



## Technical Summary

NRS Meriden Aggregates Limited

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



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1	Original version	James Bramhill	Tracey Westbury	15 July 2021
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Appendix 3            Hazardous Waste Containing Asbestos and Other Hazardous Properties



## 1. Introduction

1.1. This Technical Summary has been produced by Westbury Environmental Limited on behalf of NRS Meriden Aggregates Limited (Ltd) (the Operator) at Cornets End Quarry, Cornets End Lane, Cornets End, Meriden, Solihull, CV7 7LH (the Site).

1.2. This Technical Summary has been produced to support an application to vary the Environmental Permit Ref. EPR/HB3802HF to include treatment of hazardous waste types and additional treatment activities of non-hazardous waste on Site.

Proposed hazardous waste treatment activities include:

- Handpicking.
- Screening.
- Washing
- Storage
- Transfer

1.3. The application additionally proposes to add washing to the non-hazardous waste activities already carried out on Site under the Permit Ref. EPR/HB3802HF.

1.4. This summary provides a detailed description of the proposed waste activities including aspects on the waste acceptance, storage, and treatment of hazardous waste.

1.5. The treatment of non-hazardous waste is carried out separately under this permit. Waste from the hazardous waste treatment facility, that is evidenced as non-hazardous, will be re-classified and sent for further recycling as non-hazardous waste.

1.6. Waste will be accepted, stored, and treated in accordance with:

- 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).
- Sector Guidance Note 5.06: Guidance for the Recovery & Disposal of Hazardous and Non-Hazardous Waste, 2013 (SGN 5.06).
- Chemical waste: appropriate measures for permitted facilities, November 2020 (Appropriate Measures).
- CAR-SOIL Control of Asbestos Regulations 2012 - Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials.
- Guidance on the Classification and Assessment of Waste. Technical Guidance WM3.
- Chemical Waste: Appropriate Measures for Permitted Facilities, 18 November 2020.

1.7. Activities carried out under the Environmental Permit will be controlled by procedures within the written Environmental Management System (EMS).

1.8. A detailed assessment of the proposed operating techniques with consideration of Best Available Treatment (BAT) has been produced, see Environmental Permit Variation Application, Appendix 13 BAT Assessment Report for Hazardous Waste Treatment Operations.



## 2. Waste Acceptance

- 2.1. Strict waste acceptance procedures will be implemented on Site to ensure that only permitted waste types are accepted and tipped within the appropriate reception areas. The waste acceptance procedure includes information with regard to the pre-acceptance, acceptance, and classification of waste, see Environmental Permit Variation Application Report, Appendix 8 Waste Acceptance Procedure and Appendix 9 Waste Pre-acceptance Procedure.
- 2.2. Hazardous waste with the following hazardous properties will not be accepted at the Site:
  - HP1 Explosive Waste
  - HP9 Infectious Waste
  - HP12 Waste which will release acute toxic gas
  - HP15 Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste.
- 2.3. Hazardous waste, that has been classified and for which the hazardous properties are known, will be accepted onto the Site. Hazardous waste accepted will typically contain a mixture of contaminating substances including heavy metals and hydrocarbons.
- 2.4. Wastes from different source sites will be kept separate to ensure that waste with differing hazardous properties are not mixed.
- 2.5. Hazardous waste, that has been assumed to be hazardous (hazardous properties are unknown – no assessment has been carried out) will be accepted on to the Site and stored separately. This waste will be sampled, tested and a hazardous waste assessment carried out to identify the contaminating substances and hazardous properties present.
- 2.6. Due to the Regulatory Position Statement regarding Utility Waste this waste is anticipated that the un-assessed waste will largely include waste coded as 17 09 03\*, other construction and demolition wastes (including mixed wastes) containing hazardous substances.
- 2.7. On Site testing will be undertaken when unassessed waste arrives at the Site. Rapid testing will be undertaken in house in order to determine if the waste has a total petroleum hydrocarbon (TPH) concentration >1000mg/kg.
- 2.8. If the unassessed waste has >1000mg/kg of TPH, it is confirmed that the waste is most likely to be classed as hazardous and will be stored in the dedicated hazardous waste storage area awaiting screening.
- 2.9. If the waste has <1000mg/kg TPH then further analysis will be carried out in order to determine the presence of other potential contaminants.
- 2.10. The results of this testing will be used to classify the waste in accordance with WM3. Wastes classified as non-hazardous will be sent to the non-hazardous storage area. Waste classified as hazardous will be stored in the hazardous storage area of the Site.
- 2.11. The Site will accept waste that is classified as hazardous due to the presence of asbestos (ACM). This waste could contain asbestos either in the form of identifiable bonded asbestos pieces, fibrous asbestos, or both. There may also be other contaminating substances that cause the waste to have other hazardous properties. The treatment carried out on wastes accepted on to the Site will be dependent upon the contaminating substances and the hazardous properties. It will be the responsibility of the Site Manager to determine the appropriate treatment route for wastes.
- 2.12. Waste that is not acceptable on Site will be rejected in accordance with the Waste Rejection Procedure which is included within the EMS for the Site.
- 2.13. Records will be kept in association with the Waste Acceptance and Rejection Procedures



### 3. Waste Storage

- 3.1. The Waste Storage & Handling Procedure in the EMS contains information on the storage of waste on this Site.
- 3.2. Hazardous and non-hazardous waste will be stored separately.
- 3.3. Hazardous waste that has originated from different source sites will be stored separately to ensure that wastes with differing hazardous properties are not mixed.
- 3.4. Hazardous waste storage areas will have impermeable concrete surfacing with sealed drainage. Non-hazardous waste will be stored either on impermeable concrete surfacing with sealed drainage or on hardstanding.
- 3.5. The Site layout will allow the identification of wastes that are destined for a particular treatment. Storage areas/bays will be dedicated to treatment types, for example the Site will have a dedicated area for hazardous wastes that are destined for washing.
- 3.6. Separate stockpiles and waste stored within bays will ensure that cross contamination does not occur.
- 3.7. In the unlikely event that non-hazardous waste becomes contaminated with hazardous waste, the entire batch will be considered hazardous and will be treated as such.
- 3.8. A Waste Storage Plan is included in the Waste Storage and Handling Procedure. The plan includes details on the storage of wastes on the Site.
- 3.9. The permit variation seeks to allow up to 80,000 tonnes of waste (hazardous and non-hazardous) to be stored on Site at any one time.
- 3.10. Incoming waste contaminated with bonded asbestos (and which contains <0.1% asbestos fibres) will be handpicked to remove the bonded asbestos pieces. This treatment process gives rise to the need to store asbestos that has been removed from the waste. This asbestos shall be double bagged and kept within clearly identified, secure and lockable containers. This asbestos will be removed from the site and sent to a suitable licensed facility.
- 3.11. Waste contaminated with asbestos fibres will be covered to avoid the release of fibres.



## 4. Waste Transfer

- 4.1. The Site will transfer wastes off Site without treatment should there be no feasible treatment process. It is anticipated that this will include wastes that are contaminated with fibrous asbestos, and which has been evidenced as being hazardous.
- 4.2. It is not anticipated that a significant amount of waste will be transferred from the Site since the Operator intends to only accept waste that can be treated or that which requires further investigation to determine the hazardous properties present.



## 5. Waste Treatment

- 5.1. Hazardous and non-hazardous waste are treated separately on the Site.
- 5.2. Non-hazardous waste will undergo the following treatment activities:
  - Handpicking
  - Screening (wet and dry)
  - Washing
  - Crushing
- 5.3. Hazardous waste will undergo the following treatment activities:
  - Handpicking.
  - Screening (wet and dry)
  - Washing
- 5.4. Hazardous waste treatment will be undertaken on Site in accordance with the process flow diagrams:
  - Appendix 1 Hazardous Waste Treatment Process Flow
    - This process flow diagram provides an overview of the waste treatment activities carried out on the Site with regard to both hazardous and non-hazardous waste.
  - Appendix 2 Hazardous Waste Containing Asbestos Process Flow
    - This process flow diagram provides more details regarding the different forms of asbestos and how these are managed in wastes that are only hazardous due to the presence of the asbestos.
  - Appendix 3 Hazardous Waste Containing Asbestos and Other Hazardous Properties Process Flow.
    - This process flow diagram provides more details regarding the treatment of wastes that contain different forms of asbestos and other hazardous properties.
- 5.5. The following descriptions should be read in conjunction with the above-mentioned process flow diagrams.
- 5.6. The purpose of all waste treatment activities undertaken at the Site is to separate the waste fractions and remove contaminants.

### Screening of Hazardous Waste

- 5.7. Waste that is screened, either as a dry or wet process (washing), produces a number of fractions of waste, according to particle size:
  - It is anticipated that the larger fraction(s) of waste will, when sampled, tested, and assessed, be classified as non-hazardous waste.
  - It is anticipated that the finer fraction(s) of the waste will, when sampled, tested, and assessed, be classified as hazardous waste.
  - Therefore, this screening process will reduce the volume of hazardous waste.
- 5.8. The purpose of screening the hazardous waste is to remove and separate the hazardous components of the waste.
- 5.9. Wet screening will take place within the wash plant. Water is recirculated through the wash plant and will undergo water treatment to remove contaminants.
- 5.10. Water in the wash plant is treated by adding flocculants to the contaminated water which is then put through a filter press to remove any physical contaminated elements of the water. This will produce a filter cake residue which will be sent to a suitably licensed facility.





- 5.11. The wash plant will also remove items of contravening wastes such as metal, plastic, and wood.
- 5.12. Any fraction of waste from the screening process that has been classified as hazardous and is not suitable for further treatment on Site will be sent off Site as hazardous waste.
- 5.13. Any fraction of waste from the screening process that is classified as hazardous and is suitable for chemical treatment on Site will be treated in accordance with a treatment plan for that waste.
- 5.14. Any fraction of waste from the screening process that is classified as non-hazardous will be treated on Site along with other imported non-hazardous wastes. Wastes to be used to produce WRAP compliant recycled aggregates will be re-coded at this stage.
- 5.15. Wastes imported on to the Site or that have been produced from the screening of hazardous waste will be assessed to determine the suitability for further chemical treatment including the addition of stabilising compounds such as lime.
- 5.16. Waste that has undergone treatment and continues to have hazardous properties (classified as hazardous) will be stored in the hazardous waste storage area to be sent off-site as hazardous waste to a suitably licensed facility.
- 5.17. Waste that has undergone treatment and has no hazardous properties will be sent to the non-hazardous waste storage area for recycling, or off-site for recovery.
- 5.18. All fractions of waste produced from the screening process will be sampled, tested, and assessed in accordance with WM3 to classify the separate waste fractions. Testing frequency will consist of two tests per 20 tonne loads, depending on the information provided in the site investigation report.
- 5.19. The purpose of the screening process is to separate the fractions of the waste that is non-hazardous from the fraction that contains substances causing hazardous properties. This reduces the volume of hazardous waste which will allow for the waste to be reclassified as non-hazardous.

### **Hazardous Waste Containing Asbestos**

- 5.20. The Site will accept waste that is contaminated with asbestos. This waste could contain identifiable pieces of bonded asbestos, asbestos fibres, or both. The form that the asbestos is present in will determine how it is managed/treated.
- 5.21. There are six potential types of asbestos containing waste that could be accepted:

#### **Hazardous waste containing identifiable pieces of bonded asbestos only**

- 5.22. Hazardous waste which contains identifiable pieces of bonded asbestos only will be subject to handpicking to remove those pieces. Asbestos that has been removed from the waste shall be double bagged and kept within clearly identified, segregated and secure lockable containers. The treated waste will be checked and then stored in the non-hazardous waste storage area for non-hazardous treatment.

#### **Hazardous waste containing asbestos fibres only**

- 5.23. Hazardous waste which contains asbestos fibres only will be subdivided into smaller batches. These individual batches will then be tested for the presence of fibres.
- 5.24. Batches containing a concentration of >0.1% asbestos fibres will not have treatment take place and will be sent off Site as hazardous waste.
- 5.25. Batches containing concentrations of <0.1%, will be stored in the non-hazardous waste storage area for non-hazardous waste treatment. No treatment of this waste will take place.

**Hazardous waste which contains both identifiable pieces of bonded asbestos as well as fibrous asbestos**

- 5.26. Hazardous waste which contains both identifiable pieces of bonded asbestos as well as asbestos fibres will be subdivided into smaller batches and tested for the presence of asbestos fibres.
- 5.27. Batches which contain asbestos fibres at a concentration  $>0.1\%$  will be sent off Site as hazardous waste.
- 5.28. Batches which contain asbestos fibres at a concentration  $<0.1\%$  will be sent for further treatment by handpicking to remove the asbestos pieces.
- 5.29. Batches will be sampled after it has been received to test for the concentration of asbestos fibres. If the results of this test indicate the presence of asbestos fibres  $>0.1\%$  after sampling, the waste will be sent off site as hazardous waste.

**Hazardous waste which contains identifiable pieces of bonded asbestos and other hazardous contaminants**

- 5.30. Hazardous waste containing identifiable bonded asbestos as well as other contaminants will first be handpicked to remove all asbestos pieces. Asbestos removed from the waste shall be double bagged and kept within clearly identified, segregated and secure lockable containers.
- 5.31. The waste will then be transported to the hazardous waste treatment area of the Site in order to undergo physico-chemical as described above.

**Hazardous waste which contains asbestos fibres and is also contaminated with other hazardous contaminants**

- 5.32. Hazardous waste which contains asbestos fibres and other hazardous contaminants will be subdivided into smaller batches. These individual batches will then be tested for the presence of fibres.
- 5.33. Batches which contain asbestos fibres at a concentration  $>0.1\%$  will be sent off Site as hazardous waste. Batches containing concentrations of  $<0.1\%$  will be transported to the hazardous waste treatment area of the Site in order to undergo physico-chemical treatment as described above. The waste will then be classified in accordance with WM3 and stored in the non-hazardous waste storage area.

**Hazardous waste which contains identifiable pieces of bonded asbestos, asbestos fibres, and other hazardous contaminants**

- 5.34. Hazardous waste which contains identifiable pieces of bonded asbestos, asbestos fibres and other hazardous contaminants will be subdivided into smaller batches and tested for the presence of asbestos fibres.
- 5.35. Batches which contain asbestos fibres at a concentration  $>0.1\%$  will be sent off Site as hazardous waste.
- 5.36. Batches which contain asbestos fibres at a concentration  $<0.1\%$  will be sent for further treatment by handpicking to remove the asbestos pieces and then will be subject to further treatment depending on the contaminants present.

**Non-Hazardous Waste Treatment**

- 5.37. Non-hazardous waste is already accepted on the Site under the Permit Ref. EPR/HB3802HF.
- 5.38. Non-hazardous waste arrives on Site in vehicles which are directed to the waste reception area by the Site manager. At the waste reception area, the load will be visually inspected to ensure that it is consistent with the accompanying documentation (Waste Transfer Note).
- 5.39. Non-hazardous waste will undergo crushing and screening (including the proposed washing) to produce recycled aggregates. Fines (typically soils) resulting from this process will be sent off Site as a waste material.



- 5.40. The purpose of the proposed washing treatment of non-hazardous waste is to separate the waste into further fractions to produce recycled aggregates.



## 6. Surface Water Management

- 6.1. All surface water run off from the waste storage and treatment areas will be captured by the drainage system and directed towards holding tanks via interceptors. There will be no mixing of run off from hazardous waste treatment and non-hazardous waste treatment areas.
- 6.2. Surface water from the non-hazardous waste area will be tested prior to discharge into the lagoon and water will only be discharged from the lagoon if the results from testing pass the requirements of the discharge consent. If not, this will be tankered away from the Site to a suitable disposal facility.
- 6.3. No surface water from the hazardous waste activities will be discharged into the lagoon.
- 6.4. Surface water collected from the non-hazardous storage and treatment area will be reused on Site as dust suppression, used in the washing process or discharged into the lagoon.



## **Appendix 1**

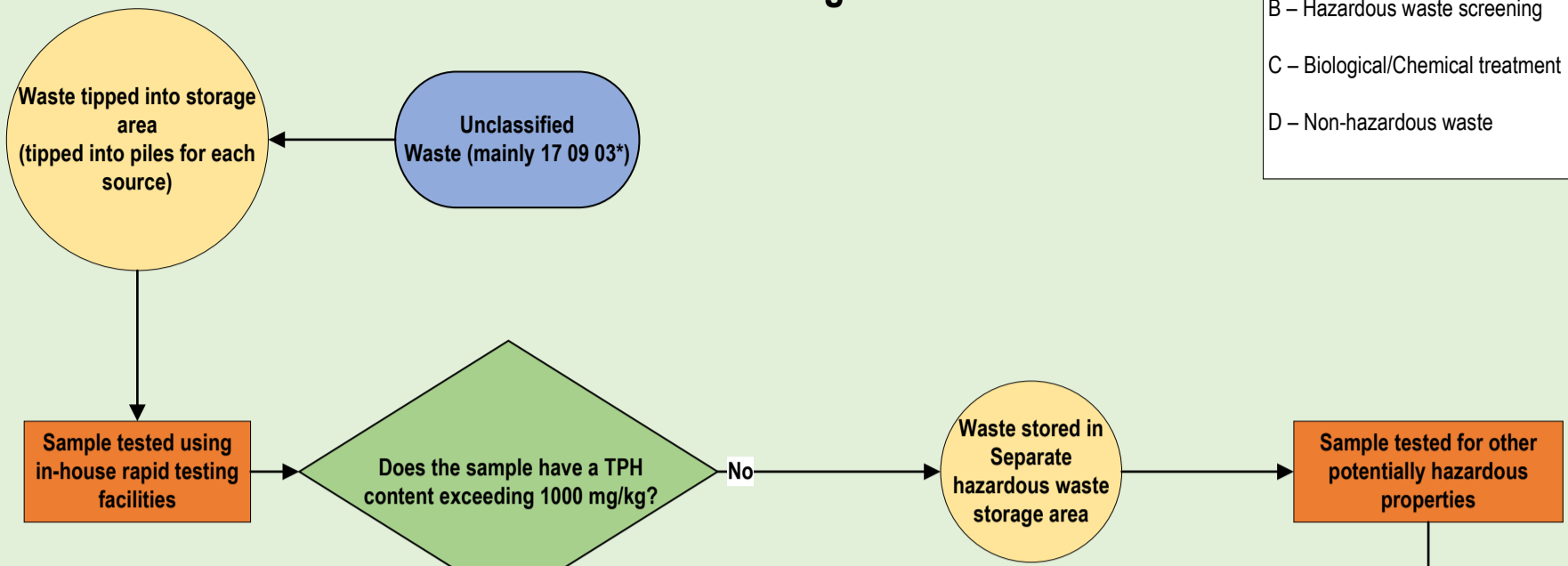
### Hazardous Waste Treatment Process Flow Diagram

# Hazardous Waste Treatment Process Flow Diagram

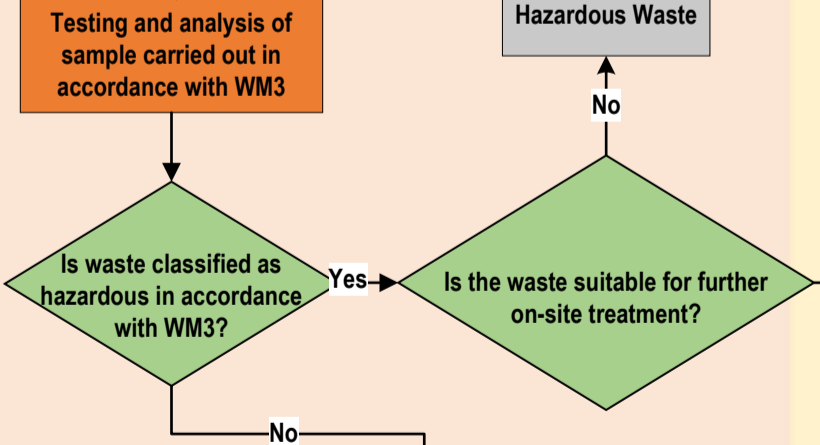
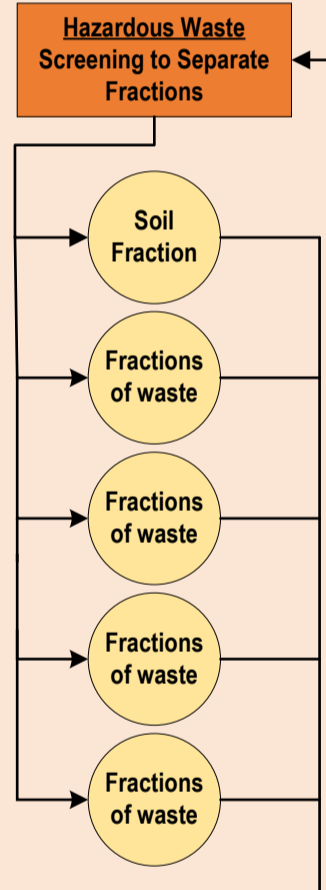
**Colour Legend**

- A – Acceptance of unclassified waste
- B – Hazardous waste screening
- C – Biological/Chemical treatment
- D – Non-hazardous waste

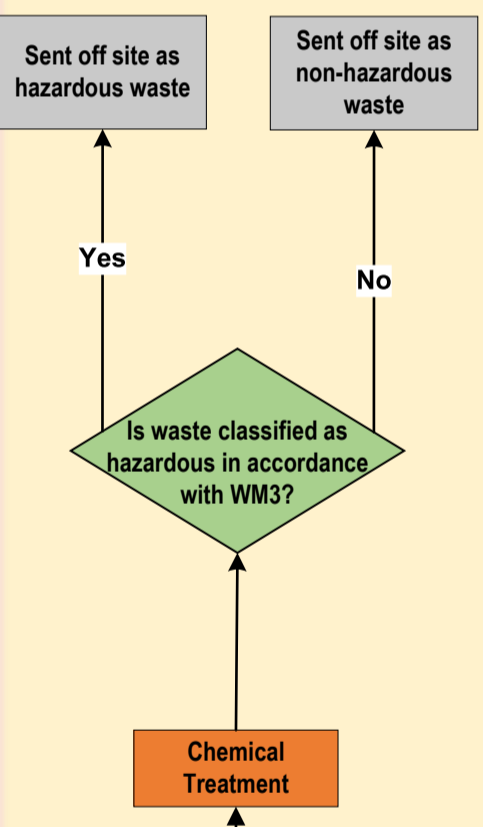
**A**



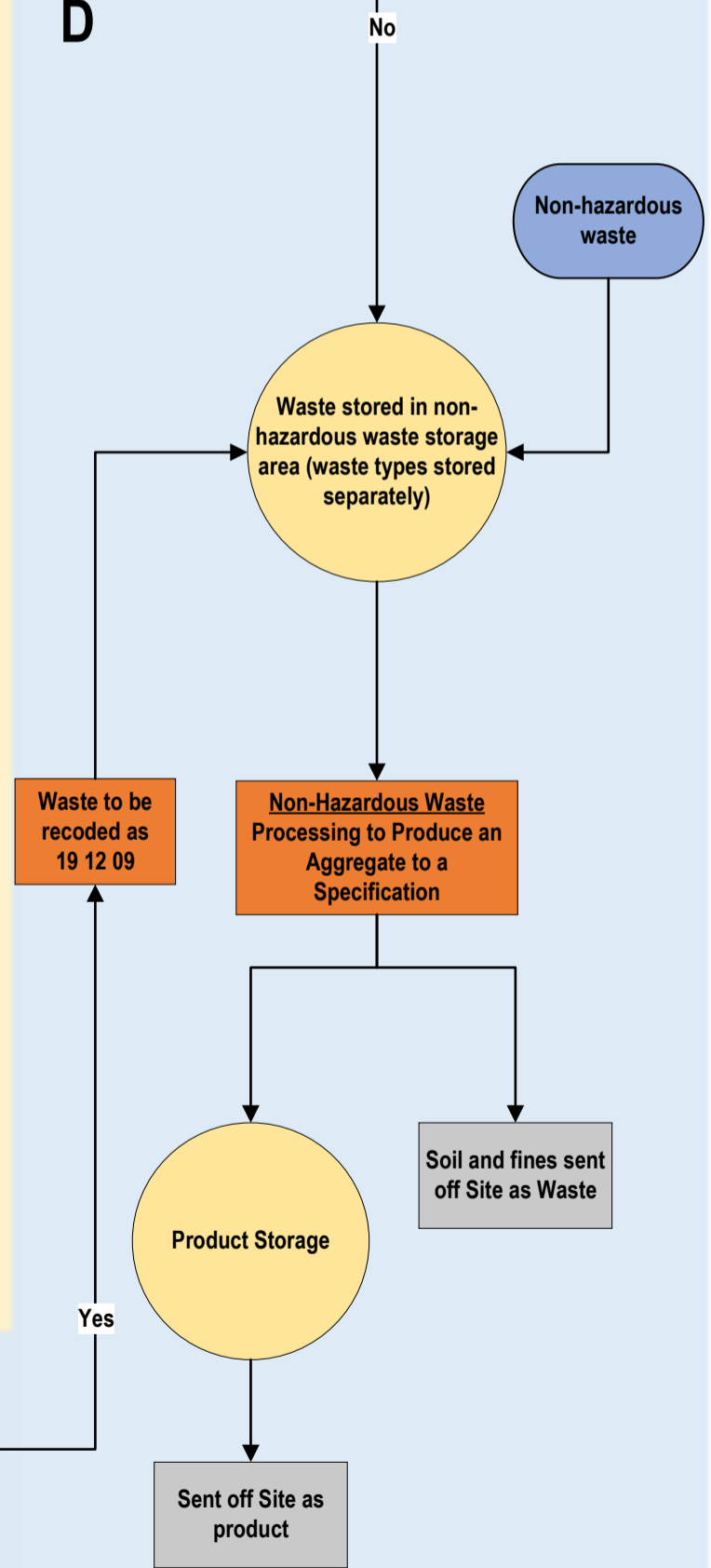
**B**



**C**



**D**



**Key**

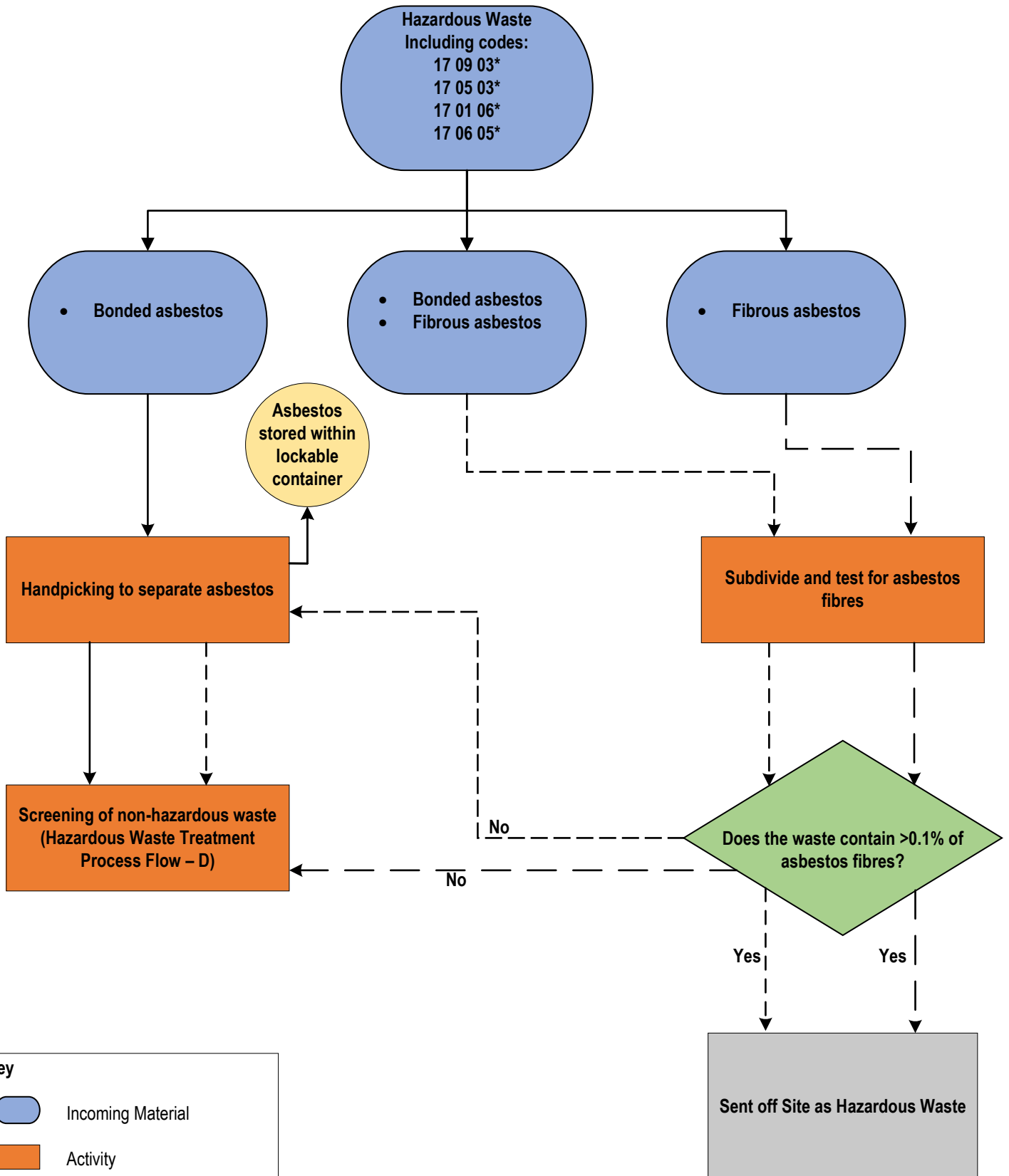
- Incoming Material
- Activity
- Storage of material
- Decision
- Outgoing Material








## **Appendix 2**

### Hazardous Waste Containing Asbestos Only

# Hazardous Waste Containing Asbestos



**Key**

-  Incoming Material
-  Activity
-  Storage of material
-  Decision
-  Outgoing Material

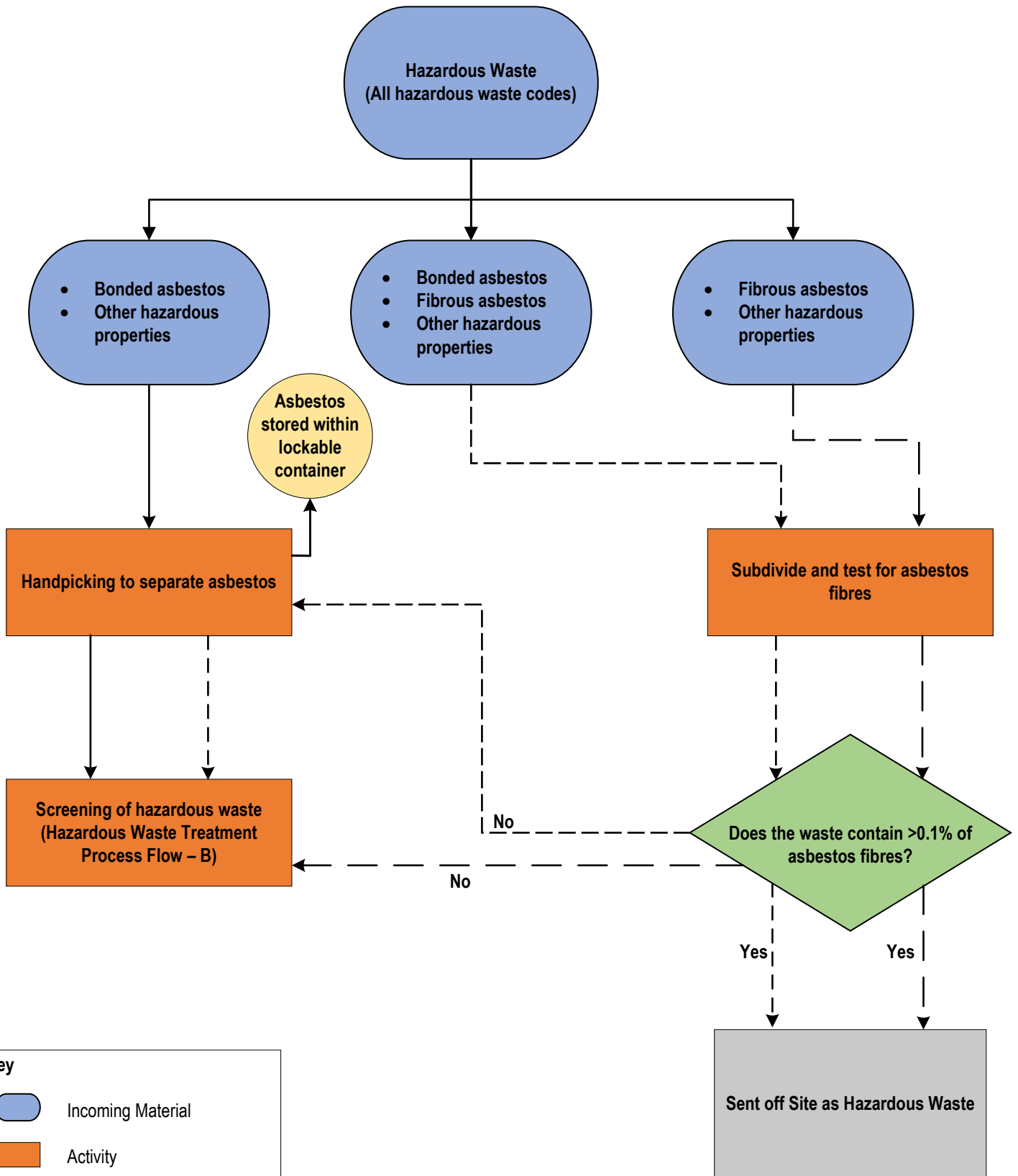




### **Appendix 3**

#### Hazardous Waste Containing Asbestos and Other Hazardous Properties

# Hazardous Waste Containing Asbestos and Other Hazardous Properties



**Key**

- Incoming Material
- Activity
- Storage of material
- Decision
- Outgoing Material