB 08: Waste Treatment BAT conclusions

PB 09: Chemical Waste: Appropriate measures for permitted facilities guidance, 2020

PB 10: Soil treatment options, fixed plant requirements, 2022 (internal guidance)

Other external guidance

PB 11: Implementing EU environmental standards for waste treatment Guidance for Non-governmental Organisations on the EU Waste Treatment BREF, June 2019

PB 12: CAR-SOIL, Control of Asbestos Regulations 2012, Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials, July 2016

PB 13: Guidance on the Assessment of Mineral Dust Impacts for Planning, Institute of Air Quality Management, 2016 V1.1

Dangers of asbestos

PB 14: World Health Organization -Air Quality Guidelines for Europe, Second Edition.

PB 15: Technical guidance note (monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities, version 2 July 2013

Web links (appended as PDFs)

PB 16: [Why is asbestos dangerous? \(hse.gov.uk\)](https://www.hse.gov.uk/why-is-asbestos-dangerous/)

PB 17: [Asbestos: general information - GOV.UK \(www.gov.uk\)](https://www.gov.uk/asbestos-general-information)

PB 18: [SUEZ extends its expertise in asbestos waste management and recovery - SUEZ](#)

[Group](#)