



## **BAT Assessment Report for Hazardous Waste Treatment Operations**

NRS Meriden Aggregates Limited

Cornets End Quarry  
Cornets End Lane  
Cornets End  
Meriden  
Solihull  
CV7 7LH



PROVIDING SOLUTIONS, ENSURING COMPLIANCE

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## 1. Introduction & Scope

### Report Context

- 1.1. Westbury Environmental Limited have produced this Best Available Techniques (BAT) Assessment Report to support an Environmental Permit variation application submitted on behalf of NRS Meriden Aggregates Limited (the operator) at Cornets End Quarry, Cornets End Lane, Cornets End, Meriden, Solihull, CV7 7LH (Site).
- 1.2. This report outlines how NRS Meriden Aggregates Ltd will undertake operations involving hazardous waste on the Site in accordance with Best Available Techniques (BAT).
- 1.3. This report includes information on how NRS Meriden Aggregates Ltd will undertake the following operations:
  - Physico-chemical treatment of hazardous wastes (asbestos picking).
  - Physico-chemical treatment of hazardous wastes (washing and dry screening).
  - Storage of hazardous wastes.
- 1.4. The Site is currently permitted for the treatment and storage of non-hazardous waste. The proposed change to storage and treatment activities is to include the storage and treatment of hazardous construction / demolition waste.

### Scope

- 1.5. This report presents an assessment of compliance with BAT in relation to the acceptance, storage, and treatment of hazardous construction / demolition waste. The proposed operating techniques for this activity will be assessed in the context of the following relevant documents:
  - JRC Science for Policy Report: Best available techniques (BAT) reference document for waste treatment, October 2018 (BREF).
  - 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 (BAT conclusions).
  - Chemical waste: appropriate measures for permitted facilities, November 2020 (Appropriate Measures).
- 1.6. The BAT conclusions listed in Table 1: Irrelevant BAT conclusions are considered not applicable to the Sites operations.
- 1.7. The report structure and relevant BAT conclusions, and Appropriate Measures to the Sites operations are provided in Table 2: Structure of report and relevant BAT guidance / appropriate measures.
- 1.8. The acceptance, storage and treatment of hazardous construction / demolition waste will be undertaken in accordance with the relevant BAT conclusions and Appropriate Measures, where relevant. Any derogation from the BAT Conclusions and Appropriate Measures has been fully justified in this report.



**Table 1: Irrelevant BAT conclusions**

<b>BAT Conclusion</b>	<b>Description</b>	<b>Justification</b>
BAT 3	Maintain an inventory of wastewater and waste gas stream emissions	The Site has a discharge consent which allows discharge of surface water into the Horn Brook after via a lagoon. Water that has been in contact with the waste is treated on site and recirculated, it is not discharged from the site to surface water or sewer. There is no waste gas stream produced from the activities.
BAT 6	Monitor wastewater parameters at key locations	The Site does not produce wastewater; therefore, no monitoring is required.
BAT 7	Monitoring frequencies of emissions to water.	The Site does not produce wastewater; therefore, no monitoring is required.
BAT 8	Monitor channelled emissions to air with the given test frequency.	No activities at the Site produce gaseous emissions to air.
BAT 9	Monitor diffuse emissions from the regeneration of spent solvents.	The Site does not carry out any activities involving spent solvents.
BAT 10	Periodically monitor odour emissions.	This is not applicable to the Site as no odour emissions are expected to cause nuisance at sensitive receptors.
BAT 12	Implementation of an odour management plan	An odour management plan is not required as it is not expected the Site will produce any odours that will cause a nuisance at sensitive receptors
BAT 13	Odour reduction techniques	No odour reduction techniques are required as it is not expected the Site will produce any odours that will cause a nuisance at sensitive receptors
BAT 15	The use of flaring	The Site does not use any flaring
BAT 16	Reduce emissions from flaring	The Site does not use any flaring
BAT 19	Optimise water consumption and reduce the volume of wastewater	The Site does not produce any wastewater. Water is recycled within the site.
BAT 20	Reduce emissions to water by treating wastewater	The Site does not produce any wastewater. Water is recycled within the site.
BAT 24	Maximise the reuse of packaging	The Site does not use any packaging in the waste operations
BAT 25	Reduce emissions of dust from the mechanical treatment of waste	The Site do not carry out mechanical treatment of waste



BAT 26	Improve the environmental performance of mechanical treatment in shredders	The Site do not carry out mechanical treatment of waste
BAT 27	Prevent deflagration in the mechanical treatment of waste	The Site do not carry out mechanical treatment of waste
BAT 28	Improve energy efficiency in the mechanical treatment of waste	The Site do not carry out mechanical treatment of waste
BAT 29	Reduce emissions of organic compounds for the treatment of WEEE	The Site does not accept or treat WEEE
BAT 30	Prevent emission due to explosions when treating WEEE	The Site does not accept or treat WEEE
BAT 31	Reduce emissions to air of organic compounds for the mechanical treatment of waste with calorific value	The Site does not carry out mechanical treatment of waste
BAT 32	Reduce mercury emissions for the mechanical treatment of WEEE	The site does not carry out mechanical treatment of waste nor does the Site accept or treat WEEE
BAT 34	Reduce channelled emissions to air of dust from the biological treatment of waste	No biological treatment of waste is undertaken
BAT 38	Reduce emissions to air from the anaerobic treatment of waste	The Site does not carry out any anaerobic treatment of waste
BAT 39	Reduce emission to air from the mechanical biological treatment of waste	The Site does not carry out any biological treatment of waste
BAT 42	Improve environmental performance from the re-refining of waste oil	The Site does not re-refine waste oil
BAT 43	Reduce the quantity of waste sent for disposal from the re-refining of waste oil	The Site does not re-refine waste oil
BAT 44	Reduce emissions of organic compounds to air from the re-refining of waste oil	The Site does not re-refine waste oil
BAT 45	Reduce emissions of organic compounds to air from the physio-chemical treatment of waste with calorific value	The Site does not treat waste with a calorific value
BAT 46	Improve environmental performance of the regeneration of spent solvents	The Site does not regenerate spent solvents
BAT 47	Reduce emissions to air from the regeneration of spent solvents	The Site does not regenerate spent solvents
BAT 48	Improve environmental performance from the thermal	The Site does not carry out any thermal treatment



	treatment of spent activated carbon, waste catalysts and excavated contaminated soil	
BAT 49	Reduce emissions to air from thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil	The Site does not carry out any thermal treatment
BAT 51	Improve environmental performance from the decontamination of equipment containing PCBs	The Site does not carry out any decontamination of equipment containing PCB's.
BAT 52	Improve environmental performance from the treatment of water-based liquid waste	The Site does not treat water-based liquid waste
BAT 53	Reduce emissions to air from the treatment of water-based liquid waste.	The Site does not treat water-based liquid waste



**Table 2: Structure of report and relevant BAT guidance / appropriate measures**

Aspect	BAT Conclusion	Chemical Waste Appropriate Measures	Section of this report
Environmental Management System	BAT 1 BAT 21	Section 2	Section 2
Operating Techniques – waste characterisation and pre-acceptance procedures, Waste Acceptance Procedures, waste tracking system and inventory, output quality management system, waste segregation, waste compatibility / mixing / blending, removal of contravening items.	BAT 2 BAT 33 BAT 36 BAT 40	Section 3	Section 3
Waste storage	BAT 4	Section 4	Section 4
Waste transfer and handling	BAT 5	Section 4	Section 4
Waste Treatment	BAT 25, BAT 26, BAT 28, BAT 31	Section 5	Section 5
Reducing diffuse emissions to air (dust, odour, organic compounds)	BAT 14 BAT 41 BAT 50	Section 6.1, 6.2	Section 6
Noise and vibration management plan	BAT 17	Section 6.3	Section 6
Techniques for reducing noise and vibration emissions	BAT 18	Section 6.3	Section 6
Process efficiency	BAT 11 BAT 22 BAT 23 BAT 35	Section 8	Section 7

**Best Available Techniques (BAT)**

- 1.9. In order to gain or vary an Environmental Permit for an installation listed in Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2016 (as amended) the Operator is required to demonstrate that the proposed techniques are the best available for their Installation.
- 1.10. The purpose of Best Available Techniques (BAT) is that the techniques selected to protect the environment should achieve an appropriate balance between environmental benefit and costs.





- 1.11. This report details how the operator proposes to meet the applicable requirements of BAT or justification for deviation from these requirements. It must be noted that the proposals may be subject to change, for example if new technology and techniques become available or viable.



## 2. Environmental Management System

- 2.1. BAT conclusion 1 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to improve the overall environmental performance, BAT is to implement and adhere to an EMS”.*

- 2.2. BAT conclusion 21 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below as part of the accident management plan”.*

### **Chemical waste: appropriate measures for permitted facilities (November 2020)**

- 2.3. The requirements of BAT conclusion 1, 21 and 22 are covered in section 2 of the Appropriate Measures for the Treatment of Chemical waste – General management appropriate measures.
- 2.4. Section 2 of the chemical waste: appropriate measures for permitted facilities details appropriate measures for; the implementation of an environmental management system (EMS), staff competence & training, Accident Management Plan (AMP), emissions prevention, site security, Fire Prevention Plan (FPP), records keeping and emergency provisions.
- 2.5. NRS Meriden Aggregates Ltd will operate under an EMS that meets the requirements of the Environmental Permit and Environment Agency guidance, ‘Develop a Management System: Environmental Permits’.
- 2.6. The EMS will include information and procedures regarding the treatment of hazardous and non-hazardous waste on the Site.
- 2.7. The EMS also includes an environmental policy which commits senior management and directors to regularly review operations undertaken and continue to improve environmental performance.
- 2.8. The operating procedures included within the EMS accord with the relevant Appropriate Measures, requirements.
- 2.9. A hard copy of the Environmental Management System will be kept on Site at all times. The EMS will include a copy of the Environmental Permit including the following sections:
- EMS Report
  - Process Flow Diagrams
  - Environmental Policy
  - Site Condition Report
  - Major Incident Plan
  - Business Continuity Plan
  - Environmental Accident Management Plan
  - Noise Management Plan
  - Dust Management Plan
  - Environmental Risk Assessment
  - Authorisations
  - Procedures & Forms:
    - Implementation including staff training, reviewing & auditing documentation etc.
    - Waste Acceptance
    - Storage & Handling
    - Waste Treatment
    - Removal of Wastes
    - End of Waste
    - Sampling & Testing
    - Site Management
    - Environmental Protection



- List of raw materials used
- Maintenance
- Emergency Provisions
- Reporting
- Drawings

2.10. A detailed summary of the EMS is provided in the Environmental Permit Variation Application Report.



### 3. Waste Acceptance

#### BAT Conclusions

3.1. BAT conclusion 2 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below:*

- *Set up and implement waste characterisation and pre-acceptance procedures,*
- *Set up and implement Waste Acceptance Procedure s,*
- *Set up and implement a waste tracking system and inventory,*
- *Set up and implement an output quality management system,*
- *Ensure waste segregation,*
- *Ensure waste compatibility prior to mixing or blending of waste,*
- *Sort incoming solid waste”.*

3.2. BAT conclusion 33 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input”.*

3.3. BAT conclusion 36 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters”.*

3.4. BAT conclusion 40 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures”.*

3.5. The requirements of BAT conclusion 2, 33, 36 and 40 are covered in Section 3 of the chemical waste appropriate measures.

#### **Chemical waste: appropriate measures for permitted facilities (November 2020)**

##### Pre-Acceptance

3.6. Section 3.1 of the Appropriate Measures provides details on the implementation of procedures that ensure the necessary checks are undertaken prior to any decision being made to accept a waste.

3.7. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for waste pre-acceptance on the Site will now be assessed.

*1. You must implement Waste Pre-Acceptance Procedures so that you know enough about a waste (including its composition) before it arrives at your facility. You need to do this to assess and confirm the waste is technically and legally suitable for your facility. Your procedures must follow a risk-based approach, considering:*

- *the source and nature of the waste*
- *its hazardous properties*
- *potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)*
- *knowledge about the previous waste holder*

3.8. Waste characterisation information which details the above information is obtained by the operator prior to acceptance of waste onto the Site in accordance with the Waste Pre-Acceptance Procedure. A waste information form is used to request information from the waste supplier in a standardised way. The completed waste information form will act as a record to show that waste characterisation information has been received. The Waste Pre-Acceptance Procedure is included as Appendix 1.



2. *When you receive a customer query, and before the waste arrives at your facility, you must obtain the following in writing or in an electronic form:*

- *details of the waste producer including their organisation name, address and contact details*
- *the source of the waste (the producer's business and the specific process that has created the waste)*
- *where the holder of the waste is not the producer, details of the waste holder including their organisation name, address and contact details*
- *information on the nature and variability of the waste production process and the waste*

*You must also obtain (in writing or electronic form) details about the waste including:*

- *a description*
- *the List of Waste code (European Waste Classification (EWC) code)*
- *its physical form*
- *its composition (based on safety data sheets, where appropriate, or representative samples and robust laboratory analysis)*
- *any hazardous properties*
- *any persistent organic pollutants (POPs) present*
- *the potential for self-heating, self-reactivity or reactivity to moisture or air*
- *any odour*
- *its age, that is when it first became waste*
- *the type of packaging*
- *an estimate of the quantity you expect to receive in each load and in a year*

*You must also obtain confirmation that the waste does not contain a radioactive source. If there is a risk of radioactive contamination you must obtain confirmation that the waste is not radioactive, unless your facility is permitted to accept such waste.*

3.9. The above details for each customer will be kept electronically within the operator's computer database.

3. *You must consider whether specific wastes, from among those you are permitted to receive, have properties that can pose unacceptable risks to the site or process, for example due to:*

- *a risk of explosion (for example, if ammunition or aerosol canisters are present, or mixing processes that could lead to explosion)*
- *corrosion caused by strong acids.*
- *a risk of uncontrolled reactions (for example, if peroxides or strong oxidants are present, or polymerising components such as certain isocyanates)*
- *a risk of the evolution of gases (for example if cyanides, sulphides, or dissolved gas are present)*

3.10. The risk from waste accepted at the Site has been considered as part of the Environmental Risk Assessment, see Appendix 5 Environmental Risk Assessment. It is not considered that the wastes proposed to be accepted will pose an unacceptable risk to the Site or the treatment processes. The EMS will contain an Environmental Accident Management Plan that will contain further assessment and information with regard to risk from accidents.

5 *You must obtain and analyse a representative sample of a waste if:*

- *the chemical composition or variability of the waste is unclear from the information supplied by the customer*
- *there are doubts about whether the sample analysed is representative of the waste*
- *you will treat the waste at your facility (this allows you to carry out tests to determine if the planned treatment will be safe and effective)*



*Where you rely on a customer sample you must record that you have done this and the reason why the customer sample is acceptable.*

3.11. Hazardous waste that is imported onto the Site will be accompanied by waste characterisation information, which will include lab test results and a classification assessment in accordance with technical guidance WM3: Waste classification – Guidance on the classification and assessment of waste.

3.12. The operator may also accept hazardous waste that has not been classified as hazardous but is assumed to be hazardous. This waste is stored separately to classified hazardous waste until it has been sampled and tested. This waste will be sampled and tested in house to determine if it is hazardous prior to treatment via screening. Test results will be assessed in accordance with WM3 Guidance.

*6. You may not need a representative sample where, for example, the waste is:*

- asbestos*
- a pure product chemical or aerosol where the chemical composition and hazardous properties are available in a REACH compliant safety data sheet*
- packaged cosmetics and pharmaceuticals*
- contaminated clothing, packaging or rags*
- an 'article', for example batteries, lighting tubes, waste electrical or electronic equipment, end-of-life vehicles or parts of vehicles, metal waste and scrap metal*
- solid non-hazardous waste (except for mirror entries when the waste composition is unknown)*
- contaminated wood and roofing material*
- produced in an emergency – you must not treat or offload such wastes until you have completed a full characterisation.*

3.13. None of the above materials are proposed to be accepted on to the Site.

*6.1. You may also not need a representative sample if the waste is laboratory smalls in containers of less than 5 litres. Laboratory smalls generally contain pure chemical elements and compounds from laboratories or arise when laboratory stores are cleared. When drums are used for laboratory smalls, a list of the contents must be stored within the drum below the lid or attached to the drum. Similarly for other types of packages containing laboratory smalls, a list of contents is appropriately stored within (or attached to) the packaging. Each packed drum (or other package) is then labelled with the hazard for carriage, for example under the International Carriage of Dangerous Goods by Road (ADR) treaty. You should provide packaging guidance to your customer or their intermediary if the person packing the laboratory smalls does not work for you.*

3.14. None of the above materials are proposed to be accepted on to the Site.

*7. After fully characterising a waste, you must technically assess the waste's suitability for treatment or storage to make sure you can meet permit conditions. You must also do this to meet any Control of Major Accident Hazards (COMAH) requirements, because wastes, raw materials and end-of-waste materials all contribute to COMAH limits. You must make sure that the waste complies with the site's treatment capabilities. In the case of water based liquid waste, you may perform laboratory scale tests to predict the treatment's performance, for example on breaking of emulsion or biodegradability.*

3.15. Process Flow Diagrams have been produced that provide details on the suitability of waste for treatment on Site. It will be the responsibility of the Site Manager/Technical Assessor to assess incoming waste to ensure that the correct treatment is carried out. Process Flow Diagrams are provided in Appendix 4 Technical Summary

3.16. Hazardous waste accepted on to the Site will either be:

- Unclassified hazardous waste (waste that has not been classified as hazardous but is assumed to be hazardous) that does not contain asbestos.



- Classified hazardous waste that does not contain asbestos.
- Asbestos containing waste (both fibrous and bonded asbestos).
- Asbestos containing waste, which may or may not contain other hazardous properties.

- 3.17. Waste containing asbestos will be accepted onto the Site and classified as hazardous due to the content of visible particles of asbestos or asbestos fibres. Waste that contains visible particles of asbestos will be suitable for handpicking to remove this. Wastes that contain asbestos fibres will be sub sampled and tested to determine the correct classification.
- 3.18. A technical assessment of the appropriate treatment methods to be employed will be undertaken by the Technical Assessor using the information that has been provided at the pre-acceptance stage. The treatment processes selected will be dependent on the contaminants present. The selected treatment route for a particular waste load will be documented and implemented. The EMS for the Site will contain a procedure to control the use of this information to ensure that wastes are appropriately treated on the Site.
- 3.19. Each hazardous waste stream will have a clear treatment and recovery / disposal route. The Cornets End Quarry – Screening of Hazardous Waste Process Flow Diagram illustrates how hazardous waste accepted on to the site for treatment will be treated to generate a number of fractions of waste. Each fraction of waste will be tested, and the results assessed in accordance with WM3 Guidance. Waste that is identified to be non-hazardous will undergo further processing, before being sent off Site for recovery. Waste that is identified to be hazardous may be sent off Site as hazardous waste, or for further treatment on the Site.

*9. You must keep pre-acceptance records for at least 3 years (in a computerised waste tracking system) following receipt of the waste. If an enquiry from a waste producer does not lead to the receipt of waste, you do not need to keep records.*

- 3.20. All records relating to Pre-Acceptance are kept alongside duty of care documentation and are kept for a minimum of three years, in accordance with the Waste Acceptance Procedure.

*10. You must reassess the information required at pre-acceptance if the:*

- *waste changes*
- *process giving rise to the waste changes*
- *waste received does not conform to the pre-acceptance information*

*In all cases, you must reassess the information required at pre-acceptance on an annual basis.*

- 3.21. In the event that the waste from a customer changes, the operator will ensure that the information required at the pre-acceptance stage will be updated and will be kept alongside duty of care documentation for a minimum of three years. Where waste arrives on Site and does not conform to the pre-acceptance information, the information required at the pre-acceptance stage will be reassessed. These requirements are included in the pre acceptance procedure, see Appendix 1 Pre-acceptance Procedure.

*12. You must keep the roles and responsibilities of sales staff and technical staff separate. If sales staff are involved in waste enquiries then technical staff must do a final technical check before approval. You must keep this final technical check independent of commercial considerations, to make sure you:*

- *only accept wastes that are suitable for the site*
- *avoid accumulating waste*
- *have enough storage and treatment capacity*

- 3.22. The EMS will contain a company organogram to identify the roles and responsibilities of sales staff and technical staff. This will demonstrate the separation of the requirement for the technical assessment of waste to be separate from the commercial considerations of the company.





- 3.23. Procedures within the EMS, including waste pre-acceptance and waste acceptance, include reference to who is responsible for each point in the procedure. Sales staff are not involved with the technical assessment of the suitability of the treatment of a waste on the Site.

*13. Fully characterising the waste's composition is an essential step in the pre-acceptance procedure because hazardous wastes can be very complex. You must be sure you know what is in the waste so that you can safely handle or treat it. You must select analytical tests based on knowing the process that generates the waste. You must characterise the waste's composition at the pre-acceptance stage. You need to do this to make sure you comply with regulatory requirements and to work out the most appropriate waste storage, transfer or treatment route.*

- 3.24. The waste accepted onto the Site is construction/demolition or utility waste therefore the composition of the waste will depend on aspects of the site from which it has been taken. This information is typically available in the form of a site investigation report. Information on the waste composition will be collected and assessed in accordance with the Waste Pre-Acceptance Procedure, see Appendix 1 Pre-acceptance Procedure.

*16 For solid waste, any or all of the following may be appropriate:*

- *measure the bulk density of the sample, without pre-treatment of the sample*
- *measure the water content*
- *measure the ash content after 550°C*
- *test for cyanide, and if present determine the free and complexed cyanide levels*
- *test for POPs*
- *check the content of volatile and semi volatile substances*
- *check the mass balance of solid waste*

- 3.25. The Site does not accept any waste other than solid waste therefore all waste received at the Site will be tested in accordance with the Waste Pre-acceptance Procedure.

- 3.26. Information on the waste to be accepted including chemical composition, hazardous properties, physical appearance, colour etc. are included on the Waste Information Form that is required to be completed in accordance with the Waste Pre-acceptance procedure.

*18 Analyses must be carried out by laboratories that have robust quality assurance procedures and used recognised test methods. The EN ISO 17025 accreditation represents best practice.*

- 3.27. Where samples are sent for analysis at an external laboratory. Steps will be taken to ensure that the laboratory carried out the analysis in accordance with the necessary quality assurance.

- 3.28. Some analysis of waste will be undertaken on the Site however, this will be for the purpose of process monitoring rather than compliance. Samples of the waste will be labelled, and chain of custody documentation completed before being sent to the laboratory. The laboratory will use a sample tracking system to ensure chain of custody between samples and testing results.

#### Waste Acceptance

- 3.29. Section 3.2 of the Appropriate Measures describes the procedures for when waste arrives at the Site i.e., Waste Acceptance Procedures.

- 3.30. A comparison of the relevant Appropriate Measures (chemical waste) requirements with the proposed procedures for waste acceptance on the Site are assessed below.

*1. You must follow Waste Acceptance Procedures to check that the characteristics of the waste you receive match your pre-acceptance information. This is to confirm that the waste is as expected and you can accept it. If it is not, you must confirm that you can accept it as a non-conforming waste, or you must reject it.*





- 3.31. The EMS contains a Waste Acceptance Procedure, see Appendix 2 Waste Acceptance Procedure, that provides details for checking wastes that arrive at the Site match the information obtained during pre-acceptance. This information is included on the Waste Information Form associated with the Pre-acceptance Procedure. Checks made on the waste will include visual checks on arrival and offloading. Samples may be taken at this stage for compliance testing to ensure that the waste received is as expected. If the waste is not permitted to be accepted and is unsuitable for treatment, it is regarded as non-conforming waste and quarantined, or it must be rejected in accordance with the Non-Conforming Waste and Waste Rejection Procedure.
- 3. Other than in an emergency (for example, taking waste from an emergency incident clean-up), you must only receive pre-booked wastes onto site that have been adequately pre-accepted and are consistent with the pre-acceptance information.*
- 3.32. Other than in an emergency (for example, taking waste resulting from an emergency incident clean-up), waste is only accepted if it is in accordance with the Waste Acceptance Procedure.
- 5. You must visually check wastes or their packaging and verify them against pre-acceptance information and transfer documentation before you accept them on site. The extent of the initial visual check is determined by the waste type and how it is packaged.*
- 3.33. Incoming waste loads are visually checked prior to acceptance on to the Site to ensure that the waste match the description on the Hazardous Waste Consignment Note and information obtained during the pre-acceptance stage.
- 6. You must check and validate all transfer documentation and resolve discrepancies before you accept the waste. If you believe the incoming waste classification and description is incorrect or incomplete, then you must address this with the customer during waste acceptance. You must record any non-conformances. If you have assessed the waste as acceptable for on-site storage or treatment, you must document this.*
- 3.34. All transfer documentation will be checked on arrival of waste on to the Site. If any discrepancies are noted, then these will be resolved prior to acceptance of the waste. If the discrepancy is incomplete or inaccurate paperwork, then this will be raised with the customer to resolve to enable the waste to be accepted. If this cannot be resolved, then the waste will be rejected. If the discrepancy is due to the non-conformance of the waste with the documentation, then the waste will be rejected until accurate information is supplied on the waste.
- 7. You must have clear criteria for non-conforming wastes including rejection of such waste. You must also have a written procedure for recording, reporting and tracking non-conforming wastes, including notifying the relevant customer or waste producer, and the regulator.*
- 3.35. If an incoming waste load is not acceptable under the Environmental Permit, then it will be rejected in accordance with the Waste Rejection Procedure. See Appendix 3 Waste Rejection Procedure.
- 3.36. If the waste has been accepted and off loaded on to the Site before it was identified as being unacceptable the load will be put into the quarantine area. Waste from the quarantine area will be removed from the Site in accordance with the Waste Rejection Procedure.
- 8. You must weigh each load of waste on arrival to confirm the quantities against the accompanying paperwork, unless alternative reliable systems are available (for example, based upon density and volume). You must record the weight in the computerised waste tracking system.*
- 3.37. The Site will have an installed weighbridge and all vehicles entering and leaving the Site, carrying waste, will be required to pass over the weighbridge, see Appendix 8 Waste Acceptance Procedure. The weighbridge will be connected to a computerised tracking system that will contain information on the waste on to be received and waste already on the Site.



9. *The person carrying out waste acceptance checks must be trained to effectively identify and manage and non-conformances in the loads received, complying with this guidance and your permit conditions.*

- 3.38. All site staff involved in the acceptance of waste on to the Site are regularly trained on appropriately implementing EMS procedures, including the Waste Acceptance Procedure. Implementation of the Waste Acceptance Procedure ensures waste is accepted in accordance with the Appropriate Measures and permit conditions. The EMS will also contain procedures on the training of staff on EMS procedures. Records will be kept of identified training needs for staff and training logs to track training provisions.

11. *You must minimise the manual handling of waste. You should use mechanical unloading technologies where it is possible, safe and practicable to do so.*

- 3.39. The manual handling of waste is minimised on the Site where possible, mechanical equipment will be employed wherever possible.

12. *Offloading, sampling, general storage, reception and quarantine areas must have an impermeable surface with self-contained drainage, to prevent any spillage entering the storage systems or escaping off site.*

- 3.40. The waste storage and treatment areas have impermeable surfacing. There is 200mm kerbing around the perimeter of the hazardous waste storage and treatment area to contain any surface water. Surface water is collected in an underground storage tank which is routinely removed by a suitably licenced facility for treatment and disposal.

13. *The designated sampling point or reception area must be close to the laboratory or checking area and needs to be visible.*

- 3.41. Waste accepted on to the Site will be off-loaded into a reception area depending on the waste type and treatment to be carried out. Sampling will be taken from stockpiles within the reception areas. Wastes being off loaded into the reception areas are checked during off-loading to ensure that the waste does not contain contravening materials.

#### Acceptance of containerised waste

14. *After you have completed the initial visual inspection and confirmatory checks, you must offload waste containers into a dedicated reception area to await detailed checks or sampling. Wastes that do not require further checking can go directly into the appropriate storage area. You must not unload wastes if you do not have enough space.*

- 3.42. The Site will not accept containerised waste. Waste to be accepted on Site will be from construction / demolition / excavation works.

18. *Quarantine storage must be for a maximum of 5 working days. You must have written procedures for dealing with wastes you hold in quarantine, and a maximum storage volume. For some limited and specific cases (for example the detection of radioactivity), you can extend quarantine storage time if the Environment Agency agrees.*

- 3.43. Waste will be stored for a maximum of 5 working days in the quarantine area. The Waste Rejection Procedure provides details for removing wastes from the quarantine area, see Appendix 3 Waste Rejection Procedure.

20. *You must make sure that all waste packages you receive are marked or labelled with:*

- *a description of the waste that also gives its chemical identity and composition*
- *a unique tracking system reference*
- *the date of arrival on site*
- *a hazard code or codes (using a product or transport symbol)*



*The unique reference must allow you to track the waste and easily identify the producer of the waste.*

- 3.44. The Site will not receive packaged waste.

Acceptance of bulk wastes

*24. Bulk loads (liquid or solid) can only be offloaded after they have been fully verified as compliant. You must not accept a non-compliant bulk load for interim storage except in an emergency. Verification testing should include:*

- *checking consistency with the pre-acceptance information*
- *compatibility with the receiving vessel contents*
- *where appropriate, checking treatability by using laboratory scale simulation*

- 3.45. Waste arriving at the Site will be subject to several processes to check that it is acceptable. The initial visual check will occur at the weighbridge along with the checks made on the paperwork. Following these, further visual checks are made during off-loading and stockpiling.
- 3.46. Waste accepted on to the site may be subject to compliance sampling and testing to ensure that the waste received is as expected to be received.

Acceptance Sampling

*27 You must representatively sample all wastes, bulk or containerised (including from every container) at the acceptance stage and carry out verification and compliance testing. You must not just rely on the written information supplied. The requirement to sample does not apply to some wastes, for example:*

- *pure product chemicals*
- *asbestos*
- *contaminated clothing, packaging or rags*
- *'articles'*
- *laboratory smalls*
- *packaged cosmetics and pharmaceuticals*
- *solid non-hazardous waste (except for mirror entries when the waste composition is unknown)*
- *contaminated wood and roofing material*
- *waste received directly from a householder*
- *green wastes and food wastes*

- 3.47. Hazardous waste accepted on to the Site following pre-acceptance checks and information gathering, will be subject to compliance sampling and testing depending on the characteristics of the waste itself and the source site.
- 3.48. Waste that is accepted on to the site that has not been classified as hazardous but is assumed to be hazardous will be sampled and tested on the Site in accordance with the Waste Acceptance Procedure to determine its hazardous properties.

*30 On Site Sampling must take place under the supervision of the site's qualified staff. Where a driver arrives at the site with a sample taken elsewhere, the sample:*

- *must be verified as representative, reliable and obtained by a person technically competent to take it*
- *is only acceptable if it was taken for specific health or safety purposes*

- 3.49. Hazardous waste accepted onto the site will only be received under the supervision of a suitably qualified person and the sampling will be undertaken by a qualified person. The EMS will contain a procedure with regard to sampling of waste.



*33 You must keep a record of the sampling regime, process and justification in your computerised waste tracking system.*

- 3.50. The requirements for sampling of wastes accepted on to the Site will be determined and recorded on the computerised tracking system and within the Waste Information Form. These records will justify the decision regarding the frequency of compliance testing.

*34 You should keep acceptance samples on Site for at least 2 working days after you have:*

- *Treated a waste and removed its treatment residues from the facility*
- *Transferred a waste from your Site*

*Where you are transferring waste oil from your site you must keep acceptance samples for at least 2 working days after the waste has been treated off site. You must analyse the waste oil sample if a problem is found at the off-site treatment plant. You only need to keep samples that you did not analyse at acceptance.*

- 3.51. Samples of waste taken for compliance testing will be stored for a minimum of two days after the waste has been treated or removed off-site, in accordance with the Waste Acceptance Procedure, see Appendix 8 Waste Acceptance Procedure.

#### Testing and Analysis

*40 You must test each waste for acceptance according to the parameters decided at pre-acceptance, plus any appropriate additional checks. You should record the results of the tests in the computerised waste tracking system. You should note and investigate any discrepancies.*

- 3.52. All testing of waste carried out during waste acceptance will be carried out in accordance with the requirements that were identified at the pre-acceptance stage. This information will be recorded on the Waste Information Form and in the computerised tracking system. The system will also contain details of any investigation carried out with regard to discrepancies.

#### Waste Tracking

- 3.53. Section 3.3 of the Appropriate Measures provides details on the use of a waste tracking system to ensure waste is tracked throughout acceptance, storage, treatment, and removal off Site.

- 3.54. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for waste tracking on the Site is provided below.

*1. You must use a computerised tracking system to hold up-to-date information about the available capacity of the waste quarantine, reception, general and bulk storage areas of your facility, including treatment residues and end-of-waste product materials.*

*2. Your waste tracking system must hold all the information generated during:*

- *pre-acceptance*
- *acceptance*
- *non-conformance or rejection*
- *storage*
- *repackaging*
- *treatment*
- *removal off site*

*This information must be easily accessible.*

- 3.55. The information obtained from pre-acceptance, acceptance, non-conformance / rejection, storage, repackaging, treatment, and removal off site is retained electronically within the operator's computerised tracking system.



- 3.56. Reviewing information held in the tracking system will allow the operator to readily see the available capacity of the storage areas and the progress of waste batches through the treatment processes on the Site.



## 4. Waste Storage & Handling

### BAT Conclusions

4.1. BAT conclusion 4 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below:*

- *Optimised storage location,*
- *Adequate storage capacity,*
- *Safe storage operation,*
- *Separate area for storage and handling of packaged hazardous waste”.*

4.2. BAT conclusion 5 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures”.*

4.3. The requirements of BAT conclusion 4 and BAT conclusion 5 are covered in Section 4 of the Chemical Waste Appropriate Measures.

### **Chemical waste: appropriate measures for permitted facilities (November 2020)**

4.4. Section 4 of the Appropriate Measures describes the requirements for the implementation of systems and procedures to ensure that wastes are transferred to appropriate storage areas safely and stored suitably.

4.5. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for waste storage and handling on the Site is provided below.

1. *You must store waste in locations that minimise the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment.*

4.6. The location of waste storage areas is designed to minimise the handling of waste. The handling of waste is undertaken by suitably trained staff always using appropriate equipment.

4.7. The computerised waste tracking system and storage areas are designed to minimise double handling as much as possible.

4.8. Different waste types will be stored separately on the Site to avoid cross contamination. Appropriate equipment will be used to move waste to and from the storage areas.

2. *Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools). You must store all waste within the secure area of your facility to prevent unauthorised access and vandalism.*

4.9. Waste is stored within the permitted area and located away from sensitive receptors. The nearest watercourse/body of water are ponds located just north of the permit boundary.

4.10. The Site is managed and operated in accordance with an EMS which includes site security measures to prevent unauthorised access. The Site is constantly manned during operational hours. There is Site security present during non-operational hours.

3. *You must clearly document the maximum storage capacity of your site and the designated storage areas. You must not exceed these maximum capacities. You should define capacity in terms of, for example, maximum tank or vessel capacities, tonnage and numbers of skips, pallets or containers. You must regularly monitor the quantity of stored waste on site and designated areas and check against the allowed maximum capacities.*



- 4.11. The Environmental Permit will include the maximum storage limit for the amount of waste to be stored on site at any one time. This storage capacity of the site will be detailed in the EMS and will not be exceeded.
- 4.12. The quantity of waste stored on Site will be regularly monitored to ensure the amount of waste stored does not exceed the limits included within the Environmental Permit.
- 4.13. The EMS will contain a Waste Storage Procedure, this will include a Storage Plan to show:
- The location of waste and product storage areas.
  - The type of waste to be stored in the waste storage areas.
  - The capacity of the storage areas.
- 5. You must clearly mark hazardous waste storage areas and provide signs showing the maximum quantity and hazardous properties of wastes that can be stored there.*
- 4.14. The storage areas for hazardous waste will be clearly segregated and labelled to show the hazardous properties of the waste present in the area and the maximum quantity of waste which can be stored in that location at any one time.
- 6. Storage area drainage infrastructure must:*
- *contain all possible contaminated run-off*
  - *prevent incompatible wastes coming into contact with each other*
  - *make sure that fire cannot spread*
- 4.15. The surfacing of the Site where waste is stored will be impermeable. Surface water which has come into contact with waste will be collected via the drainage system which comprises of an underground storage tank. The hazardous waste storage and treatment area has 200mm kerbing surrounding the perimeter to contain any possibly contaminated surface water / run-off.
- 4.16. No wastes that are incompatible with each other are accepted on the Site.
- 4.17. The waste accepted onto the Site will predominantly be from construction / demolition / excavation works. Such waste is not combustible and therefore the risk from fire spreading through the waste stored on site is very low.
- 11 You must not store or hold wastes on site in vehicles or vehicle trailers unless you are receiving them or preparing them for imminent transfer (meaning that you will remove them from site within 24 hours, or 72 hours if over a weekend).*
- 4.18. Wastes will be stored within dedicated storage areas and will not be stored within vehicles or vehicle trailers. Wastes are unloaded immediately after inspection in accordance with the Waste Acceptance Procedure.
- 15 You must not accumulate waste. You must treat wastes, or remove them from the site, as soon as possible. Generally, you should do this within one month of receipt but all wastes must be removed within 6 months of receipt. This applies even when the waste might be used as a reactant. Where a shorter time period is given in a permit condition you must comply with the permit for that waste. Where a waste is stored for longer than allowed you must inform the Environment Agency.*
- 4.19. Waste will not be accumulated on the Site. The Waste Storage & Handling Procedure will contain information relating to the maximum storage duration for each waste storage area. It is the intention of the operator to treat and remove waste as soon as possible. Wastes will be not be stored on the Site for longer than 6 months.
- 21 There must be pedestrian and vehicular access (for example, forklift) at all times to the whole storage area so that you can retrieve containers without removing others that may be blocking access – other than removing those in the same row.*





4.20. No containerised waste will be accepted on to the Site

*36 You must:*

- *Contain wash waters within an impermeable area and either discharge them to foul sewer or dispose of them appropriately off Site.*
- *Prevent run-off into external areas or to surface water drains*

4.21. Hazardous waste operations and storage will be carried out on an impermeable surface. This area is surrounded by 200mm kerbing to prevent any surface water escaping.

4.22. Wash waters produced through washing activity will be collected and treated and recirculated within the site or tankered off site for disposal.

*37. You must manage waste in a way that prevents pests or vermin. You must have specific measures and procedures in place to deal with wastes that are identified as causing pests or vermin.*

4.23. Waste storage areas will be inspected daily for the presence of pests and vermin in accordance with the Housekeeping, Litter, Pest & Vermin Control Procedure which will be included as part of the EMS. The predominant waste types which will be stored on the Site are construction / demolition / excavation waste. These waste types are not inherently putrescible, and it is considered that they will not attract pests or vermin.

*38. You must inspect storage areas, containers and infrastructure daily. You must deal with any issues immediately. You must keep written records of the inspections. You must rectify and log any spillages of waste.*

4.24. Waste storage areas will be inspected daily as part of the implementation of the Maintenance Procedure requirement for daily inspections to be undertaken. All inspection records including corrective actions are retained.

*40. You must not carry out any activities that represent a clear fire risk within any storage area. Examples include:*

- *grinding*
- *welding or brazing of metalwork*
- *smoking*
- *parking normal road vehicles, except while unloading or loading*
- *recharging batteries*

4.25. Activities which are considered to present a fire risk will not be undertaken in, or, in the vicinity of the waste storage areas. The waste stored on this site will not be combustible.





## 5. Waste Treatment

### BAT Conclusions

- 5.1. BAT conclusion 40 (European Commission - establishing BAT conclusions for waste treatment) states:

*In order to improve the overall environmental performance BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2)*

- 5.2. BAT conclusion 41 (European Commission - establishing BAT conclusions for waste treatment) states:

*In order to reduce emissions of dust, organic compounds and NH<sub>3</sub> to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.*

- a. *Adsorption*
- b. *Biofilter*
- c. *Fabric filter*
- d. *Wet scrubbing*

*BAT associated emission level for channelled emissions of dust to air from physico-chemical treatment of solid or pasty waste..... and associated monitoring in BAT 8.*

It is not anticipated that the treatment activities will create significant diffuse emissions due to the nature of the waste and the concentration and nature of contaminants likely to be present. It is considered that the volume of waste and the size of the processing plant would constrain the enclosure of the equipment within a building.

### Chemical waste: appropriate measures for permitted facilities (Nov 2020)

- 5.3. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for waste treatment on the Site is provided below.

1. *Waste treatment must have a clear and defined benefit. You must fully understand, monitor, and optimise the waste treatment process to make sure 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.*

- 5.4. The purpose of the proposed waste treatment is to separate non-hazardous waste from the hazardous waste which will then be re-classified to produce a recycled aggregate. This treatment will reduce the volume of hazardous waste. No treatment will take place with the purpose of dilution of hazardous waste.

2. *You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using. This should include information about the characteristics of the waste you will treat and the waste treatment processes, including:*
  - *Simplified process flowsheets that show the origin of any emissions*
  - *details of emission control and abatement techniques for emissions to air and water, including details of their performance*
  - *diagrams of the main plant items where they have environmental relevance, for example, storage, tanks, treatment, and abatement plant design*
  - *details of chemical reactions and their reaction kinetics and energy balance*
  - *details of physical treatment processes for example thermal desorption, distillation, phase separation, shredding, filtration, compaction, centrifuging, heating, cooling, or washing*
  - *details of biological treatment processes*



- *details of any effluent treatment*
  - *a description of any flocculants or coagulants used*
  - *an equipment inventory, detailing plant type and design parameters, for example, time, temperature, pressure*
  - *waste types to be subjected to the process*
  - *the control system philosophy and how the control system incorporates environmental monitoring information*
  - *process flow diagrams (schematics)*
  - *venting and emergency relief provisions*
  - *a summary of operating and maintenance procedures*
  - *process instrumentation diagrams*
  - *monitoring points and monitoring schedules*
- 5.5. The only plant involved in the treatment operations will be the screening (both washing and dry) plant. This is outlined in the hazardous waste process flowchart included in Appendix 4, Technical Summary.
- 5.6. The treatment process does not rely on any chemical reactions. Hazardous waste is screened to separate fractions of waste by particle size.
- 5.7. Waste treatment includes screening (wet and dry) of hazardous waste to separate fractions of waste by particle size. Therefore no flashpoints etc. are applicable to this activity.
- 5.8. No control monitoring system is proposed for the hazardous waste treatment activities. Treatment operations include screening (wet and dry) only. The Operating Procedures within the EMS will be implemented to ensure that all fractions of processed waste are sampled and tested. Test results will be assessed in accordance with WM3 Guidance, and the waste will then be classified as non-hazardous or hazardous. It is not considered that a control system is necessary as the testing and assessment of every fraction of processed waste is carried out in all instances.
- 5.9. A process flow diagram of the proposed treatment has been provided as part of the permit application. The process flow diagram shows the storage facilities used and the treatment techniques. The process flow diagrams for both Asbestos containing waste and other hazardous waste are included in Appendix 4, Technical Summary.
- 5.10. There is no proposal for venting or emergency relief, as the operations are not pressurised. Waste types accepted on to the Site are not considered to pose a significant risk to human health from respiration, due to the low concentrations of contaminants within the waste and nature of the waste.
- 5.11. Operating procedures will be included within the EMS which will outline how the treatment process will be carried out and the controls that are in place to mitigate risk to the environment and ensure efficient waste treatment. The operating procedures will include several procedures, including the Waste Acceptance Procedure, Waste Storage & Handling Procedure, Waste Treatment and the computerised waste tracking system. In this way, operating procedures and computerised waste tracking system will cover how the waste is accepted, stored, treated and transported throughout the Site. Further procedures are included within the EMS which aim to control the risk posed by dust, mud, litter, odour etc.
- 5.12. The Maintenance Procedure within the EMS will contain details on the planned preventative maintenance (e.g., routine maintenance / servicing) of vehicles / plant / equipment. Several forms are used to record the maintenance on the Site, including a schedule of planned preventative maintenance showing when routine maintenance of vehicles / plant / equipment is required. The Maintenance Procedure will also include details on how the operator will carry out regular inspections on a daily, weekly, monthly, and annual basis.
- 5.13. Inspections will include plant, vehicles, equipment, infrastructure, environmental protection (e.g., presence of mud, dust, odour etc.) and housekeeping (e.g., evidence of litter, pests, vermin etc.). Any action that is required as a result of the planned preventative maintenance or regular inspections will be recorded using an Action Form which will document how the operator has resolved an issue.



- 5.14. No abnormal operating conditions are expected, other than stoppages and shut-downs due to the breakdown of the screening plant. In this instance the operator would aim to repair or replace the faulty part screening plant as quickly as possible. Contingency plans will be in place within the EMS to document how the operator will not accept waste when there is no clear way to treat / remove the waste and/or will need to remove waste on the Site if the maximum storage durations are at risk of being exceeded.
- 5.15. Hazardous waste treatment activities involve the screening of waste to separate fractions of waste according to their particle size. Since contaminants are likely to bind to the surface of particles, proportionally more contaminants are likely to be present in the fraction of waste that contains the smaller particles. Therefore, the larger particles of waste, e.g., lumps of concrete, are likely to be non-hazardous.
- 5.16. Variables within the treatment process are not proposed for the following reasons:
- The waste types accepted on to the Site are construction / demolition and utility waste and will be suitable for screening.
  - The hazardous properties and contaminants within the waste are not in significant quantities that could cause a reaction. The concentration of contaminants within the overall batch is low.
  - Confirmation / validation sampling and testing is carried out on each fraction of waste generated from the treatment process. Waste is sent to the appropriate destination based on whether is classified as hazardous or non-hazardous.
- 5.17. The treatment does not rely on any reaction chemistry. The end point to the process will be when the screening has been completed and the fractions of waste are generated.
- 9. To track and control the process of change you must have a written procedure for proposing, considering and approving changes to technical developments or procedural or quality changes*
- 5.18. The EMS will contain a Reviewing & Auditing Documentation Procedure, which includes information on how the EMS will be reviewed in the event of a change to the Environmental Permit, equipment / processes on the site etc. The review of the EMS documentation will be recorded using a Management of Change Procedure, which will document what amendments are required as a result of the proposed change.
- 10. Where an emission is expected, all treatment or reactor vessels must be enclosed. Only vent the to the atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief).*
- 5.19. There are no treatment/reaction vessels used in the treatment process as the treatment is not reliant on a reaction. No abatement is proposed for the screening activities that are carried out on the Site, as there is not a significant likelihood that emissions could cause significant harm to the environment or human health, see Appendix 5 Environmental Risk Assessment (ERA).



## 6. Emissions

### Emissions to Air

#### BAT Conclusions

6.1. BAT Conclusion 14 (European Commission - establishing BAT conclusions for waste treatment) states:

*"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.*

- *minimising the number of potential diffuse emission sources,*
- *selection and use of high integrity equipment,*
- *corrosion prevention,*
- *containment, collection and treatment of diffuse emissions,*
- *dampening,*
- *maintenance,*
- *cleaning of waste treatment and storage areas,*
- *leak detection and repair (LDAR) programme".*

6.2. BAT conclusion 41 (European Commission - establishing BAT conclusions for waste treatment) states:

*"In order to reduce air emissions of dust, organic compounds, and NH<sub>3</sub> to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.*

- *Adsorption*
- *Biofilter*
- *Fabric filter*
- *Wet scrubbing".*

6.3. BAT conclusion 50 (European Commission - establishing BAT conclusions for waste treatment) states:

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

- *Adsorption*
- *Fabric filter*
- *Wet scrubbing".*

6.4. Sections 6.1 & 6.2 of appropriate measures (chemical waste) covers BAT conclusion 14, 41 and 50 it describes the potential measures for controlling fugitive emissions to air of various substances.

#### **Chemical waste: appropriate measures for permitted facilities (November 2020)**

6.5. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for emissions control on the Site will now be assessed.

#### Point Source Emissions to Air

4. *To reduce point source emissions to air (for example, dust, volatile organic compounds and odour) from the treatment of waste, you must use an appropriate combination of abatement techniques, including one or more of the following systems:*

- *adsorption (for example, activated carbon)*
- *biofiltration*
- *wet scrubbing*
- *fabric filters*
- *high efficiency particulate (HEPA) filtration*



- *condensation and cryogenic condensation*
- *cyclonic separation*
- *electrostatic precipitation*
- *thermal oxidation*

6.6. The only point source emission to air is the potential vent from the picking station where pieces of asbestos is removed from the waste. If air quality is suitably controlled via water sprays to minimise adequately the potential release of asbestos fibres then there will be no point source emission to air.

#### Fugitive Emissions to air (including odour)

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*

6.7. Waste will arrive at the Site in sheeted vehicles. Visual inspections shall be carried out on loads entering/exiting the Site to ensure that all vehicles are sheeted, in accordance with the Waste Acceptance Procedure, see Appendix 8 Waste Acceptance Procedure. Waste is stored within bays and stockpiles, with the exception of contravening wastes e.g., plastic, metal and glass that are removed from the waste as part of the treatment process and stored within a container.

6.8. Hazardous waste types will be contaminated construction / demolition and utility waste. It is proposed that this waste will be stored within bays outside and stockpiles prior to loading into the screener/wash plant.

6.9. The risk of dust emissions from uncovered stockpiles reaching sensitive receptors has been considered. There will be mitigation measures in place to minimise the risk of dust reaching sensitive receptors, including the use of water bowsers and water sprays to dampen down piles of waste, see Appendix 7 Dust Management Plan.

6.10. Dust emissions from the hazardous waste stored on the Site are unlikely to cause significant damage to the environment or human health due to the scale and nature of contaminants within the waste stored on the site, see Appendix 4 Environmental Risk Assessment.

6.11. Good housekeeping practices will be implemented on the Site, which include inspecting the site on regular basis for mud, debris, litter, pests, vermin etc. Remedial actions will be taken as a result of these inspection checks. Such checks / inspections will be taken in accordance with a Housekeeping, Litter, Pest & Vermin Control Procedure which will be included as part of the Sites EMS.

6.12. Further risk assessment with regard to other emissions such as odour is included in the Environmental Risk Assessment, see Appendix 4 Environmental Risk Assessment.

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 or '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*

- 6.13. It is not considered necessary to store and handle the construction / demolition wastes within a building. This is due to the fact that this waste will not cause significant fugitive emissions. Due to the nature of the waste and the storage and handling of the waste prior to arrival on the Site it is unlikely that significant concentrations of volatile substances will be present in the waste.
- 6.14. It is considered that the predominant fugitive emission resulting from the storage and handling of the waste will be dust. This is due to the waste types accepted at the Site being construction / demolition / excavation waste.
- 6.15. Waste will be stored outside, in stockpiles, on an impermeable surface.
- 6.16. Drop heights will be minimised to reduce fugitive dust emissions. Minimising the height from which material is dropped will reduce the likelihood that particles will become airborne.
- 6.17. Where possible, stockpile heights will be minimised where possible in order to reduce the possibility of particles becoming airborne (via wind whipping). Further information on the storage of waste and techniques employed to minimise the potential for dust emissions is available in the Dust Management Plan, see Appendix 7 Dust Management Plan.

*7. You must regularly inspect and clean all waste storage and treatment areas, equipment (including conveyor belts) and containers. You must have an appropriate regular maintenance programme covering all buildings, plant, and equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases.*

- 6.18. Waste storage areas and equipment will be regularly inspected and cleaned where appropriate. The EMS will contain procedures with regard to housekeeping, inspection, and maintenance on the Site. Daily, weekly, monthly and annual inspection checklists will include checks of litter on Site, fuel storage areas, fire extinguishers, roads, site security, spill kits and buildings on Site.

## **Noise Emissions**

### **BAT Conclusions**

- 6.19. BAT Conclusion 17 ((European Commission - establishing BAT conclusions for waste treatment) states:

*"In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:*

- *a protocol containing appropriate actions and timelines;*
- *a protocol for conducting noise and vibration monitoring;*
- *a protocol for response to identified noise and vibration events, e.g. complaints;*
- *a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures".*

- 6.20. BAT conclusion 18 (European Commission - establishing BAT conclusions for waste treatment) states:

*"In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below.*

- *Appropriate location of equipment and buildings,*
- *Operational measures,*
- *Low-noise equipment,*





- *Noise and vibration control equipment,*
- *Noise attenuation”.*

6.21. Section 6.3 of the Appropriate Measures covers (chemical waste) BAT conclusions 17 and 18 and describes the potential measures for controlling noise emissions.

**Chemical waste: appropriate measures for permitted facilities (November 2020)**

6.22. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for control of noise emissions from the proposed waste treatment activities is provided below.

1. *You should design the layout of the facility to locate potential sources of noise (including building exits and entrances) away from sensitive receptors and boundaries. You should locate buildings, walls, and embankments so they act as noise screens.*

6.23. A Noise Impact Assessment has been produced which identifies the potential sources of noise on the Site and assesses the ways in which the impacts of these sources can be mitigated, see Appendix 6 Noise Impact Assessment.

6.24. The Noise Impact Assessment will be used to inform the contents of a Noise Management Plan that will be included within the EMS.

2. *You must use appropriate measures to control noise, including for example:*

- *adequately maintaining plant or equipment parts which may become more noisy as they deteriorate - for example, bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery*
- *closing doors and windows of enclosed areas and buildings*
- *avoiding noisy activities at night or early in the morning*
- *minimising drop heights and the movement of waste and containers*
- *using broadband (white noise) reversing alarms and enforcing the on-site speed limit*
- *using low-noise equipment, for example, drive motors, fans, compressors and pumps*
- *adequately training and supervising staff*
- *where possible, providing additional noise and vibration control equipment for specific noise sources - for example, noise reducers or attenuators, insulation, or sound-proof enclosures*
- *including pressure relief control on shredder plant enclosures to take account of possible deflagration incidents*

6.25. The EMS will contain a Noise Management Plan. The requirements of the Noise Management Plan and the Noise Impact Assessment will be implemented by way of a Noise Control Procedure in the EMS. In this way noise emissions from the activities on the Site will be appropriately controlled.

6.26. All plant and equipment are operated in accordance with the manufacturer's recommendations. The EMS will contain a Maintenance Procedure which will implement the requirement to carry out a scheduled maintenance regime for all plant and equipment. This will reduce the likelihood of malfunctioning which would lead to an increase in noise emissions.

6.27. Site operatives/staff will ensure that, where possible, drop heights from the movement of waste will be minimised to prevent significant noise from being produced. Site operatives/staff will be adequately trained in the efficient use of machinery and equipment to minimise noise generation across the Site.

3. *Where you expect noise or vibration pollution at sensitive receptors, or it has been substantiated, you must create, use and regularly review a noise and vibration management plan. This must be part of your environmental management system, and must include:*

- *actions and timelines to address any issues identified*
- *a procedure for conducting noise and vibration monitoring*



- *a procedure for responding to identified noise and vibration events, for example, complaints*
- 6.28. The EMS will contain a Noise Management Plan. The requirements of the Noise Management Plan and the Noise Impact Assessment will be implemented by way of a Noise Control Procedure in the EMS.
- 6.29. The EMS contains procedures that implement a requirement for documents within the EMS to be regularly reviewed. Since the Noise Impact Assessment, Noise Management Plan and the Noise Control Procedure will be part of the EMS these documents will be regularly reviewed.
- 6.30. The EMS will contain procedures regarding the action to be taken in the event of a complaint.
- 4. The noise and vibration management plan should also include a noise and vibration reduction programme designed to:*
- *identify the source(s) of noise and vibration*
  - *measure or estimate noise and vibration exposure*
  - *measure or estimate noise and vibration exposure*
  - *implement prevention and reduction measures*
- 6.31. The EMS will contain a procedure for Noise Control. This procedure will include the measures (e.g., minimising drop heights) that will be implemented on Site to help reduce noise emissions from the waste operations. All plant and equipment are operated in accordance with the manufacturer's recommendations. The Maintenance Procedure within the EMS will implement the requirement to carry out a scheduled maintenance regime for all plant and equipment. This will reduce the likelihood of malfunctioning which may lead to an increase in noise emissions.





## 7. Process Efficiency

### Raw materials

#### BAT conclusions

- 7.1. BAT conclusion 11 (European Commission - establishing BAT conclusions for waste treatment) states:

*“BAT is to monitor the annual consumption of water, energy, and raw materials as well as the annual generation of residues and wastewater, with a frequency of at least once per year”.*

- 7.2. BAT conclusion 22 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to use materials efficiently, BAT is to substitute materials with waste”.*

- 7.3. Section 8.2 of the appropriate measures (chemical waste) covers BAT conclusions, 11 and 22 it describes the appropriate measures for raw materials used.

#### Chemical waste: appropriate measures for permitted facilities (November 2020)

- 7.4. A comparison of the relevant appropriate measure requirements with the proposed procedures for raw materials will now be assessed.

1. *You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact.*

- 7.5. The EMS will contain a form of all the raw materials used on Site and their properties, as well as the consumption of raw materials per annum

2. *You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products.*

- 7.6. The raw materials form will be reviewed annually, within this review the material used will be considered if any can be substituted or changed to alternatives.

### Water Use

#### BAT conclusions

- 7.7. BAT conclusion 35 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to reduce the generation of wastewater and to reduce water usage, BAT is to use all of the techniques given below*

- *Segregation of water streams*
- *Water recirculation*
- *Minimisation of generation of leachate”.*

- 7.8. Section 8.3 of the appropriate measures (chemical waste) covers BAT conclusion 35 it describes the appropriate measures for water use.

#### Chemical waste: appropriate measures for permitted facilities (November 2020)

- 7.9. A comparison of the relevant appropriate measure requirements with the proposed procedures for water usage will now be assessed.

2. *Measures you must take include:*

- *Implementing a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances)*



- *Optimising the use of wash water (for example, dry cleaning instead of hosing down and using trigger controls on all washing equipment)*
- *Recirculating and reusing water streams within the plant or facility, if necessary, after treatment*
- *Reducing the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids), where relevant.*

7.10. The wash plant for hazardous waste is a closed loop system which recirculates the water after going through treatment.

### **Energy efficiency**

#### **BAT conclusions**

7.11. BAT conclusion 23 (European Commission - establishing BAT conclusions for waste treatment) states:

*“In order to use energy efficiently, BAT is to use both of the techniques given below*

- *Energy efficiency plan*
- *Energy balance record”.*

7.12. Section 8.1 of the appropriate measures (chemical waste) covers BAT conclusion 23 it describes the appropriate measures for energy efficiency.

#### **Chemical waste: appropriate measures for permitted facilities (November 2020)**

7.13. A comparison of the relevant Appropriate Measures requirements with the proposed procedures for process efficiency will now be assessed.

1. *You must create and implement an energy efficiency plan at your facility. This must:*

- *Define and calculate the specific energy consumption of the activity (or activities) you do and waste stream(s) you treat*
- *Set annual key performance indicators – for example, specific energy consumption (expressed in kWh/tonne of waste processed)*
- *Plan periodic improvement targets and related actions*

7.14. The EMS will contain an energy efficiency plan. If new plant or equipment are used on Site, the specific energy consumption of the activity will be obtained and added to the energy efficiency plan.

2. *You must regularly review and update your energy efficiency plan as part of your facility’s management system.*

7.15. The plan will be reviewed annually with the EMS review to evaluate targets and performance indicators.

3. *You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment process.*

7.16. The EMS will contain an energy balance record for the facility providing a breakdown of all energy consumption.

4. *You must regularly review and update your energy balance record as part of your facility’s management system, alongside the energy efficiency plan.*

7.17. The energy balance record will be reviewed on an annual basis with the energy efficiency plan and other EMS documents.



## **Appendix 1**

### Waste Pre-Acceptance Procedure



## **Appendix 2**

### Waste Acceptance Procedure



## **Appendix 3**

### Waste Rejection Procedure



## **Appendix 4**

### Technical Summary



## **Appendix 5**

### Environmental Risk Assessment



## **Appendix 6**

### Dust Management Plan





## **Appendix 7**

### Noise Management Plan