Environmental Management System

John Jones Civil Engineering & Groundworks Ltd

Cwrtgwenddwr Wood Recycling Facility

Cwrtgwenddwr Wood Recycling Facility,
Cwrtgwenddwr Wood,
A470,
Builth Wells,
LD2 3YR

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Quality Control

Revision No.	Date Revised	Description of changes	Authored By	Sign Off	Approved By	Sign Off
1.0	04/21	Original Draft	Kasia Haywood		Luke Bridges	
2.0	13/12/22	Amendments based on permit variation	Kasia Haywood		Luke Bridges	
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4.0	17/07/23	Amendments based on NRW request	Kasia Haywood		Luke Bridges	

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1. Introduction

1.1 General

1.1.1 This document comprising an Environmental Management System (EMS) has been written for 'The Operator' who will undertake the physical treatment of non-hazardous waste in accordance with a bespoke environmental permit (permit number: EPR/CB3396FF). The permit is referenced in Appendix A.

1.1.2 This document has been prepared by MTS Environmental Ltd on behalf of the Operator: John Jones Civil Engineering & Groundworks Ltd, Oak Villa, Erwood, Builth Wells, Powys, LD2 3SJ. This forms the EMS for their Cwrtgwenddwr Wood Recycling Facility located at Cwrtgwenddwr Wood, A470, Builth Wells, LD2 3YR.

1.1.3 Condition 1.1.1 of the permit requires that the Operator manages and operates the activity:

a) in accordance with a written Management System that identifies and minimises risks of pollution including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention as a result of complaints;
b) and using sufficient competent persons and resources.

1.1.4 Additionally, National Resources Wales (NRW) has published Environmental Permitting Regulations Guidance to help Operators understand the conditions or rules of the permit. It describes the standards and measures that must be used to control the most common risks of pollution from the activity. The NRW stipulate that an Operator must have a written management system, run the activities according to it, and improve it if it is not compliant.[1] The Operator must read, understand and keep a copy of the following guidance notes with the Permit.

- Develop a management system and control and monitor emissions for your permit.[2]
- WRAP Quality Protocol (Appendix F)[3]

1.1.5 This EMS is therefore written in accordance with the most relevant NRW guidance as stated above and with reference to the NRW and EA guidance available on the gov.uk website.

[1] How to comply with your environmental permit, version 8, October 2014

[1] Control and monitor emissions for your environmental permit, (version 1), February 2016

[2] Develop a management system: environmental permits, (version 1), February 2016

[3] WRAP QUALITY PROTOCOL

1.2 Permits

1.2.1 The operator will work in accordance with its management systems and permit conditions where required and instructed. Under all other circumstances the Operator will work under the permits detailed in 1.3.

1.3 Environmental Permits

1.3.1 The permit (permit number: EPR/CB3396FF) authorises the Operator to operate, receive and process waste in accordance with the criteria outlined in the permit.

1.4 Part B Mobile Plant Permit

1.4.1 The operator will work in accordance with Part B mobile plant permit requirements, if applicable, for crushing and screening operations when utilising mobile plant for crushing activities.

2. Site Location

2.1 General

2.1.1 The site is located at Cwrtgwenddwr Wood, A470, Erwood, Llanfaredd, Powys, Wales, LD2 3YN as shown on the Site Location Plan in Appendix B. The approximate national grid reference for the site is SO 07128 45963.

Figure 1 – Site Location Plan

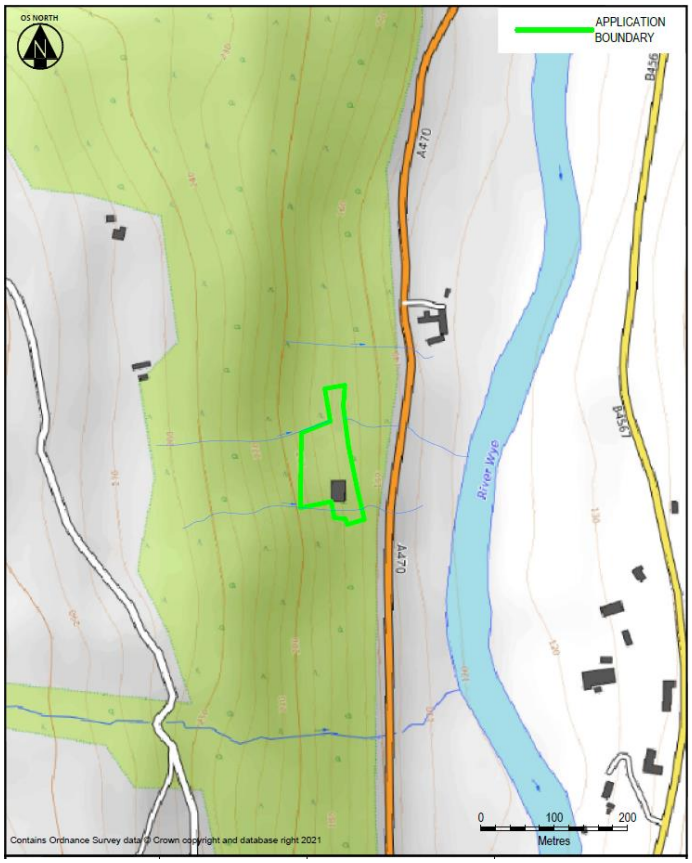
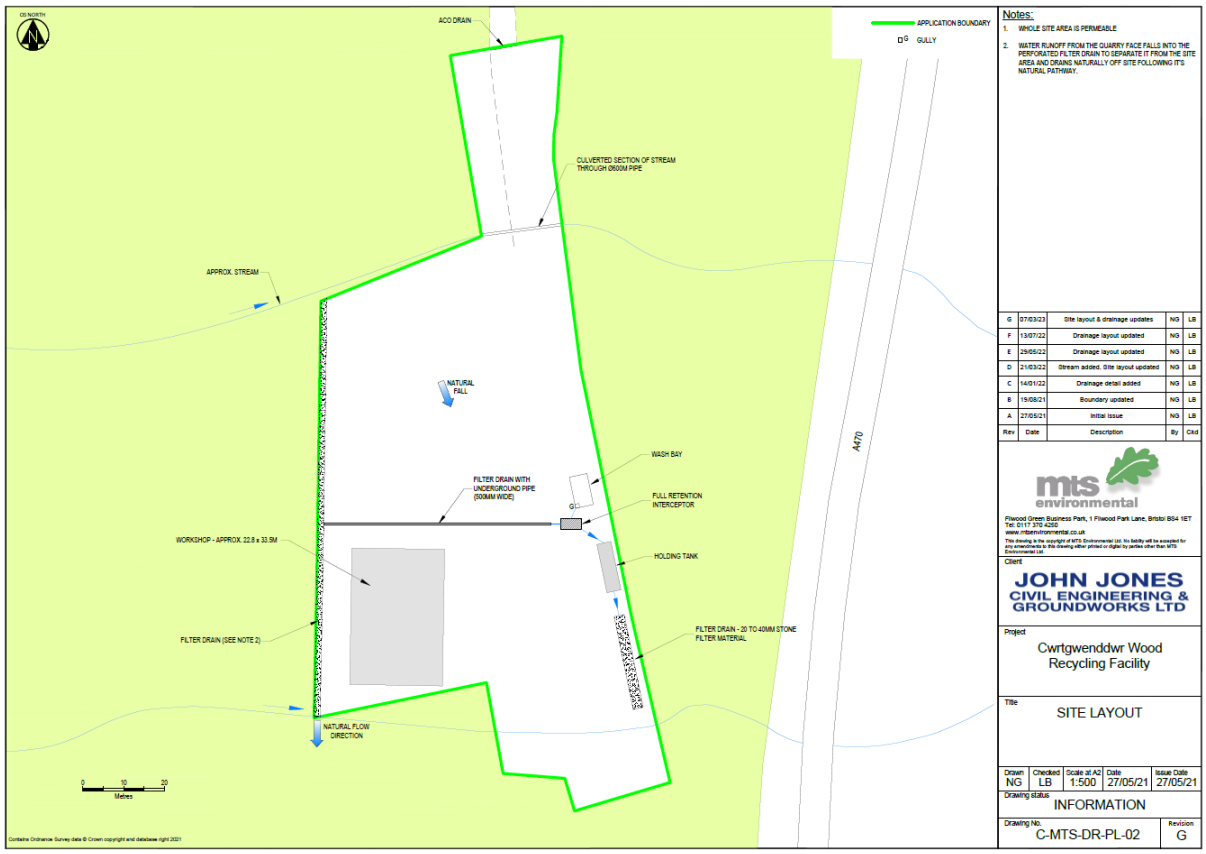


Figure 2 – Site Layout Plan



3. Management

3.1 General Management

3.1.1 The Operator shall manage and operate the activities in accordance with this EMS and the Permit, using sufficient competent persons and resources.

3.1.2 Operating Techniques refer to the technical standards cited within NRW guidance notes 'How to comply with your environmental permit'.[1]

3.1.3 Records demonstrating compliance with the permit shall be maintained in accordance with Section 6 of this document.

3.1.4 Any person having duties that are or may be affected by the matters set out in this EMS shall have convenient access to a copy of this document and the permit. These documents will be available electronically via the electronic systems and issued as hard copy in the depot.

3.2 Contingency Planning

3.2.1 The Operator will ensure that there are contingency plans in place to manage storage and treatment operations in the event of:

- Machinery / Plant breakdown

- Accidents that may result in pollution to the environment
- Delivery problems
- Adverse weather conditions
- Staff shortages

3.2.2 The Operator will ensure that there are:

- Repair/servicing contracts in place for all plant and machinery
- That repair /replacement can be achieved rapidly
- That there is sufficient storage provision in the case of interruptions to the operation
- Available staff to cover absence

3.2.3 In the event of an accident the Operator will follow the procedures in the Accident and Medical Incident Process.

3.2.4 In the event of an emergency, operations will be suspended where necessary to allow action to be taken safely. If necessary, all staff and others on site will be evacuated.

3.2.5 The Site Manager will be contacted in the event of any operational failure. The Operator will decide if operations are to be suspended before corrective action is taken. Any failures will be recorded in the site diary.

3.3 Sufficient Competent Persons

3.3.1 The Operator shall comply with the requirements of an approved competence scheme. The Technically Competent Manager/s (TCM) holds the Level 4 Certificate in Waste and Resource Management WAMITAB qualification. The TCM on site will be Miriam Jones, copies of the Certificates of Technical Competences (COTC) are included in Appendix C.

3.3.2 The site will be supervised by the TCM for at least 20% every week during the hours of operation. The TCM will make his presence known to the NCP, a Nominated Competent Person/s, when attending the site.

3.3.3 Where it is necessary to utilise NCP's, the Operator will ensure that the NCP's have a direct line and report to the TCM on a daily basis. The TCM will ensure that all NCP's are provided with copies of and be familiar with the following:

- The relevant permit rules
- The EMS
- The planning permission

3.3.4 During operational hours the site will be supervised by the NCP/s who will be suitably trained and conversant with the requirements of the EMS and the Permit to ensure that:

- All storage and treatment is carried out in accordance with the documents cited above
- They have sufficient authority to give or withdraw approval for treatment to go ahead at a particular time using specific risk assessments (e.g., with reference to weather conditions)
- They can be at site within 24hrs when treatment is occurring and 4 hours at any other time
- The person/s operating the equipment delivering the waste to the site have been briefed on where and how the waste must be stored prior to treatment
- They raise any issues with the TCM to prevent permit breaches
- They are the first responder to any incidents including dust, noise or odour issues if the TCM is unavailable
- They record any incidents or non-conformances to the TCM

3.3.5 An NCP can be a direct employee of the company, a contractor or consultant or the TCM. The Operator will ensure that the roles and responsibilities of the NCP are clearly stated.

3.3.6 The Operator will ensure that the NCP is sufficiently trained to understand the following aspects:

- Waste management legislation and its requirements
- Environmental risk assessment
- Environmental protection measures
- The Operator's management procedures.

3.3.7 The Operator will maintain training records to demonstrate competence. These will be made available for inspection by the regulator.

3.3.8 A copy of the management organisational structure is included in Appendix H. The Operator will ensure that the structure is regularly reviewed and kept updated to reflect any changes in management and staffing within the organisation, and/or as regards external contractors and consultants. Roles and responsibilities will be defined, and a written record will be maintained for inspection.

3.4 Staff Training

3.4.1 All new and existing staff will follow a specific training regime based on their role and responsibilities on site. This will improve the operation on site and reduce the likelihood of accidents and incidents which may harm the environment or site staff.

3.4.2 All staff will complete an orientation at the site and will maintain an up-to-date training record.

3.4.3 All staff are required to be aware of the controls outlined in this document and other relevant Management Plans.

3.4.4 All staff will receive appropriate health and safety and fire safety training relevant to their role.

3.4.5 Relevant staff will be trained in waste acceptance, identification of waste types and management of storage areas to ensure that operations comply with the requirements set out in the permit for the site.

3.4.6 Plant operators will have the necessary qualifications and will be trained to regularly check plant and machinery and identify any defects to prevent incidents that could have a negative impact on the environment or safety.

3.4.7 Contractors working on the site on a temporary basis will receive general site training.

3.5 Avoidance, Recovery and Disposal of Wastes Produced by the Activities

3.5.1 The operator shall take appropriate measures to ensure that:

(a) The waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) Any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) Where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

3.5.2 The Operator will ensure that each waste stream arising from the regulated facility will be characterised and quantified.

3.5.3 The Operator will use government guidance to decide how each waste stream is to be recovered or disposed of and be capable of justifying decisions that deviate from best practice.

3.5.4 Records will be maintained in order to explain why any waste may be subject to disposal. These will explain:

- Why recovery is technically and economically impossible; and
- Describe the measures planned to avoid or reduce any impact on the environment.

3.5.5 The Operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

4. Operations

4.1 Permitted Activities

4.1.1 The permit boundary is outlined in red on the Site Layout Plan in Appendix B. Any references to 'the site' made in this or other site documents refer to this area and associated infrastructure.

4.1.2 The activities on site are 'Treatment of waste to produce soil, soil substitutes and aggregate – up to 75,000 tonnes' (SR2010 No12 – Tier 3 Bespoke Permit).

4.1.3 The site allows non-hazardous wastes in the form of soils, stones and aggregates. Activities will include the storage and physical treatment of these materials mainly through crushing and screening. The waste will then be removed off site for recycling and reuse or disposal.

4.1.4 The operating hours of the site are as follows. Outside of these hours, onsite maintenance work, emergency deliveries and general office use will be the only activities on site.

07:00 to 18:00 Monday to Friday

07:00 to 13:00 on Saturday

Closed on Sundays and Bank/Public Holidays

4.1.5 The annual tonnage on site will not exceed 75,000 tonnes.

4.1.6 The Operator shall not undertake any waste management treatment activity unless it specifically complies with Table 1.

Table 1 - Waste Operating Techniques

Operating Activities	
Description of Activities	**Limits of Activities**
R3: Recycling/reclamation of organic substances which are not used as solvents. **R5**: Recycling/reclamation of other inorganic materials.	Treatment of wastes consisting only of sorting, separation, screening, crushing and blending of waste for recovery as a soil, soil substitute or aggregate. Secure storage of wastes listed in table 2 pending treatment. Storage of wastes listed in table 3 shall not exceed 10,000 tonnes in total at any one time.

R13: Storage of wastes pending any of the operations numbered R3 and R5.	All other wastes stored shall not exceed 40,000 tonnes in total at any one time. No more than 75,000 tonnes of waste shall be treated per year. Treatment of slags and ashes for disposal shall not exceed 50 tonnes per day, or if for a mix of recovery and disposal shall not exceed 75 tonnes per day.

4.2 Permitted Wastes

4.2.1 No wastes other than those with a European Waste Code (EWC) listed in Table 2 below shall be accepted onto site.

Table 2 – Waste codes and descriptions permitted on site.

Waste Code	Description
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays
02 02 02	Shellfish shells from which the soft tissue or flesh has been removed only
03 01 01	Waste bark and cork
03 03 01	Waste bark and wood
10 01 01	Bottom ash and slag only
10 01 02	Pulverised fuel ash only
10 01 05	Gypsum (solid) only
10 01 07	Gypsum (sludge) only
10 01 15	Bottom ash and slag only from co-incineration other than those mentioned in 10 01 14
10 11 12	Clean glass other than those mentioned in 10 11 11
10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)
10 13 14	Waste concrete only
15 01 07	Clean glass only
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06

17 02 02	Clean glass only
17 03 02	Road base and road planings (other than those containing coal tar) only
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 05 08	Track ballast other than those mentioned in 17 05 07
17 08 02	Gypsum only other than that mentioned in 17 08 01
19 05 03	Compost from source segregated biodegradable waste only
19 08 02	Washed sewage grit (waste from desanding) free from sewage contamination only
19 08 99	Stone filter media if free from sewage contamination only
19 09 02	Sludges from water clarification
19 12 05	Clean glass only
19 12 09	Minerals (for example sand, stones)
19 12 12	Treated bottom ash including IBA and slag other than that containing dangerous substances only
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	Sludges from soil remediation other than those mentioned in 19 13 13
20 01 02	Clean glass only
20 02 02	Soils and stones

4.3 Operating Techniques

4.3.1 The site is located outside groundwater Source Protection Zones 1 or 2 so all permitted wastes shall be stored and treated on hardstanding with a sustainable drainage system (SuDS).

4.3.2 The site benefits from a SuDS to manage surface water run off. The site only accepts inert wastes to be processed into non-waste products under the WRAP Quality Protocol. A fully impermeable surface is not required as the operations are very low risk and present no risk of contamination or negative environmental impacts.

4.3.3 Any non-conforming and/or quarantined wastes will be stored in a skip to prevent contaminated runoff.

4.3.4 All wastes will be treated following Best Available Techniques (BAT) in accordance with the BAT conclusions for waste treatment.[4] Appropriate measures for permitted facilities that manage non-hazardous and inert waste will also be complied with where possible.

4.3.5 Wastes listed in Table 3 below will not exceed 10,000 tonnes stored on site at any one time.

Table 3 – Waste codes limited to 10,000 tonnes storage on site

Waste Code	Description
03 01 01	waste bark and cork
03 03 01	waste bark and wood
10 01 01	bottom ash and slag only
10 01 05	gypsum (solid) only
10 01 07	gypsum (sludge) only
10 01 15	bottom ash and slag only from co-incineration other than those mentioned in 10 01 14
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 08 02	gypsum only other than that mentioned in 17 08 01
19 05 03	compost from source segregated biodegradable waste only
19 09 02	sludges from water clarification
19 12 12	treated bottom ash including IBA and slag other than that containing dangerous substances only
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03

4.4 Site layout and general principles of operation

4.4.1 Only waste that is suitable for direct use will be stored securely at the place where it will be used for treatment. The Operator will take all precautions to prevent the waste from escaping and ensure that members of the public are unable to gain access to the waste.

4.4.2 Solid waste will be stored and managed in accordance with the appropriate measures specified. These include:

- External Stockpiles
- Permanent stockpiles of waste stored on a secure and suitable surface
- Locate temporary stockpiles in areas of low permeability if possible
- Grade temporary stockpiles to promote rainwater run off rather than infiltration through the stockpile
- Manage all run–off or leachate, which may be produced by the waste, in the sustainable drainage system
- Be aware of slumping

[4] Best Available Techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council (August 2018)

- Consider location of sensitive receptors such as residential properties /workplaces in relation to stockpiles that might be affected by loss of amenity or dust and odour.

4.4.3 The Operator will follow Best Practice for storage activities as listed below:

- Not on land likely to become waterlogged, frozen or snow covered
- No odorous waste within 250m of residential or workplaces
- Not on land likely to flood
- Not on steeply sloping ground where there is risk of run off
- Not over land drains or land drained in the last 12 months.

4.4.4 The following plant and machinery will be operated in the Cwrtgwenddwr Wood Recycling Facility:

- Screeners
- Water Tankers
- Concrete Crushers
- 360 Excavator
- Wheeled Loading Shovels

4.4.5 Waste will only be stored at the site of treatment for a maximum of 12 months.

4.4.6 All potentially hazardous or non-conforming waste will be stored in a quarantine skip.

4.4.7 The treated material will be stored in appropriate stockpiles and areas to prevent mixing of waste streams.

4.5 Control of Mud and Debris

4.5.1 To control the release of mud and debris onto the public highway the following methods will be employed:

- Road sweeping, wheel wash station
- Containment, storage and treatment of waste is in designated areas within stockpiles and / or containers

4.5.2 In the event of any mud/debris found to be on the public highway resulting from lorry movements, from the site, the affected public areas outside the site shall be cleaned. Measures will be taken to clear any such sources from the highway as soon as is practicable.

4.5.3 Additionally, all loaded vehicles will be sheeted to avoid the escape of any waste.

4.5.4 A site-specific Dust Management Plan has been produced and the operations on site will be managed in accordance with this.

4.6 Potentially Polluting Leaks and Spillages of Waste

4.6.1 Adherence to the monitoring regime set out in Table 4, in conjunction with the site engineering for pollution prevention and the acceptance of permitted wastes only, will ensure that the risk of potentially polluting leaks and spillages of waste from the site is minimised.

4.6.2 Any minor spillages of liquid waste or oil shall be cleaned up immediately, using sand or proprietary absorbent to clean up liquids. In the unlikely event of a major spillage, immediate action shall be taken to prevent contamination entering surface drains, watercourses and un-surfaced ground. Temporary bunds using sand, soil or similar, or absorbents will be placed around the area affected until the spill is cleared up.

4.6.3 Once the spillage has been contained any materials that may be subject to contamination shall be cleared immediately and placed in sealed, labelled containers. These will be taken to a suitably permitted site for disposal. NRW shall be informed immediately, and the details of the event recorded in the site diary in accordance with the John Jones Management System.

4.6.4 Fuel and oil stored on site will be contained in compliance with oil storage regulations. The fuel tanks will be contained within a bund capable of containing 110% of the maximum volume of the tank. This bund will enclose all the pipework and infrastructure associated with the tank. The tank will be locked to prevent unauthorised access to prevent leaks and theft.

4.6.5 The site only permits non-hazardous waste but in the event that potentially contaminating wastes are on site, they will be stored in a quarantine skip.

4.6.6 All site surfaces will be inspected during daily checks for any litter or spillages. Any litter will be swept as necessary and contained for disposal to a suitably permitted site.

4.7 Fires on Site

4.7.1 Combustible wastes will not be accepted on site.

4.7.2 No wastes shall be burnt on site. The use of welding/cutting tools (i.e., with naked flame) must be sanctioned first by the Depot Supervisor/competent person and a hot works permit issued.

4.7.3 All site operatives shall be required to recognise signs of smouldering waste at the point of reception. Such wastes shall remain in the container and removed to a safe area. The Depot Supervisor shall be informed. In the event of smouldering waste being tipped, the operative shall make an immediate assessment of the situation and inform the Depot Supervisor. The fire shall be extinguished as soon as practicable.

4.7.4 Appropriate fire extinguishers shall be made available and easily accessible.

4.7.5 Fuel is stored securely on site as outlined in 4.6.4.

4.7.6 Regular fire drills will be conducted on site to ensure that staff follow the proper procedures.

4.8 Site Security

4.8.1 The site boundary is surrounded by a metal mesh fence and secure access gates.

4.8.2 24-hour CCTV is in operation on site.

4.8.3 In the event of a bomb scare, the site will be immediately evacuated, operations suspended, and the police contacted. The police will then take control of the site until the threat is removed. NRW will be informed of the event.

4.9 Recording and Reporting Procedures

4.9.1 Where site personnel have dealt with a fire successfully, it should be reported to the Fire Service as well as NRW. Records will be kept of all significant events (including fire, accidents, waste refusal) in the site diary. Information should include the nature and extent of the incident, the actions and remediation measures taken. The site diary must be in a form where it can be audited.

4.10 Waste Acceptance and Control Procedures

4.10.1 Waste shall only be accepted if:

- It is of a type listed in Table 2 above
- It conforms to the description in the documentation supplied by the producer and holder

4.10.2 The Operator will ensure that all wastes accepted at the site for storage and recycling are fully characterised and acceptable by implementing the following procedures;

- Visual inspection of incoming materials in accordance with the appropriate documentation
- Waste transfer note
- Chemical analyses

4.10.3 The Operator will ensure that all Duty of Care Waste Transfer Notes (WTN) include the following information and written legibly:

- Delivery date and time

- Origin of the waste
- Waste description including type, quantity and EWC code
- Container type
- Carriers' details
- Identity of the waste producer

4.10.4 The Operator will refer to the supporting information and WTN to identify and understand the beneficial and harmful properties of the waste to identify any potential problems that may arise from storage, transport and re-use.

4.10.5 The Operator will confirm the physical state; liquid, sludge or solid by reference to the definitions found within EA Guidance for waste acceptance at landfills. [5]

4.10.6 Upon arrival on site, all vehicle drivers must report to the site office for weighing and inspection.

4.10.7 All waste received at the site shall be visually inspected to confirm that the description and composition conform to the written description and the European Waste Code on the relevant Duty of Care Transfer Note and to the description as detailed in the permit, and any other accompanying documentation.

4.10.8 Once confirmed the load will be discharged to the appropriate storage area. The waste shall be discharged and visually checked for a second time to ensure that there are no non-permitted wastes within the load.

4.10.9 All wastes received shall be kept separate from, and shall not be covered by or mixed with, other wastes until they have been confirmed and recorded for acceptance at the site.

4.10.10 Records will be maintained in accordance with Section 6 of this EMS.

4.11 Waste Refusal

4.11.1 In the event that a vehicle load, upon inspection, is non-compliant with the Environmental Permit the following steps will be implemented:

- Refusal of the container/load will result in refused entry
- Enter the event in the site diary, including the relevant information contained on a WTN
- Contact waste producer to advise

4.11.2 Any items of non-permitted waste which are detected after acceptance at the site shall be placed immediately in the designated quarantine storage area, comprising a skip or similar

[5] Guidance for waste acceptance at landfills, Environment Agency

container and segregated from the other wastes. The details shall be entered into the site diary.

4.11.3 Quarantined waste shall be removed from site within 7 days. A record shall be kept of all rejected wastes in the site diary.

4.11.4 Waste will be refused if maximum storage capacity has been reached on site, no further waste will be accepted until other waste has been removed off site to an appropriately permitted or exempt site.

4.12 Waste Quantity Measurement Systems

4.12.1 Incoming waste shall be recorded in cubic metres/tonnes and measured on the basis of the capacity of the containers used for transport or weighbridge. This shall be recorded by adding load information onto the electronic system.

4.12.2 A summary of waste outputs and inputs onto site will be submitted to NRW using the standard Generic Operator Returns electronic spreadsheet every quarter.

4.13 Site Inspections

4.13.1 The site inspections shall be undertaken by the TCM or NCP in his/her absence. Table 4 represents the issues that may need to be covered and gives the suggested time intervals.

4.13.2 The suggested inspection criteria are included in Table 4.

Table 4 - Site Inspection Checklist

Issue	Frequency	Action
General site and road cleanliness (presence of mud/debris)	Daily	Sweep road, surfacing if mud/ debris present. Record Inspections /actions in diary.
Inspect tanks, containers, drums, drip trays and secondary containment for leaks.	Daily	Any leaks to be stopped and cleaned up, containers to be replaced/ repaired immediately. Record inspections/ defects, damage and repairs in diary.
Visual inspection of boundary fences for breaks / damage where applicable.	Daily	Any defects shall be made secure by temporary repair before the start of operations/end of working day and shall be repaired within 24 hours of the damage being detected. Record Inspections/ defects, damage and repairs in site diary.

Issue	Frequency	Action
Check mobile bowser	Daily	Any defects shall be repaired before the start of operations / end of the day within 24 hours of the damage being detected. Record Inspections/ defects, damage and repairs in Diary.
Visual monitoring for aerial emissions-monitor dust at random times throughout the day.	Daily	Check site boundaries for visual dust emissions at least twice daily. Record inspections / results / weather conditions / cause and actions in site diary.
General site cleanliness (presence of litter and dust deposits inside /outside site boundary)	Daily	Site walkover and inspection. Collection from inside and outside site (including boundary hedging) twice daily. Investigate the cause. Record Inspections/defects, damage and repairs in site diary.
Olfactory Monitoring for odour in accordance with the OMP	Daily	Olfactory testing and record keeping in accordance with the QMP.
Site Signage	Daily	Check that signs are in good condition and arrange to repair /replace if damaged. Record Inspections/defects, damage and repairs in site diary.
Pest infestation check. Check containers and stockpiles to monitor for vermin, scavengers and flies	Daily	Implement Pest Management Plan if presence of vermin, scavengers and /or flies are noted. Record daily inspections and results in site diary.
Ensure waste is stored in appropriate segregated containers/stockpiles or areas in accordance with Good Practice Guidance	Daily	Check quantities are in accordance with EMS and Permit. Segregate as and when necessary. Record actions in site diary.
Check condition of fixed facilities – drainage infrastructure, containers etc.	Weekly	Remove silt upon build up. Check and record levels within containers/tanks/interceptor. Take action to prevent spillage/ remove via vacuum tanker, etc. Record actions in site diary.
Inspection of plant	Weekly	Maintenance/repair/regular servicing. Record actions in diary and plant maintenance log sheets.
Building / roofing /surfacing (if applicable)	Monthly	Any defects affecting the integrity shall be repaired within one week.

4.13.3 Any necessary repairs will be made within 5 working days of discovery, unless agreed otherwise with NRW.

4.13.4 Any major defects which have the potential to cause a breach in permit if not repaired will be repaired by the end of the same working day. If this is not possible then contact with NRW will be made to agree alternative options.

4.14 Site Closure Plan

4.14.1 In the event that the Operator wishes to cease the permitted waste operations on the site, the Operator will contact NRW to inform them of the closure.

4.14.2 Any waste remaining on site will be inspected by the TCM, who will produce plans for its quick and safe removal off site.

4.14.3 All waste, plant and machinery will be removed from site.

4.14.4 A site investigation will be conducted to determine the quality of the ground condition on site following all operations.

4.14.5 The Operator will submit a surrender of the permit application to NRW for duly making.

4.15 Site Drainage

4.15.1 The site is surfaced in hardstanding and benefits from a SuDS to manage all site run-off. Run off from the site drains following the natural fall via a filter drain into a full retention interceptor, which run off from the wash bay also drains into. The full retention interceptor drains into a holding tank that subsequently drains into a filter drain consisting of 20-40mm stone filter material.

4.15.2 Clean rainwater run off from the quarry face at the western edge of the site drains naturally down into a perforated filter drain, this then drains naturally off site following its natural pathway.

4.15.3 There is an aco drain across the entrance to the site to catch any run off in that direction.

4.15.4 The sites programme of Planned Preventative Maintenance (PPM) will follow manufacturers guidelines with the interceptor being inspected weekly for silt build up and tanks daily for leaks (following the routine in Table 4). The interceptor will be cleaned out at least every six months, and more frequently if build up is seen on inspection.

4.15.5 The drainage system as a whole and its induvial parts will be inspected weekly, by appropriately trained staff, following the site housekeeping routine outlined in Table 4. Any actions required following inspection will be recorded in the site diary.

4.15.6 The system will be effective as the surface water will drain following the natural fall into the filter drains to be collected in the drainage system. Only non-hazardous and inert wastes are accepted on site so there is very little risk of contamination of surface water.

4.15.7 The emissions to surface and groundwater are managed through the full retention interceptor which will sufficiently clean up any contamination in the unlikely event that it will arise, before it then enters the ground through the filter drain.

4.15.8 The holding tank has a pen-stock valve which can be closed to prevent any emissions to surface and groundwater if required.

5. Pollution Control, Monitoring and Reporting

5.1 Pollution Risk Management

5.1.1 The operator will ensure that a site-specific risk assessment is used throughout all treatment activities.

5.1.2 The site benefits from natural drainage and secondary risk management provisions such as spill kits, staff training and emergency response procedures.

6. Emissions and Monitoring

6.1 Introduction – Emissions to air, land and water

6.1.1 The Permit does allow point source emissions to air or watercourses or land.

6.1.2 Emissions from waste to land during operations can lead to pollution of surface and groundwater, and the air. Waste storage and treatment operations can lead to the production of emissions of dust, aerosols, odour and noise.

6.1.3 NRW requires that the Operator take appropriate measures to control potential emissions to or from the waste operation. The following sections therefore set out the measures that will be taken to prevent or minimise the risk to potentially sensitive receptors.

6.1.4 All sensitive receptors to the site and their respective locations are shown on the sensitive receptor plan in Appendix C.

6.2 Monitoring and Control of Dust Emissions

6.2.1 The key sources for the generation of dust on site are as listed in Table 5 below:

- Dust raising from public, haul roads and operational surfaces through vehicle movements
- Dust raising from the mechanical loading/unloading of wastes, blending
- Dust raising from the treatment operation
- Dust raising from stockpiles

6.2.2 The Operator shall take all appropriate measures to reduce and prevent dust emissions generated by the site. Table 5 below sets out the measures that shall be undertaken to control and monitor the release of dust, fibres and particulates.

Table 5 - Measures to Control and Monitor Emissions of Dust

Appropriate Measures for Reducing Emissions of Dust	
▪ Undertake operations within suitable weather windows wherever possible ▪ All incoming loads to be tipped in such a way as to minimise dust generation. ▪ All loading /unloading activities to be undertaken carefully to prevent waste materials being dropped from a height. ▪ Manage loading operations from stockpiles to mixing plant as above. ▪ Keep stockpiles with the potential to give dust as small as possible ▪ Locate potentially dusty material in sheltered areas if possible and consider covering with a suitable material or cover ▪ No storage of waste outside designated containers or stockpile areas. ▪ Limit vehicle speeds during treatment to reduce dust raising ▪ Maintain records of all actions	
Monitoring of aerial emissions	
▪ Daily visual monitoring of aerial emissions at site boundaries shall be carried out by staff supervising all waste handling operations.	▪ TCM /NCP to monitor operations throughout day at the site boundary that is downwind of operations. ▪ Observations and weather conditions including wind direction will be recorded on the dust monitoring sheet. ▪ Complaints to be recorded in the Site Diary

6.2.3 The Operator will take account of the weather conditions and ensure that all waste operations are undertaken in accordance with this information.

6.2.4 The TCM will nominate a person, or persons to be responsible in the absence of the TCM to undertake and record daily random visual monitoring events. Additionally, all operational staff will be made aware of the importance of preventing dust emissions from leaving the boundary of the site which would breach the permit.

6.2.5 In the event of a complaint, the Operator will immediately investigate the source of the dust and whether it is originating from the site. Action will be taken to prevent any further emissions leaving the site. A Corrective Action Report will be completed describing the incident and should include details as specified above. A record will be made in the site diary.

6.2.6 A site-specific Dust Management Plan has been produced, outlining the mitigation measures in place at the site.

6.3 Monitoring and Control of Noise

6.3.1 Noise and vibration will be maintained at levels associated with normal civil engineering activities. Where the site-specific Environmental Risk Assessment identifies sensitive receptors in close proximity to the operation, the Operator will take all measures to minimise noise impacts to those receptors.

6.3.2 The Operator will ensure that all plant is maintained in accordance with the manufacturer's guidelines. Maintenance records will be maintained.

6.3.3 The proposed activities on site are unlikely to greatly increase the noise level in the surrounding industrial area.

6.4 Monitoring and Control of Litter

6.4.1 The risk of litter becoming a nuisance is considered to be very low because wastes will have been segregated and should not contain litter. However, the potential for litter nuisance will be further minimised with the implementation of the following provisions:

- Sheeting of all incoming loads
- All incoming loads to remain sheeted until ready to be tipped
- Daily inspection of the site boundaries at least once per day, corrective action to be recorded in the site diary
- Litter picking when required

6.4.2 On the detection of litter, the operator shall take action to review the waste management processes at the site and modify or cease handling the waste if necessary, in order to minimise the production of litter.

6.4.3 The incident, actions and results shall be recorded in the site diary.

6.5 Monitoring and Control of Pests (including Scavengers and Gulls)

6.5.1 The Operator will take appropriate measures to prevent and reduce nuisance from scavengers, vermin and files. These are listed below in Table 6.

6.5.2 An inspection of stored wastes for pest infestations shall be carried out at least at weekly intervals and more often if necessary, by the site supervisor and shall be recorded in the site diary.

6.5.3 On detection or notification of pest infestations, immediate action shall be taken to secure the attendance of a professional pest control contractor, to eliminate the pest infestation. The incident and remedial action shall be recorded in the site diary.

Table 6 - Measures to reduce nuisance from scavengers, vermin and flies

Appropriate Measures for Reducing Nuisance from Scavengers, Vermin and Flies	
▪ Reduce the potential for scavenging, attracting vermin and fly breeding in stockpiles by identifying waste likely to attract flies. ▪ Locate loading/ unloading areas, stockpiles as far from human receptors as is possible ▪ Keep machinery clean ▪ Conclude operations as quickly as possible	
Monitoring of aerial emissions	
▪ Daily visual monitoring of stockpiles by staff supervising waste handling operations.	▪ TCM /NCP to monitor waste types for infestations ▪ Observations and weather conditions including wind direction will be recorded on the site diary

6.6 Monitoring and Control of Mud and Debris

6.6.1 Vehicles will be inspected, both the vehicles and bodies, upon entry and exit of the site for exterior mud and debris. Any excess mud and debris will be removed, and vehicles will be washed down to ensure that no mud is carried out onto access roads.

6.6.2 Any mud or debris detected on the site roads will be reported to the site manager.

6.6.3 Any mud or debris detected on the local public highways due to operations on site will be cleared immediately by the Operator, manually using a brush or using s road sweeper if necessary.

6.7 Monitoring and Control of Odour

6.7.1 The waste accepted on site is not putrescible so odour should not cause any complications or breach of the permit on site.

6.7.2 On the detection of litter, the operator shall take action to review the waste management processes at the site and modify or cease handling the waste if necessary, in order to minimise the production of litter.

6.7.3 The incident, actions and results shall be recorded in the site diary.

6.7.4 Any putrescible waste, will be contained and sent to a suitably permitted site for disposal.

7. Site Records

7.1 Security and Availability of Records

7.1.1 All Duty of Care Transfer Notes will be kept for a minimum of 2 years.

7.1.2 Hazardous wastes accepted by the site, wastes rejected by the site and/or despatched from the site shall be kept in the site office for a minimum of 6 years. These will be available for inspection by an authorised person by accessing the electronic system.

7.2 Records of Waste Movements (Waste Returns)

7.2.1 Records of all waste movements shall be kept in accordance with the relevant condition in the permit. Additionally, a summary record of the waste types accepted and removed from the site shall be made on the NRW form every quarter. This information will be submitted to NRW within 1 month following the end of the quarter.

7.3 Records of off-site Environmental effects

7.3.1 Records of any off-site environmental effects including pollution incidents that caused or were alleged to have caused, harm or health effects will be retained.

7.4 Records of on-site Environmental effects

7.4.1 Records that relate to the condition of the land and groundwater will be retained. The initial state of the site is described within the Application Site Condition Report. This is a live document and will be maintained throughout the life of the site. Records will include details on:

- Design, construction, inspection, monitoring & maintenance
- Failure of pollution prevention control measures
- Spills and incidents
- Records of investigations and remedial actions
- Records of remedial action in response to non-conformances as noted by an NRW Officer

7.5 Site Diaries

7.5.1 A site diary will be kept secure within the site office and made available for inspection by NRW as and when required. The diary will contain the following information and be maintained in a form in which it can be audited:

- Start and finish of any construction works
- Maintenance
- Plant and machinery breakdowns
- Emergencies
- Problems with waste received and action taken
- Site inspections and consequent actions carried out by the operator
- TCM attendance - the date and the time on site and the time left site
- Dispatch of any records to the Environment Agency
- Severe weather conditions
- Any environmental problems and remedial actions taken
- Any complaints related to operational activities
- Records of site monitoring – odour /dust/litter/ pests /surface water
- Records of inspection of the drainage on site

7.5.2 All records shall be completed within 24 hours of the event.

Notes:

1. WHOLE SITE AREA IS PERMEABLE
2. WATER RUNOFF FROM THE QUARRY FACE FALLS INTO THE PERFORATED FILTER DRAIN TO SEPARATE IT FROM THE SITE AREA AND DRAINS NATURALLY OFF SITE FOLLOWING IT'S NATURAL PATHWAY.

Rev	Date	Description	By	Ckd
G	07/03/23	Site layout & drainage updates	NG	LB
F	13/07/22	Drainage layout updated	NG	LB
E	29/05/22	Drainage layout updated	NG	LB
D	21/03/22	Stream added. Site layout updated	NG	LB
C	14/01/22	Drainage detail added	NG	LB
B	19/08/21	Boundary updated	NG	LB
A	27/05/21	Initial issue	NG	LB

mts environmental
Filwood Green Business Park, 1 Filwood Park Lane, Bristol BS4 1ET
Tel: 0117 370 4250
www.mtsenvironmental.co.uk

Client

JOHN JONES CIVIL ENGINEERING & GROUNDWORKS LTD

Project

Cwrtgwenddwr Wood Recycling Facility

Title

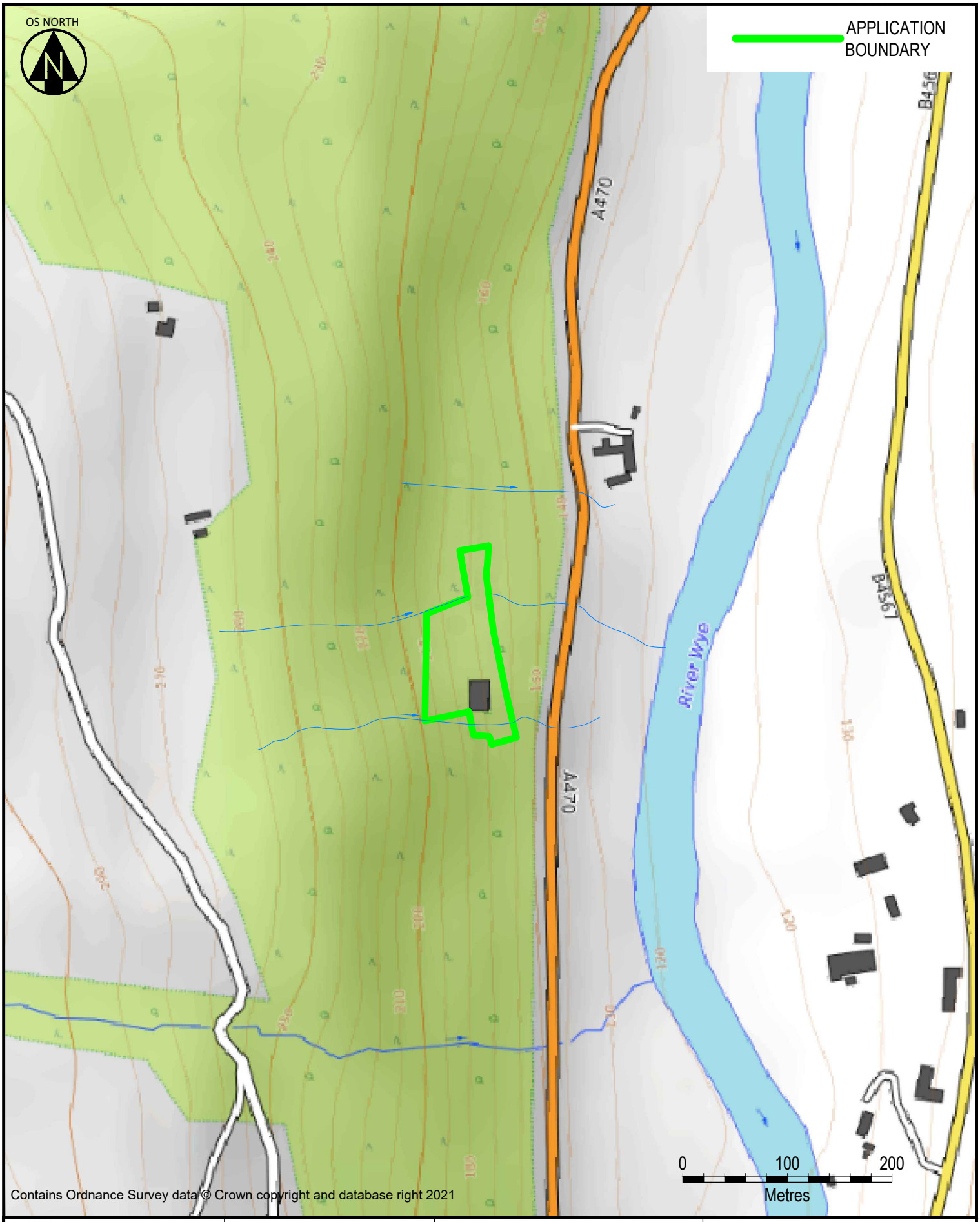
SITE LAYOUT

Drawn	Checked	Scale at A2	Date	Issue Date
NG	LB	1:500	27/05/21	27/05/21

Drawing status

INFORMATION

Drawing No.	Revision
C-MTS-DR-PL-02	G



Rev	Date	Description	By	Ckd
C	14/01/22	Boundary updated	NG	LB
B	19/08/21	Boundary updated	NG	LB
A	27/05/21	Initial issue	NG	LB

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Client
JOHN JONES CIVIL ENGINEERING & GROUNDWORKS LTD

Project
Cwrtgwenddwr Wood Recycling Facility

Title
SITE LOCATION PLAN

Drawn	Checked	Scale at A4	Date	Issue Date
NG	LB	1:5000	27/05/21	27/05/21

Drawing Status
INFORMATION

Drawing No.
C-MTS-DR-PL-01

Revision
C

OS NORTH

APPLICATION BOUNDARY

116 EXISTING SITE CONTOUR - 1m INTERVAL (mOD)

SITE ACCESS

APPROX. STREAM

WASTE PROCESSING AREA

WORKSHOP - APPROX. 22.8 x 33.5M

A470

River Wye

0 50
Metres

Notes:

DIGITAL TERRAIN/SURFACE MODELLING - EA LiDAR © ENVIRONMENT AGENCY.

Rev	Date	Description	By	Ckd
C	21/03/22	Site layout updated	NG	LB
B	19/08/21	Boundary updated	NG	LB
A	27/05/21	Initial issue	NG	LB

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Tel: 0117 370 4250
www.mtsenvironmental.co.uk

Client

JOHN JONES
CIVIL ENGINEERING & GROUNDWORKS LTD

Project

Cwrtgwenddwr Wood Recycling Facility

Title

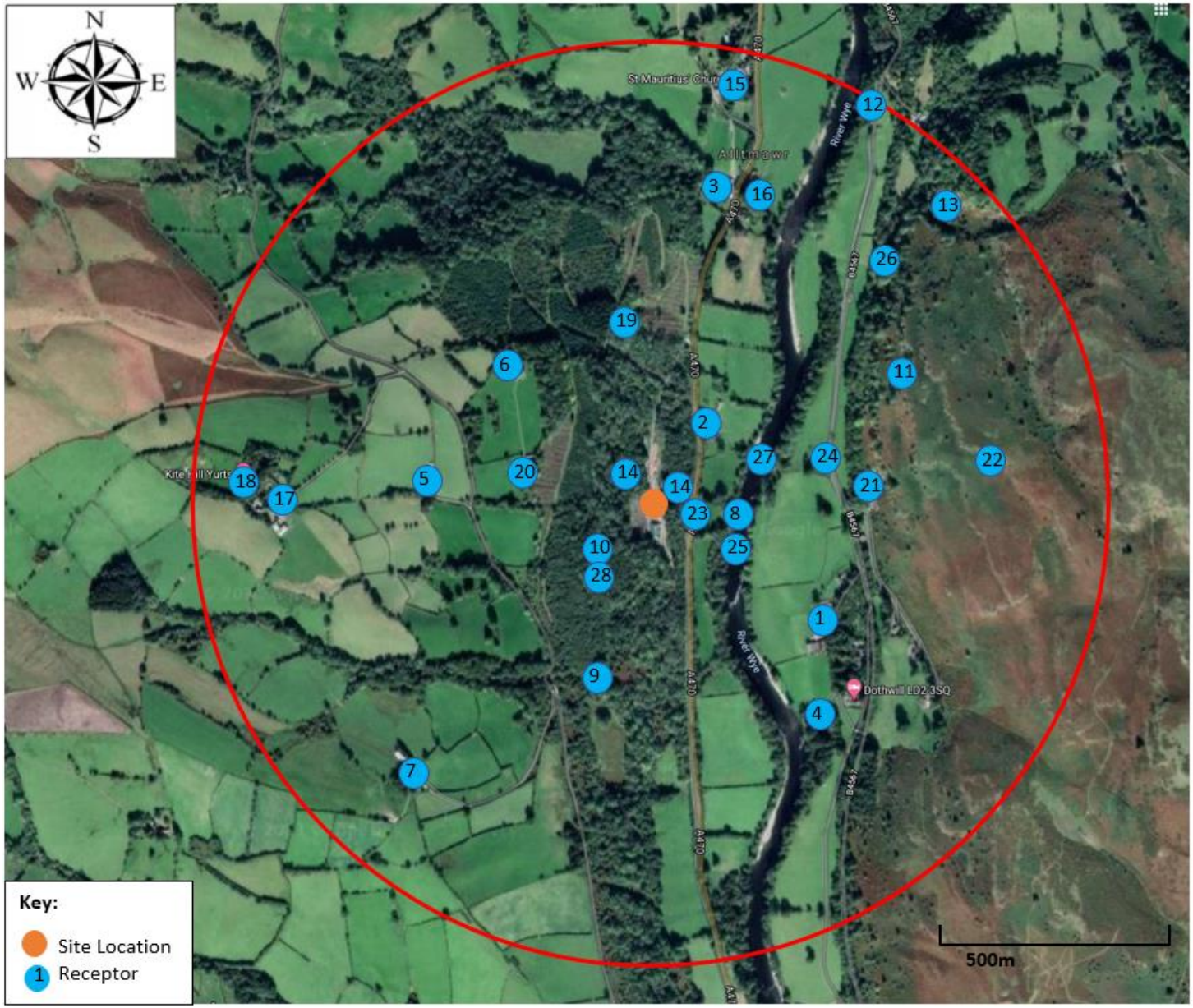
EXISTING SITE TOPOGRAPHY

Drawn	Checked	Scale at A2	Date	Issue Date
NG	LB	1:1250	27/05/21	27/05/21

Drawing status

INFORMATION

Drawing No.	Revision
C-MTS-DR-PL-03	C



ID	Receptor
Residential	
1	Sheep Wash
2	Cwrt-Gwenddwr
3	Properties on A470
4	Tyrcelyn Halt
5	Upper Pentywyn
6	Lower Pentywyn
7	Erw'rhenallt
Woodland and Waterways	
8	River Wye (Upper Wye) SSSI and SAC
9	Cwm Dyfnant
10	Broadleaved woodland
11	Llandeilo, Rhulen and Llanbedr Hills SSSI
12	River Wye (Tributaries) SSSI
13	Coed Aberedw SSSI
14	Ancient Woodland
On site	Small surface watercourses
Sensitive Land Uses	
15	St Mauritius Church
16	Chapel Farm
17	Bedw Farm
Industrial/Commercial	
18	Kite Hill Yurts
Public Rights of Way	
19	Public Bridleway (off the A470)
20	Public Footpath
21	Public Footpath (off the B4567)
22	Public Bridleway
Infrastructure/utilities	
23	A470
24	B4567
Species	
25	Important Plant Areas (Plantlife)
26	Rare Lichens and Bryophytes
27	Protected eels and fish
28	Protected mammals
Local Wildlife Sites	
	Allt Mawr Uchaf
	Old Bedw and Old Bedw 2
	Old Bedw GCN Pond

wamitab

Certificate No: **5149563**

CERTIFICATE OF TECHNICAL COMPETENCE

This Certificate confirms that

Luke Bridges

Has demonstrated the standard of technical competence required for the management of a facility of the type set out below

Facility Type

Level 4 in Waste Management Operations -

Managing Treatment Hazardous Waste (4TMH)

Authorising Signatures:

Chief Executive Officer

Director:

Date of issue: 04/09/2019

00021966

wamitab

Qualification Title:

WAMITAB Level 4 High Risk Operator Competence for Managing Physical and Chemical Treatment of Hazardous Waste

Qualification Accreditation Number:

601/8502/8

This Certificate is awarded to

Luke Bridges

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

1C89CF21-EE76-4462
B4AF-060D882D1A98
AuthentiQual.com

Chris James
WAMITAB Chief Executive Officer

Regulated by Ofqual
For more information see http://register.ofqual.gov.uk

Corff dyfarnu cydnabyddedig
Cymwysterau Cymru Qualifications Wales
Recognised awarding body

Regulation

The qualifications regulators logos on this certificate indicate that the qualification is accredited only for England, Wales and Northern Ireland. Qualifications Wales regulates this qualification where it is awarded to learners assessed wholly or mainly in Wales.

00132860

Operator Competence Certificate

Title:

Physical and Chemical Treatment of Hazardous Waste

This Certificate is awarded to

Luke Bridges

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

WAMITAB Chief Executive Officer

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

This certificate is jointly awarded by WAMITAB and the Chartered Institution of Wastes Management (CIWM) and provides evidence to meet the Operator Competence requirements of the Environmental Permitting (EP) Regulations, which came into force on 6 April 2008.

00132862

Credit certificate
This certificate determines credit awarded to:

Luke Bridges

Units gained:

		Credit Value	Credit Level
A/508/0756	Maintain health and safety in the waste resource management industry	4	L4
F/508/0757	Manage the environmental impact of work activities	3	L4
F/508/0760	Manage the movement, sorting and storage of waste	5	L4
R/508/0861	Control work activities on a waste management facility	6	L4
K/508/0882	Identify and implement improvements to waste management operations	3	L4
M/508/0883	Control maintenance and other engineering operations	5	L4
T/508/0884	Procedural Compliance	4	L4
A/508/0885	Manage and maintain systems for responding to emergencies	3	L4
F/508/0886	Manage the reception of hazardous waste	7	L4
M/508/0978	Manage transfer and disposal from hazardous waste treatment and recovery operations	9	L4
H/508/0993	Manage site operations for the treatment of hazardous waste	9	L4
Y/508/0974	Manage an inspection visit at your site from regulatory bodies	6	L4

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

Chris James
WAMITAB Chief Executive Officer

Regulated by Ofqual
For more information see http://register.ofqual.gov.uk

Corff dyfarnu cydnabyddedig
Cymwysterau Cymru Qualifications Wales
Recognised awarding body

The qualifications regulators logos on this certificate indicate that the qualification is accredited only for England, Wales and Northern Ireland. Qualifications Wales regulates this qualification where it is awarded to learners assessed wholly or mainly in Wales.

00132861

Continuing Competence Certificate

This certificate confirms that

Luke Bridges

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 07/09/2021

TSH Transfer - Hazardous Waste

Expiry Date: 07/09/2023

Verification date: 04/09/2021

Authorised:

Learner ID: 19051

Certificate No.: 5184183

Date of Issue: 07/09/2021

Director of Qualifications and Standards

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00162869

Continuing Competence Certificate

This certificate confirms that

Luke Bridges

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 11/10/2021

TMH Treatment - Hazardous Waste

Expiry Date: 11/10/2023

Verification date: 06/10/2021

Authorised:

Learner ID: 19051

Certificate No.: 5185942

Date of Issue: 11/10/2021

Director of Qualifications and Standards

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00156457

Quality Protocol

Aggregates from inert waste

End of waste criteria for the production of aggregates from inert waste

Northern Ireland Environment Agency
www.doeni.gov.uk/niea

Cyfoeth Naturiol Cymru
Natural Resources Wales

This Quality Protocol was funded by Defra, the Welsh Government and the Northern Ireland Environment Agency (NIEA) as a business resource efficiency activity. It was developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with Defra, the Welsh Government, industry and other regulatory stakeholders. The Quality Protocol is applicable in England, Wales and Northern Ireland. It sets out the end of waste criteria for the production and use of aggregates from inert waste.

Contents

Foreword

Background

Uncertainty over the point at which waste has been fully recovered and ceases to be waste within the meaning of Article 3(1) of the EU Waste Framework Directive (2008/98/EC) has inhibited the development and marketing of materials produced from waste which could otherwise be used beneficially without damaging human health and the environment. In some cases, this uncertainty has also inhibited the recovery and recycling of waste and its diversion from landfill.

Interpretation of EU legislation is ultimately a matter for the Courts and there is now a substantial body of case law on the interpretation of the definition of waste. Drawing on the principles established in this case law, it is possible to identify the point at which certain wastes can be regarded as having ceased to be waste and thus when the Directive's waste management controls should no longer apply. This identification is the purpose of the Waste Protocols Project.

What is a Quality Protocol?

A Quality Protocol sets out end of waste criteria for the production and use of a product from a specific waste type. Compliance with these criteria is considered sufficient to ensure that the fully recovered product may be used without undermining the effectiveness of the Waste Framework Directive and therefore without the need for waste management controls.

A Quality Protocol indicates how compliance should be demonstrated and points to good practice for the storage, transportation and handling of the fully recovered product. The Quality Protocol further aims to provide increased market confidence in the quality of products made from waste and so encourage greater recovery and recycling.

1. Introduction

Definitions of terms that appear in italics when they are first used in this Quality Protocol are given in Appendix A.

1.1. What is this Quality Protocol?

1.1.1 This Quality Protocol has been developed by the *Environment Agency*, the *Northern Ireland Environment Agency (NIEA)* and *WRAP (Waste & Resources Action Programme)* in consultation with industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.

1.1.2 The Quality Protocol sets out end of waste criteria for the production and use of *aggregates* from *inert* waste. It supersedes 'Quality Protocol for the production of aggregates from inert waste', revised edition (ISBN 1-84405-217-6). If the criteria set out are met, the resulting outputs will normally be regarded as having been fully recovered and to have ceased to be waste.

1.1.3 Producers and users are not obliged to comply with the Quality Protocol. If they do not, the aggregate will normally be considered to be waste[1] and *waste management controls* will apply to its handling, transport and use.

1.1.4 This Quality Protocol does not affect the obligation of producers to hold an *environmental permit* (including an exemption) and to comply with its conditions when storing and processing waste.

1.1.5 This Quality Protocol does not affect permitting or any other legal requirements that do not depend on the status of the material as a waste.

1.2 The purpose of the Quality Protocol

1.2.1 The Quality Protocol has four main purposes:

i. clarifying the point at which waste management controls are no longer required;
ii. providing users with confidence that the aggregate they purchase conforms to an approved industry specification defined in accordance with an appropriate European aggregate standard;
iii. providing users with confidence that the aggregate is suitable for a use within a *designated market sector(s)* including by conforming with the industry standard; and
iv. protecting human health and the environment (including soil).

1.2.2 In addition, the Quality Protocol describes acceptable good practice for the transportation, storage and handling of aggregate (see Appendix D).

1.3 Complying with the Quality Protocol

1.3.1 Aggregate will normally be regarded as having ceased to be waste, and therefore no longer subject to waste management controls, provided:

- it conforms to the requirements of the European standard appropriate to the use it is destined for as set out in Section 2;
- the aggregate is produced under *Factory Production Control* as required by the European standard and as set out in Section 2;
- within Factory Production Control, inputs are limited and controlled as set out in Section 2;
- it requires no further processing, including size reduction, for the use it is destined for as set out in Section 2;

[1] Unless on a case-by-case basis it can be demonstrated that the material is non-waste.

- it is destined for a use within the designated market sectors set out in Section 4; and
- it conforms with CE conformity marking requirements contained in the Construction Products Regulations, which will apply to all aggregates placed on the market to harmonised European Aggregates Standards from July 2013.

1.3.2 Producers must demonstrate that these criteria have been met. They should do this in the ways set out in Section 3.

1.3.3 This Quality Protocol will be adopted as a technical regulation under *Technical Standards and Regulations Directive (98/34/EC)* as amended. We recognise that there may be codes of practice which apply in the *European Economic Area (EEA)* States other than the UK setting out requirements for the use of aggregate. We accept that aggregate may cease to be waste provided it has been produced in compliance with:

- a relevant code of practice of a national standards body or equivalent body of any EEA State; or
- any relevant international standard recognised for use in any EEA State; or
- any relevant technical regulation with mandatory or de facto mandatory application for marketing or use in any EEA State.

These must give levels of product performance and protection of human health and the environment which are equivalent to those required by this Quality Protocol.

1.3.4 An outline of the main stages and control mechanisms of the Quality Protocol is presented in Figure 1. These are described further in Sections 2 and 3.

1.4 When Quality Protocol compliant material may become waste

1.4.1 Producers and users of aggregate should note that, even if the Quality Protocol is complied with, the material will become waste again and subject to waste management controls at any stage it is discarded or there is an intention or requirement to discard, for example if it is:

- disposed of; or
- stored indefinitely with little prospect of being used.

1.4.2 In addition, if Quality Protocol compliant material is mixed with waste materials, the resulting mix will be considered to be a waste and subject to waste management controls. If Quality Protocol compliant material is mixed with non-waste materials, the resulting mix will not, as a result, be waste.

1.5 Failure to comply with the Quality Protocol

1.5.1 Where this Quality Protocol is not complied with, for example the aggregate does not conform to the requirements of the European standard or the producer cannot demonstrate evidence of compliance, the aggregate produced will normally be considered to be waste. In such circumstances, the producer or user must comply with the appropriate waste management controls[2] for the transportation, storage and use of the aggregate and may be committing an offence if they do not do so.

1.5.2 Detailed guidance on waste management controls can be obtained from the Environment Agency's National Customer Contact Centre on 08708 506 506, from its website (www.environment-agency.gov.uk/subjects/waste/), from Natural Resources Wales website (enquiries@naturalresourceswales.gov.uk) or from NIEA's website (www.ni-environment.gov.uk/waste-home/authorisation.htm).

[2] For example, in compliance with Article 23 of the Waste Framework Directive, the user might need to obtain a permit from the Environment Agency or Natural Resources Wales (or in Northern Ireland a waste management licence or PPC permit from the NIEA).

1.6 Updating the Quality Protocol

1.6.1 We will review and update this document as we consider appropriate.

1.6.2 Triggers for a review could include:

- pollution incidents;
- development in scientific understanding;
- a change in the market;
- a change in legislation or case law; or
- a change to the agreed European standard.

1.6.3 This Quality Protocol may be withdrawn if it becomes apparent that it is generally being misapplied and/or misused.

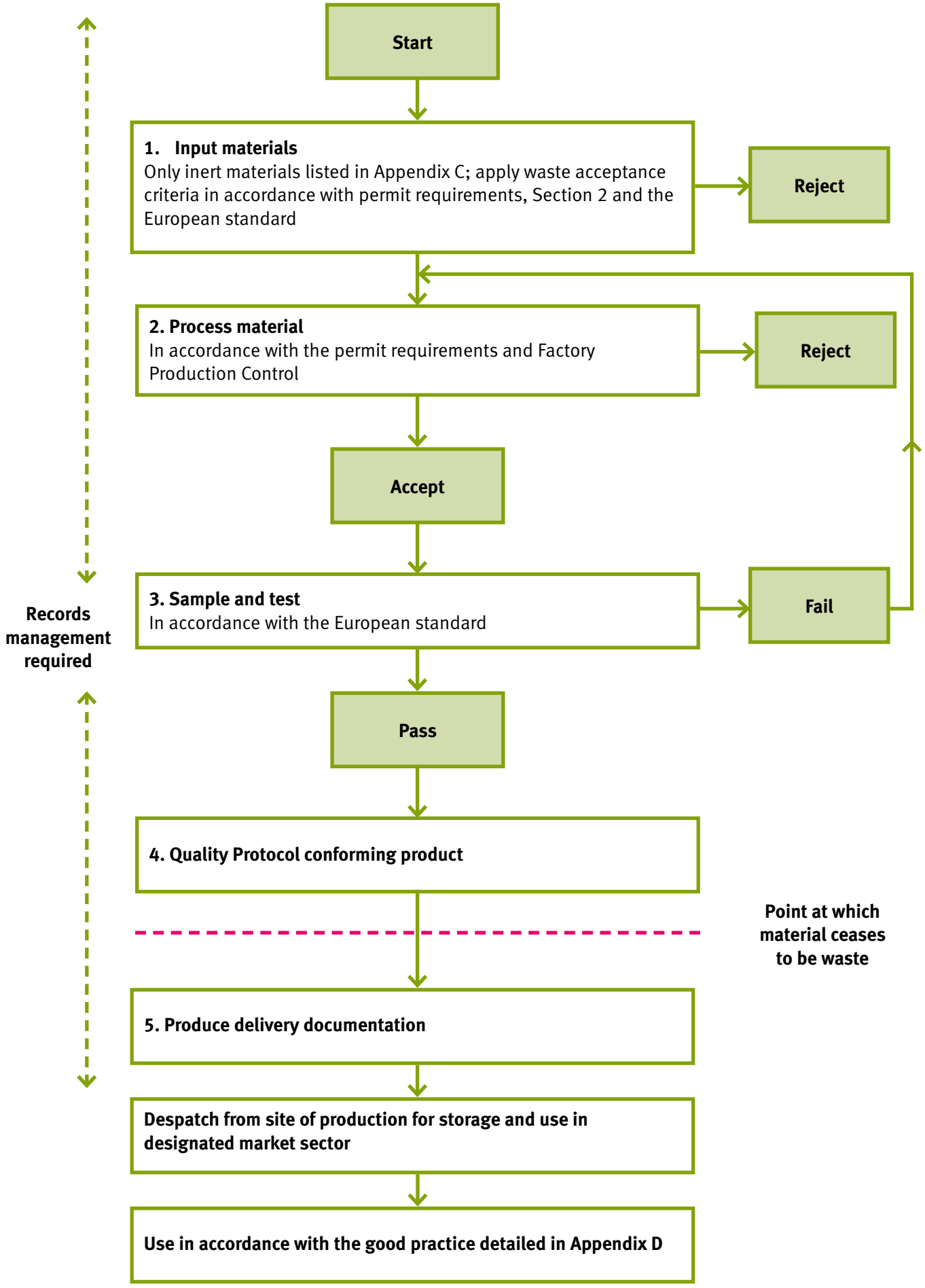
1.7 Importing and exporting Quality Protocol compliant material

1.7.1 Producers intending to export material that has been produced in compliance with this Quality Protocol should be aware that, although the material may cease to be waste in England, Wales and Northern Ireland, the country of destination may take a different view. If the competent authority in the country of destination considers the material to be waste, the shipment will be subject to the controls set out in the Waste Shipment Regulation (EC No. 1013/2006).

1.7.2 Those intending to import Quality Protocol compliant material into England, Wales or Northern Ireland should be aware that, if the country of despatch regards the material as waste, the controls set out in the Waste Shipment Regulation will apply to the shipment. This is the case even though the material may be regarded as having ceased to be waste in England, Wales and Northern Ireland.

1.7.3 Before importing or exporting such material it is prudent to check with the competent authority for the country of despatch or destination. A list of the competent authorities can be found at: http://ec.europa.eu/environment/waste/shipments/pdf/list_competent_authorities.pdf

Figure 1: Main stages and control mechanisms of the Quality Protocol



2. Producing aggregates from inert waste

2.1 Regulating the production process

2.1.1 The process of turning inert waste material into a product is classified as a waste recovery operation and is subject to the waste management controls set out in the Waste Framework Directive and domestic legislation. This Quality Protocol does not affect the obligation on producers to hold an environmental permit (including exemptions) (in Northern Ireland a waste management licence or exemption or a PPC permit is required) that authorises the storage and processing of inert waste and to comply with its conditions.

2.2 Criteria for producing aggregate that has ceased to be waste

2.2.1 To comply with this Quality Protocol, aggregate must be produced in compliance with the criteria outlined in Sections 2.3 to 2.5. In addition, the material should be destined for use in the designated market sector described in Section 4.

2.3 Input materials

2.3.1 The only acceptable input materials are the inert waste materials specified in Appendix C.

2.3.2 To ensure that only inert waste is accepted, producers must have acceptance criteria which meet, as a minimum, the requirements set out in Appendix C.

2.4 Processed in accordance with the approved standard including a Factory Production Control system

2.4.1 The producer must comply with all the requirements of a BS EN aggregates standard (for example, BS EN 13242), appropriate for the use for which the aggregate is destined, at the time it is produced, to comply with this Quality Protocol. Appendix B details the main standards and specifications relating to aggregates at the time of publishing this Quality Protocol.

2.4.2 The specifications (for example, the Highways Agency's Specification for Highway Works (SHW)) summarised in Appendix B have properties selected from the BS EN aggregates standards. The requirements for evaluation of conformity from the relevant BS EN apply in all cases.

2.4.3 The standards and specifications summarised in Appendix B are subject to review and producers should ensure they work to the latest version. Any changes to the agreed standards and specifications may trigger a review of the Quality Protocol (see Section 1.6.2).

2.4.4 Producers must set up and produce the aggregate under a system for Factory Production Control as set out in the relevant BS EN aggregates standard listed in Appendix B.

2.5 Requires no further processing

2.5.1 The aggregate must require no further processing, including size reduction, for the use for which it is destined at the time it is produced to comply with this Quality Protocol.

3 Providing evidence of compliance with the Quality Protocol

3.1 Producers must be able to demonstrate compliance with all the requirements of this Quality Protocol.

3.2 Some of the records specified below may already be required as part of the producer's environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland). This Quality Protocol does not affect the obligations on producers to comply with environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland).

3.3 Records management

3.3.1 To be able to demonstrate compliance with the Quality Protocol, producers must maintain *delivery documentation* for every load of *recycled aggregate* despatched.

3.3.2 This delivery documentation must include:

- date of supply;
- customer's name and contact details;
- product description to aggregates standard and customer specification;
- the name and contact details of the producer, including the address of the site of production;
- quantity supplied by weight/volume; and
- a statement that the product was produced in compliance with this Quality Protocol.

Where requested by the purchaser further documentation should also include:

- test results and procedures in accordance with the standard or specification in Appendix B and for any further tests required to assess suitability for a particular end use;
- outline details of the Factory Production Control manual; and
- information on good practice relating to the storage, transportation and handling of aggregate (as set out in Appendix D).

3.3.3 These requirements are additional to any statutory record-keeping obligations. However, some records may be used to fulfil both a regulatory obligation and evidence of compliance with this Quality Protocol.

3.3.4 For the purposes of this Quality Protocol the producer, must:

- keep and retain specified records for a minimum of two years; and
- make them available for inspection by the regulator (if requested).

4. Storage and use of recycled aggregates

4.1 As for all aggregate, users of recycled aggregate that complies with this Quality Protocol should take full account of any environmental impact resulting from its use.

4.2 Storage of recycled aggregate

4.2.1 Aggregate produced in compliance with the requirements of this Quality Protocol, which is therefore regarded as having ceased to be waste, may need to be stored temporarily either before delivery to the customer or at the customer's premises. The materials will not be waste at that point, so waste management controls will not apply.

4.2.2 If it appears that the material is being stored indefinitely with no certainty of use, the material will revert to being a waste and waste management controls will apply as specified in Section 1.4.

4.2.3 Producers, distributors and users should follow good practice for the transportation, storage and handling of aggregate, details of which are included in Appendix D.

4.3 Use of recycled aggregate – designated market sectors

4.3.1 To comply with this Quality Protocol, aggregate must be destined for use in unbound or bound applications in civil engineering and construction (as set out below) and appropriate product descriptions must be used on delivery documentation.

- Unbound – including sub-base, capping, general fill, pipe bedding and drainage;
- Bound – including hydraulically bound applications, concrete and asphalt.

Appendix A Definitions

In this Quality Protocol, the words and phrases below have the following meanings.

Agent: An agent acts like a broker, putting buyer and seller together. The agent does not take possession of the aggregate but is paid commission while the buyer is invoiced directly.

Aggregate: A granular material used in construction. For the avoidance of doubt, clays and soils are not considered to be aggregates for the purposes of this Quality Protocol.

Defra: Defra is the UK government department responsible for policy and regulations on the environment, food and rural affairs.

Delivery documentation: Record of who the aggregate is supplied to, including the documentation accompanying each load of aggregate. It details the standard to which the product complies and states that the product was produced in compliance with this Quality Protocol.

Designated market sector(s): The sector(s) listed in Section 4 to which this Quality Protocol applies.

Environment Agency: The Environment Agency is the leading public body for protecting and improving the environment in England. Its job is to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world.

Environmental permit: Environmental permits issued or exemptions registered under the Environmental Permitting (England and Wales) Regulations 2010.

European Economic Area (EEA): The EEA States consist of the members of the EU (Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK) together with Iceland, Liechtenstein, Norway. Switzerland is not part of the EEA, but linked through a series of bilateral agreements. Although the Channel Islands and the Isle of Man are UK Crown dependencies, they are not part of the EU and businesses registered there are subject to different licensing legislation.

European Waste Catalogue (EWC): European Waste Catalogue (EWC 2002 and amendments) – a comprehensive list of waste codes and descriptions based on waste source and type (Commission Decision 2000/532/EC amended by Commission Decisions 2001/118/EC and 2001/119/EC and Council Decision 2001/573/EC).

Factory Production Control: A management system focusing mainly on the production process which aims to ensure that product quality is consistently maintained to the required specifications. Factory Production Control (FPC) for the production of aggregates is specified in BS EN 16236 Evaluation of conformity of aggregates — Initial Type Testing and Factory Production Control.

Inert: Waste is inert if:

(a) it does not undergo any significant physical, chemical or biological transformations;
(b) it does not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health; and
(c) its total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water or groundwater.

Northern Ireland Environment Agency (NIEA): NIEA is the leading public body in Northern Ireland responsible for protecting, conserving and promoting the natural environment and built heritage.

Natural Resources Wales (NRW): NRW is the public body in Wales and its purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.

PPC permit (Northern Ireland): A permit issued under the Pollution Prevention and Control Regulations (Northern Ireland) S.R. 2003/46. Establishes a pollution control regime for certain installations or mobile plants and includes combustion activities.

Producers: The operator(s) undertaking aggregate processing.

Quality Protocol: A Quality Protocol sets out criteria for the production of a product from a specific waste type. Compliance with these criteria is considered sufficient to ensure that the recovered product can be regarded as having ceased to be waste and that therefore no longer subject to waste management controls. In addition, the Quality Protocol indicates how compliance may be demonstrated and points to good practice for transportation, storage and handling of the recovered product.

Recycled aggregate: Aggregate produced in compliance with the Quality Protocol for the production of aggregate from inert waste (version applicable at the time of production).

Technical Standards and Regulations Directive 98/34/EC: Seeks to ensure the transparency of technical regulations and is intended to help avoid the creation of new technical barriers to trade within the European Community.

User(s): User means construction companies, manufacturers, contractors and all those organisations or individuals responsible for the end use of aggregate.

Waste management controls: Controls under legislation that govern the treatment, handling, containment, transportation storage use and disposal of waste.

Waste management licence or exemption (Northern Ireland): An authorisation issued in Northern Ireland under the Waste Management Licensing Regulations (Northern Ireland) 2003 (as amended), or registered exemption. The Regulations provide for applications in Northern Ireland for waste management licenses authorising the deposit, disposal and treatment of controlled waste. This includes exemptions from waste management licensing.

WRAP (Waste & Resources Action Programme): WRAP's vision is a world without waste, where resources are used sustainably. It works with businesses and individuals to help them reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

Appendix B Approved industry standards and Factory Production Control

B1 Approved industry standards

B1.0 The producer must comply with all the requirements of a BS EN aggregates standard appropriate to the use for which the aggregate is destined for at the time it is produced to comply with this Quality Protocol. Table B1 details the standards and main specifications relating to aggregates at the time of publishing this Quality Protocol.

Table B1: Standards, specifications and quality controls for the use of aggregates

Product and Use	Standard	Specification	Quality controls
1 Unbound recycled aggregate: Pipe bedding Drainage	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works (SHW): Series 500 Highway Authorities and Utilities Committee (HAUC): Specification for the reinstatement of openings in highways (SROH)	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
2 Unbound recycled aggregate: Granular fill General fill Capping	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 600 HAUC: Specification for the reinstatement of openings in highways BS EN 13285: Unbound mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
3 Unbound recycled aggregate: sub base	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 800 HAUC: Specification for the reinstatement of openings in highways BS EN 13285: Unbound mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW

4 Recycled aggregate for concrete	BS EN 12620: Aggregates for concrete	Highways Agency Specification for Highway Works: Series 1000 BS 8500-2: Concrete	BS EN 12620: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste
5 Recycled aggregate for asphalt	BS EN 13043: Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas	Highways Agency Specification for Highway Works: Series 900 HAUC: Specification for the reinstatement of openings in highways	BS EN 13043: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
6 Recycled aggregate for hydraulically bound mixtures	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 800 HAUC: Specification for the reinstatement of openings in highways BS EN 14227-1 to 5 Hydraulically Bound Mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
7 Reclaimed asphalt for use in bituminous mixtures	BS EN 13108-8 Bituminous mixtures – Material specifications – Part 8: Reclaimed asphalt.	Highways Agency Specification for Highway Works: Series 900 BS EN 13108-1 to 5 Bituminous mixtures – Material specifications	BS EN 13108-8 NHSS Sector Scheme 14 SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW

*BS EN 16236 Evaluation of conformity of aggregates – Initial Type Testing and Factory Production Control.

The British Standards Institute (BSI) publishes guidance documents that explain how the European Aggregate Standards are applied within the UK, the ones relevant to table B1 are:

- PD 6682-1 Aggregates for concrete. Guidance on the use of BS EN 12620
- PD 6682-2 Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas. Guidance on the use of BS EN 13043
- PD 6682-6 Aggregates for unbound and hydraulically bound materials for use in civil engineering works and road construction. Guidance on the use of BS EN 13242

All aggregates PDs and BS ENs can be purchased from BSI: http://shop.bsigroup.com

B2 Factory Production Control

B2.0 Production and standards/specification requirements

- Factory Production Control (FPC) must be set up. This is mandatory when producing to BS EN aggregate standards and to this Quality Protocol.
- The requirements set out in B2.1 to B2.9 are complementary to the evaluation of conformity requirements of BS EN 16236, which must be implemented in full.
- The FPC is required to include the following quality management requirements set out below. These, which must be implemented.

B2.1 General points about the procedures

- A FPC manual must be produced which documents how the FPC is implemented and sets out procedures for establishing the approval, issue, distribution and administration of documentation and data for internal and external use.
- A management representative must be nominated as responsible for ensuring the FPC is implemented.
- The FPC must be reviewed periodically by management to ensure its continuing suitability and effectiveness. Records of such reviews must be kept.
- Controls on sub-contractors must be defined.

B2.2 Waste acceptance criteria

- To ensure only inert waste is accepted, the producer must develop ‘acceptance criteria’ specific to each site/location. These criteria must be followed at all times.
- The acceptance criteria must incorporate all statutory requirements relating to the receipt of incoming waste shall be observed and included in the Acceptance Criteria. These requirements include those arising from an environmental permit, waste management licence or a waste exemption, and the duty of care.
- The acceptance criteria must also include:
  - a list of the types of waste that are accepted (including waste codes);
  - source/place of origin of the waste;
  - supplier and transporting agent; and
  - method of acceptance.
- Every load must be inspected visually, both on initial receipt and after tipping, to ensure compliance with the acceptance criteria.
- A procedure for dealing with non-conforming incoming waste must be set up, for example, rejection of loads, quarantine or disposal. Records must be kept of how the procedure has been implemented.

B2.3 Production and testing

- The manner is which processing equipment is maintained and adjusted during production must be defined.
- Input materials must be stocked in a controlled manner in clearly identified locations.
- Material taken from stock for processing must be checked for deterioration.
- The finished product must be identifiable up to the point of sale.
- Procedures must be in place and implemented to maintain the quality of the product during handling, storage, transport and delivery.
- Procedures for the use, control, calibration and maintenance of inspection, measuring and test equipment must be setup and followed. Equipment must be uniquely identified.

B2.4 Training

- All personnel must be trained on the FPC including:
  - acceptance criteria;
  - procedures for non-compliant input wastes and output products;
  - sampling;
  - testing; and
  - inspection.

B2.5 Records

- Records of relevant controls and inspections, calibrations, changes and training must be maintained for a suitable period of time. This period must be defined.

- A Method Statement of Production (MSP) must be produced and maintained. The MSP represents the recovery process for the incoming waste and it is part of the FPC. It must contain a description or representation of the production process for each product type including:
  - input materials;
  - equipment used; and
  - actions undertaken at each stage from acceptance of waste to allocation to product stockpiles.
- The aggregates must be produced to a recognised standard and/or specification. This specification will define the properties and characteristics of the product, as suitable for its application.

B2.6 Documentation

- Delivery documentation must:
  - record the type of aggregate product despatched;
  - state the site at which the product was produced;
  - state that the aggregate was produced under a quality management scheme conforming to the aggregates Quality Protocol.
- If requested, purchasers must be provided with the results from the testing regime undertaken on each product.
- Historical records of test results must be kept and/or made available as summary results (for example, a graph of test results over time).

B2.7 Testing

- Procedures for the use, control, calibration and maintenance of inspection, measuring and test equipment must be set up and followed. Equipment must be uniquely identified.
- A test plan for production must be defined that includes:
  - the type of testing for each product; and
  - sampling and testing frequency (see B2.8 below for information about minimum test frequencies).
- Table B2 provides a summary of the frequencies required for the minimum testing requirements set out in the main standards.
- The test procedures must be appropriate to the end use of the recycled aggregates and testing frequencies must comply with the standards/specifications for the aggregate produced.
- Producers must have in place testing procedures to meet the testing requirements for each product. A summary of the frequencies required for the minimum testing requirements within the mainstream standards is provided in Table B2 (below).
- More detailed testing requirements are defined within the aggregate standards and specifications.

B2.8 Minimum testing requirements – frequencies

- Tables B2 and B4 collate the minimum test frequencies required by common standards and specifications, including the minimum requirements of the FPC for a range of routine tests.
- Frequencies are defined in terms of 'production week' or similar and/or 'production day'. These periods should be defined by the producer depending on the throughput of the plant/equipment.
- Production week can be defined as the period of seven consecutive days comprising at least five production days or the period taken to complete five production days, whichever is longer.

B2.9 Departure from minimum test frequencies

- Where materials are known to be marginal or if initial test results show them as such, the frequency of testing should be increased.
- The producer must prepare a schedule of test frequencies taking into account the minimum requirements of the relevant FPC.
- Under special conditions the test frequencies may be reduced below those given in the FPC annex of the standards. Possible reasons include:
  - highly automated production equipment;
  - long-term experience with consistency of special properties;
  - sources of high conformity; and
  - running a Quality Management System with exceptional measures for surveillance and monitoring of the production process.
- Reasons for reducing test frequencies must be stated in the FPC manual.

Table B2: Summary of testing requirements associated with particular end uses and standards (Note: Testing frequencies should be increased where variability is identified through Factory Production Control and where the measured value is close to the specified limit.)

End use	Standard and Specifications	Test	BS test reference	Minimum test frequency (see B2.8)
All end uses	BS EN 13242 BS EN 12620	Particle size Distribution	EN 933-1	1 per week
		Particle density	EN 1097-6	1 per month
		Resistance to fragmentation (LA)	EN 1097-2	2 per year
		Classification of constituents(see table B3)	EN 933-11	1 per month
		Water soluble sulfate	EN 1744-1	1 per month
Aggregates for concrete	BS EN 12620	Particle density and water absorption	EN 1097-6	1 per month
		Sulfur containing compounds	EN 1744-1	2 per year
		Chlorides	EN 1744-5	2 per year
		Influence on setting time of cement	EN 1744-6	2 per year

Tests listed are not exhaustive and reference should be made to relevant standards and specifications for additional requirements. Tests for BS EN 13043 and additional minimum test frequencies for other aggregate standards are tabled in EN 16236.

Table B3: Classification of constituents: testing to BS EN 933-11, classification groups

Code	Constituents
Rc	Concrete, concrete products, mortar, concrete masonry units
Ru	Unbound aggregate, natural stone, hydraulically bound aggregate
Rb	Clay masonry units (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete
Ra	Bituminous materials
Rg	Glass
FL	Floating material in volume
X	Cohesive (e.g. clay and soil), metals, wood, plastic, rubber, gypsum plaster

Notes: Maximum permitted for constituent **X**: 1% by mass

Maximum permitted for constituent **FL:** ≤10 cm^3/kg unbound, ≤5 cm^3/kg aggregates for concrete

Table B4: Example of supplementary testing to meet Specification requirements

End Use	Standard and Specifications	Test	BS Test Reference	Minimum test frequency (see section B2.7)
Unbound: Fills Capping Sub-base	SHW Series 600, & 800 SROH	California Bearing Ratio Plasticity of fines Frost Heave	 1377: part 4 1377: part 2 812: part 124	 1 per month 1 per week 1 per year

Tests listed are not exhaustive and reference should be made to relevant standards and specifications for additional requirements.

Appendix C: Wastes considered to be inert waste for the purpose of this Quality Protocol and to be acceptable for the production of recycled aggregates

General restrictions

This QP only applies to aggregates i.e. a granular material used in construction, which is processed from inert waste. For the avoidance of doubt, clays and soils are not considered to be aggregates for the purposes of this Quality Protocol.

C1 Table C1 lists all the input materials and their relevant 'waste code'[3] or European Waste Catalogue (EWC) code considered inert and acceptable for the production of recycled aggregate under this Quality Protocol. The table includes notes to clarify any limits and restrictions relating to specific waste types. Waste inputs must not contain or be contaminated with dangerous substances as described in the List of Wastes (England) Regulations 2005, List of Wastes (Wales) Regulations 2005 and List of Wastes (Northern Ireland) 2005, as amended. Incidental quantities of inert physical contaminants (such as soils, peat, clays, silts, wood, plastics, rubber, metal) may be present with the input material but must be removed during the processing of the waste to comply with the constituent requirements of aggregates standards and table B3 of this Quality Protocol.

Table C1: Acceptable inert waste input materials

Wastes from physical and chemical processing of non-metalliferous minerals

Type and exclusions	Waste code
Waste gravel and crushed rocks other than those mentioned in 01 04 07 May include excavation from mineral workings.	**01 04 08**
Waste sand and clays Waste sand only. Must not include contaminated sand.	**01 04 09**

Wastes from manufacture of glass and glass products

Type and restrictions	Waste code
Waste glass-based fibrous materials Allowed only if: Wastes without organic binders	**10 11 03**

3 'Waste code' refers to the six digit code for a type of waste in accordance with the List of Wastes (England) Regulations 2005, List of Wastes (Wales) Regulations 2005 and List of Wastes (Northern Ireland) Regulations 2005, as amended. Where it refers to hazardous waste, the code includes an asterisk.

Packaging (including separately collected municipal packaging waste)

Type and restrictions	Waste code
Glass packaging	**15 01 07**

Construction and demolition waste – concrete, bricks, tiles and ceramics

Type and restrictions	Waste code
Concrete Must not include concrete slurry.	**17 01 01**
Bricks	**17 01 02**
Tiles and ceramics	**17 01 03**
Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	**17 01 07**

Construction and demolition waste – wood, glass and plastic

Type and restrictions	Waste code
Glass Must not include fibreglass or glass fibre.	**17 02 02**

Construction and demolition waste – bituminous mixtures, coal tar and tarred products

Type and restrictions	Waste code
Bituminous mixtures other than those mentioned in 17 03 01	**17 03 02**
Allowed only if: Bituminous mixtures from the repair and refurbishment of the asphalt layers of roads and other paved areas (excluding bituminous mixtures containing coal tar and classified as waste code 17 03 01). Must not include coal tar or tarred products. Must not include freshly mixed bituminous mixtures.	

Construction and demolition waste – soil (including excavated soil from contaminated sites), stones and dredging spoil

Type and restrictions	Waste code
Soil and stones other than those mentioned in 17 05 03 Must not contain any contaminated soil or stone from contaminated sites.	**17 05 04**
Dredging spoil other than those mentioned in 17 05 05 Allowed only if: Inert aggregate from dredgings. Must not contain contaminated dredgings. Must not contain fines.	**17 05 06**
Track ballast other than those mentioned in 17 05 07	**17 05 08**
Allowed only if: Does not contain soil and stones from contaminated sites.	

Construction and demolition waste – other construction and demolition wastes

Type and restrictions	Waste code
Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	**17 09 04**
Allowed only if: The waste is generated from utilities trenchings. The waste consists of sub base aggregates i.e. granular material. The waste contains only materials that would be described by entries 17 01 01, 17 03 02 and 17 05 04 in this appendix if the waste was not mixed.	

Wastes from the mechanical treatment of waste not otherwise specified (for example sorting, crushing, compacting, pelletising)

Type and restrictions	Waste code
Glass Does not include glass from cathode ray tubes.	**19 12 05**
Minerals (for example sand, stones) Must not contain contaminated concrete, bricks, tiles, sand, stone or gypsum from recovered plasterboard.	**19 12 09**

Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

Type and restrictions	Waste code
Glass Must not include fibreglass.	**20 01 02**
Garden and park wastes (including cemetery waste) – soil and stones Must not contain contaminated stones from garden and parks waste.	**20 02 02**

Appendix D Good practice for the transportation, storage and use of recycled aggregates

D1 Pollution prevention and environmental good practice

- Follow the pollution prevention guidance developed in partnership with the industry to help those working on construction and demolition sites to prevent pollution.

Pollution Prevention Guidelines PPG6: Working at construction and demolition sites (April 2011), http://publications.environment-agency.gov.uk/pdf/PMHO0410BSGN-e-e.pdf

- Follow the guidance produced by CIRIA which provides practical advice for minimising environmental impacts on construction sites.

CIRIA, Environmental good practice on site (C692)

D2 Health and safety

- All applications of aggregates should comply with recommendations from the Health and Safety Executive (HSE) such as using appropriate personal protective equipment (PPE) and dust suppression measures.

D3 Transportation, storage and handling

- Aggregates should be handled and stored to minimise the creation of airborne dust.
- Engineering control measures such as containment, enclosed silos/bins/hoppers, local exhaust ventilation, sprays suppression systems, etc. should be used where there is a risk of airborne dust creation.
- Open conveyor handling systems should be provided with wind boards or other protection to prevent wind-whipping.
- Manual handling of the aggregates should be minimised through the use of mechanical aids wherever possible. Account should be taken of the Manual Handling Regulations and care should be taken when lifting by hand.
- Aggregates are inert, but dust and fine particles should be prevented from entering watercourses and drains. Deposition of dust on vegetation and surrounding property should be avoided by controlling the release of dust at source.

Waste & Resources Action Programme

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recycle

WRAP Quality Manual for the production of aggregates from inert waste

John Jones Civil Engineering & Groundworks Ltd

Cwrtgwenddwr Wood Recycling Facility

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Quality Control

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1.0	04/21	Original Draft	Kasia Haywood		Luke Bridges	
2.0	14/12/22	Administrative amendments made to logo and document control elements added	Kasia Haywood		Luke Bridges	

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1. Introduction

This Quality Manual has been produced by MTS Environmental Ltd on behalf of the contractors, John Jones Civil Engineering & Groundworks Ltd. This document demonstrates that John Jones Civil Engineering & Groundworks Ltd has adequate controls and testing regimes in place to ensure the successful recovery of inert waste materials into finished recycled aggregate products which comply with industry specification. John Jones aims to reduce the amount of waste sent to landfill to provide a sustainable future.

The Quality Manual strictly follows guidance from a Quality Protocol outlined in the Waste and Resources Action Programme (WRAP). In addition, the specific European Standards listed below have been utilised as guidance during the production of this quality plan:

- Unbound mixtures Specification BS EN 13285:2003
- Aggregates for unbound and hydraulically bound materials for use in Civil Engineering work and road construction BS EN 13242:2002+A1:2007
- Tests for general properties of aggregates BS EN 932:1997

This document has been produced as part of the Environmental Management Systems (EMS) in place at John Jones Civil Engineering & Groundworks Ltd and should be read in conjunction with the site-specific EMS. References are made to the EMS throughout this document.

2. Definitions

CA	Compliance Administrator
DS	Depot Supervisor
EMS	Environmental Management System
EA	Environment Agency
FPC	Factory Production Control
MTN	Material Transfer Note
NCN	Non-Conformance note
NRM	National Resources Wales
SM	Site Manager
WRAP	Waste Resources Action Programme
WTN	Waste transfer note

3. Related Documentation

Table 1 below outlines related documents, which may have some relation to this quality manual.

Table 1 - Related documents

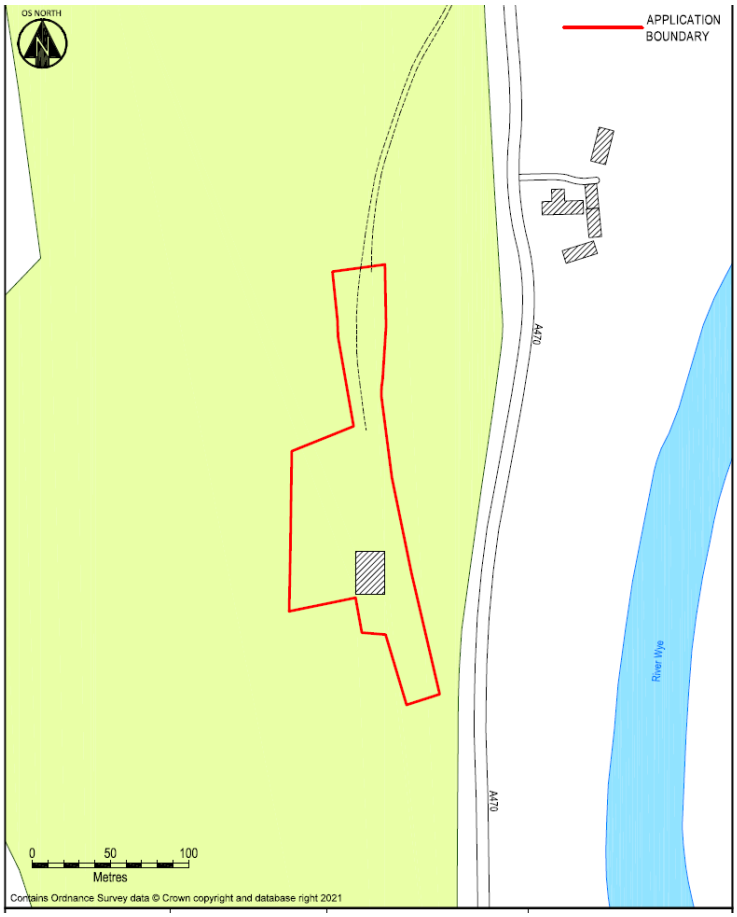
Document	Authority	Reference	Validity period/Issue
Waste Carriers License	National Resources Wales	Reg No. CBDU6031	10/05/2022
Exemptions Waste Recycling Facility	Environment Agency	WEX20995 (S2, U1, U8)	02/09/2019 - 01/09/2022
		WEX268032 (S2, U1)	08/03/2021 - 07/03/2024
		WEX254362 (S2, T5, U1)	14/10/2020 - 13/10/2023
		WEX259236 (S2, U1)	08/12/2020 – 07/12/2023
		WEX234480 (S2, U1)	02/03/2020 – 01/03/2023

4. Site Location

4.1.1 This document relates to all activities involving the recovery of inert wastes at Cwrtgwenddwr Wood recycling facility, all references to 'the site' in this document relate Cwrtgwenddwr Wood which holds an environmental permit (permit number: EPR/CB3396FF).

4.1.2 The site is located at Cwrtgwenddwr Wood Recycling Facility, A470, Erwood, Llanfaredd, Powys, Wales, LD2 3YN (Figure 1). The approximate national grid reference for the site is SO 07128 45963.

Figure 1 – Site Location Plan

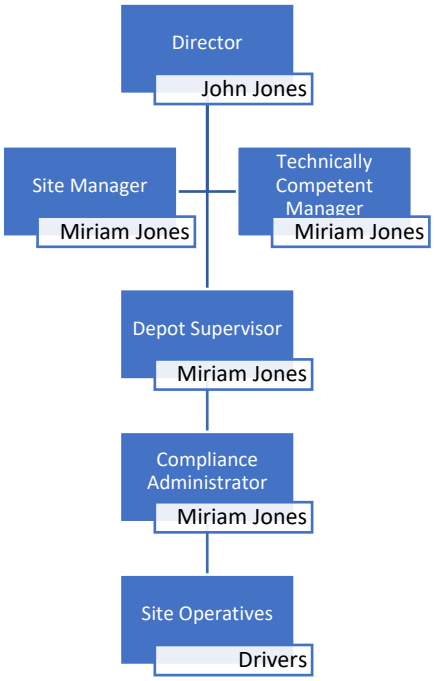


5. Organisation & Responsibilities

5.1 Organisational Structure

Figure 2 outlines the organizational structure in place at Cwrtgwenddwr Wood site.

Figure 2 – Organisational structure at Cwrtgwenddwr Wood site



5.2 Director

The Director has the following responsibilities:

- Overall responsibility of the Cwrtgwenddwr Wood site
- Liaising with the site manager regarding all major issues
- Review and auditing of FPC

5.3 Site Manager

The Site Manager has overall responsibility for recycling operations, which include:

- Liaison with the Depot Supervisor in relation to material quality output/input
- Health and Safety matters
- Ensuring all plant is adequately serviced and maintained
- Implementation and review of the Factory Production Control (FPC)
- Ensuring all documentation is complete including the reporting of non-conforming products
- Ensuring Products are tested and meet relevant European specification
- Carrying out weekly site inspections

5.4 Technically Competent Manager

The TCM has overall responsibility for the John Jones operation at the Cwrtgwenddwr Wood site and ensures that adequate staff, equipment and materials are available.

5.5 Compliance Administrator

The Compliance Administrator has the following responsibilities:

- Control/input of all waste/material movements.
- Monitoring of waste streams

5.6 Depot Supervisor

The Depot Supervisor has the following responsibilities:

- Removal of class x (non-conforming materials) during the production process
- Inspection of all stockpiles and processing equipment
- Liaising with the Site Manager if any discrepancies are found
- Informing the Site Manager of any maintenance needs of all plant used
- Stockpiling raw/recycled material into segregated areas
- Operation of all recycling operational plant
- Ensuring Waste Transfer notes are completed for all material/waste movements in and out of the site
- Maintaining the quarantined bay

5.7 Site Operatives

Site Operatives work under the overall direction of the Site Manager to implement the procedures of this Quality Manual.

6. Method Statement of Production

6.1 Waste Acceptance Criteria

Wastes that will be permitted at the operator's site are presented in the John Jones Civil Engineering & Groundworks Cwrtgwenddwr Wood EMS (Table 1.2). The waste acceptance criteria and waste management details are also outlined in the John Jones Civil Engineering & Groundworks Cwrtgwenddwr Wood EMS.

6.2 Waste Recovery Process & Equipment

The steps below outline John Jones' aggregates from waste production process. (Please refer to Appendix B for a more detailed process for specific products).

1. All suitable and accepted waste materials will be stockpiled into allocated areas based on their EWC code. If crushing is required, waste will be allocated to temporary storage prior to crushing.
2. Any foreign or non-conforming products will be moved to the quarantine bay.
3. Where necessary, foreign material (class x) will be handpicked from the stockpile and put into appropriate skips.
4. Where crushing is required, the waste will be fed into a suitable crusher via a loader then re-stockpiled.
5. The material will then be fed into a Static Screener, where a 50mm vibrating screen and 20mm deck (varies depending on the end product) will distribute products into particle size categories. Speed, angle of screen and size of screen will be altered, as required, to meet material specifications.
6. An additional screener will be utilised to increase the range of particle size where necessary.

7. All class x (non-conforming items) for example plastics and wood, will be handpicked from stockpiles.
8. All class x materials removed will be put into designated skips based on the material type. Waste from all skips will either be recycled or disposed of by a fully licensed operator.

6.3 Range of Products Produced

6.3.1 John Jones have the capability to produce a wide range of material classes at their Cwrtgwenddwr Wood site through use of screeners and crushers, to satisfy the demand to meet product specification needs. The screeners can screen to numerous particle size ranges based on the size of screens used. Table 2 below outlines the main product classes produced on site, although more classes can be produced subjected to client demand.

6.3.2 Other materials can be manufactured to order based on the design requirements of John Jones. If a specific material is required by the client, the site manager will update the quality manual with new materials quality controls.

6.3.3 All products produced comply with:

- Specification for highway works (SHW 500, 600 & 800)
- Unbound mixtures Specification BS EN 13285:2003
- Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction BS EN 13242:2002+A1:2007

Table 2 – Products produced at the John Jones Cwrtgwenddwr Wood site

Product	SHW Reference
Class 1A General Granular Fill	Series 600 Table 6/2
Class 6F5 Selected Granular Fill (coarse) - Capping	Series 600 Table 6/1 & 6/5
Type 1 Sub-base	Series 800 Clause 803, Table 8/5

7. Testing

7.1 General

7.1.1 The Depot Supervisor will visually inspect product compliance during the process. If any irregularities, such as oversize materials or excessive fines are found, it will be reported to the Site Manager immediately and appropriate action will follow, which may involve re-screening, crushing or hand picking. This will be recorded by the Depot Supervisor on daily process control sheets.

7.1.2 All laboratories used will be UKAS accredited.

7.1.3 Sampling will be carried out in accordance with BS EN 932-1.

7.1.4 Grading and quantities of samples will be done in accordance with Appendix F – Grading Compliance Sheet.

7.2 Class 1A General Granular Fill

1A is a well graded granular material used as a general fill. It consists of any material, or combination of materials, other than material designated as Class 3 in the Contract or recycled aggregate.

Table 3 - Testing requirements for class 1A

Property	Test Frequency	SHW Reference and requirement	Test Method
Grading	1 per week of production days	SHW 600 Table 6/5	BS EN 933-1
Composition	N/A	N/A	N/A
Water adsorption	N/A	N/A	N/A
Water soluble sulphate	N/A	N/A	N/A

Table 4 - Grading requirement for Class 1A

Sieve Size (mm)	Percentage by mass passing		
	Typical Grading	Specification	
		Min	Max
300	100	100	-
125		95	100
0.063		0	15

Table 5 - Particle Size distribution for Class 1A

Overall Grading	G_E
Size Designation	0/125
Maximum Fines	UF_{15}

7.4 Class 6F5 Selected Granular Fill (coarse) - Capping

6F5 is an unbound mixture that complies with BS EN 13285. It is generally used as a coarse capping layer imported onto site. It can contain any material or a combination of materials. John Jones 6F5 will be a mixture of: Crushed concrete, bricks, ceramics, tarmac, limestone & recycled aggregate. Our 6F5 will comply with SHW 600 and BS EN 13285 and will not contain: more than 50% of bituminous materials, tar, un-burnt colliery spoil, argillaceous rock or chalk.

Table 6 - Testing requirements for 6F5

Property	Test Frequency	SHW Reference and requirement	Test Method

Grading	1 per week of production days	SHW 600 Table 6/5	BS EN 933-1
Composition	1 per month of production working days	Not more than 1% class X	BS EN 933-11
		Less than 50% Class Ra	
		Bitumen content not more than 2.0% (not required if class Ra is 20% or less)	
Water adsorption	1 per year	WA_{24} NR	BS EN 1097-6
Resistance to fragmentation	2 per year	LA_{50}	BS EN 1097-2
Frost Heave	1 per year	≤15mm (if within 450mm from surface)	BS 812-124:2009

Table 7 - Grading requirement for 6F5

Sieve Size (mm)	Percentage by mass Passing		
	Typical Grading	Specification	
		Min	Max
125	100	100	100
80	93	75	99
40	67	50	90
20	42	30	75
10	28	15	60
2	14	0	35
0.063	9.5	0	12

Table 8 – Particle Size Distribution for 6F5

Overall Grading	G_E
Size Designation	0/80
Oversize Category	OC_{75}
Maximum Fines	UF_{12}

7.5 Type 1 Sub-base

John Jones offer two different variations of Type 1 crushed concrete which both comply with SHW 800 and BS EN 13285:

- Mix containing only clean crushed concrete
- Mix containing crushed concrete, crushed rock and recycled aggregates

Table 9 - Testing requirement for Type 1 unbound sub-base

Property	Test Frequency	SHW Reference and requirement	Test Method
Grading	1 per week of production days	SHW 600 Table 6/5	BS EN 933-1
Composition	1 per month of production working days	Not more than 1% class X	BS EN 933-11
		Not more than 25% Class Rg (glass)	
		Not more than 50% Class Ra	
Water adsorption	1 per year	WA_{24} NR	BS EN 1097-6
Freeze-thaw resistance (magnesium sulphate soundness)	1 per two years	MS_{35}	BS EN 1744-1
Resistance to fragmentation	2 per year	LA_{50}	BS EN 1097-2
Frost Heave	1 per year	≤15mm	BS 812-124:2009
California bearing ratio	1 per year	≥30%	BS1377-4:1990
Liquid and plastic limits	1 per month of production working days	Non-Plastic	BS 1377-2:1990

Table 10 - Grading requirement for Type 1 unbound sub-base

Sieve Size (mm)	Percentage by mass Passing		
	Typical Grading	Specification	
		Min	Max
63	100	100	100
31.5	90	75	99
16	50	43	81
8	50	23	66
4	20	12	53
2	10	6	42
1	5	3	32
0.063	2	0	9

Table 11 - Particle Size Distribution

Grading Category	G_C 32-0

8. Factory Production Control

John Jones' Factory Production Control (FPC) system is set up in accordance with Annex C of BS EN 1342:2002+A1:2007 to comply with the legal requirements of the European Construction Products

Directive. This FPC ensures that product characteristics are maintained, and non-conforming products are dealt with appropriately.

8.1 Responsibility & Management

Please refer to section 5.

8.2 Management Representative and Review

The Site Manager is the appointed person to ensure the FPC is maintained. The FPC will be audited and reviewed on a monthly basis by the Site Manager. The FPC will be held in the main office at John Jones.

8.3 Incoming waste materials

8.3.1 All waste received at Cwrtgwenddwr Wood site must be accompanied by a waste transfer note. All waste transfer notes will be recorded and kept for a minimum of two years.

8.3.2 John Jones will monitor waste streams and produce quarterly reports to National Resources Wales and other authorities upon request.

8.3.3 John Jones will only accept waste from approved/checked suppliers.

8.3.4 The following information is obtained as a minimum:

- Waste License or registration of exemption
- Waste carriers/broker registration details
- Material Details (WTN)
- Job Code (location of arising)
- Demolition or building contractors details/supplier details
- Date of demolition/arising/production

8.3.5 Location of arising, demolition or building contractors details/supplier details and date of demolition/arising/production, will only be required before the first load is accepted.

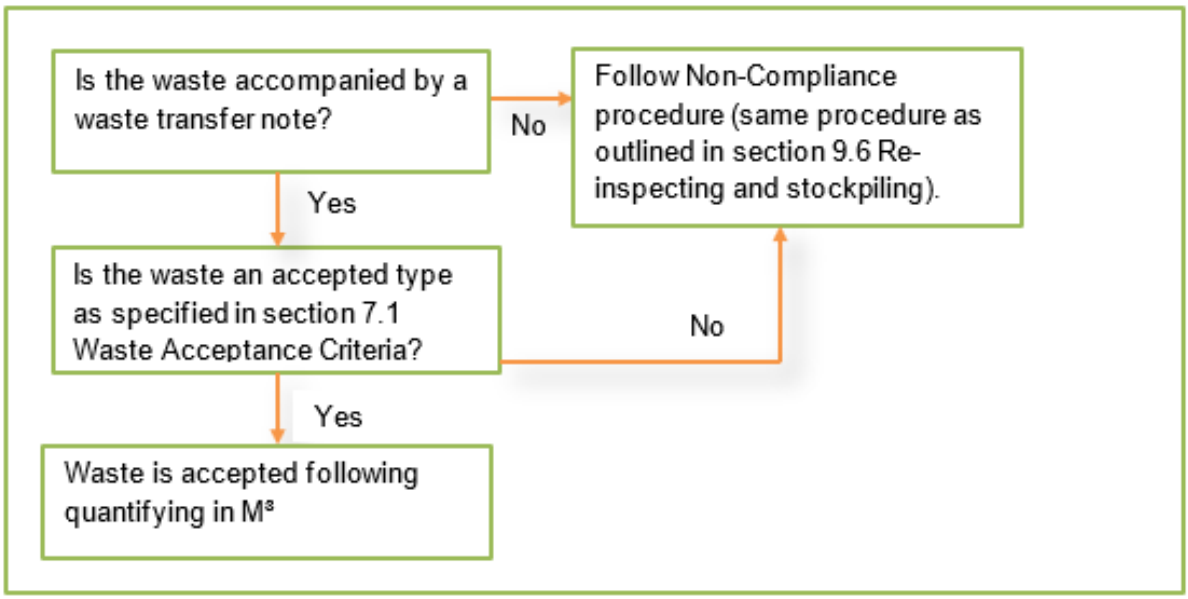
8.3.6 The person responsible for maintaining and recording the information is the Compliance Administrator (CA), who will ensure all WTNs are completed adequately and that they are maintained for the statutory time. WTNs will be posted, or handed in at reception, which will then be collected in bulk weekly by the CA.

8.4 Receipt of waste materials

8.4.1 The Depot Supervisor and/or Site Operatives/Drivers are responsible for inspecting the load on arrival. The Depot Supervisor is trained to John Jones procedures at accepting or rejecting incoming waste. The Depot Supervisor will ensure all WTNs are collected and stored at John Jones temporarily.

8.4.2 The procedure in Figure 3 is applied with relation to the acceptance of waste.

Figure 3 – Waste acceptance process at Cwrtgwenddwr Wood



8.5 Quantifying and Categorising

8.5.1 The Depot Supervisor and/or vehicle drivers will assess the load by estimating the value in m^3. Each load will be given a EWC code. EWC codes are located in MTN books.

8.5.2 Once the load has been categorised, it will be tipped in the corresponding stockpile. The feedstock categories are:

- Mixed CD& E Waste
- Concrete Waste
- Bituminous Bound Waste
- Bricks and Masonry
- Unbound Granular Materials (including Spent Railways Ballast)
- Trench Arising
- Secondary Materials

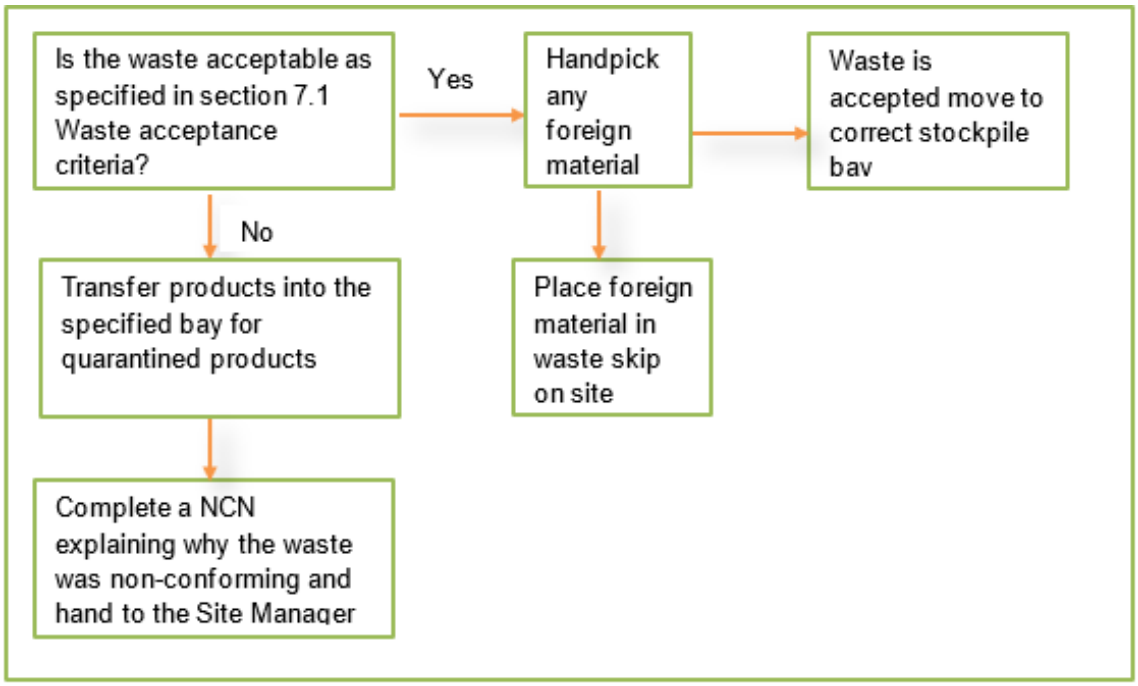
8.6 Re-Inspecting and stockpiling

8.6.1 All feedstock materials are separated, to avoid cross contamination. Each feedstock has an assigned area and stockpile.

8.6.2 All stockpiles are signed so any individual on site can identify the material/waste type.

8.6.3 During tipping, the load will be inspected by the Depot Supervisor and/or vehicle drivers. The following procedure in Figure 4, will be followed when tipping.

Figure 4 – Procedure for re-inspecting and stockpiling at Cwrtgwenddwr Wood site



8.6.4 All non-conforming products will be recorded on an NCN and stored at John Jones. These will be collected weekly by the Compliance Administrator, who will discuss with the supplier why the load was rejected, and the actions required to avoid any further rejections on future loads.

8.6.5 The NCN notes will be recorded and held for a minimum of 2 years.

8.7 Production

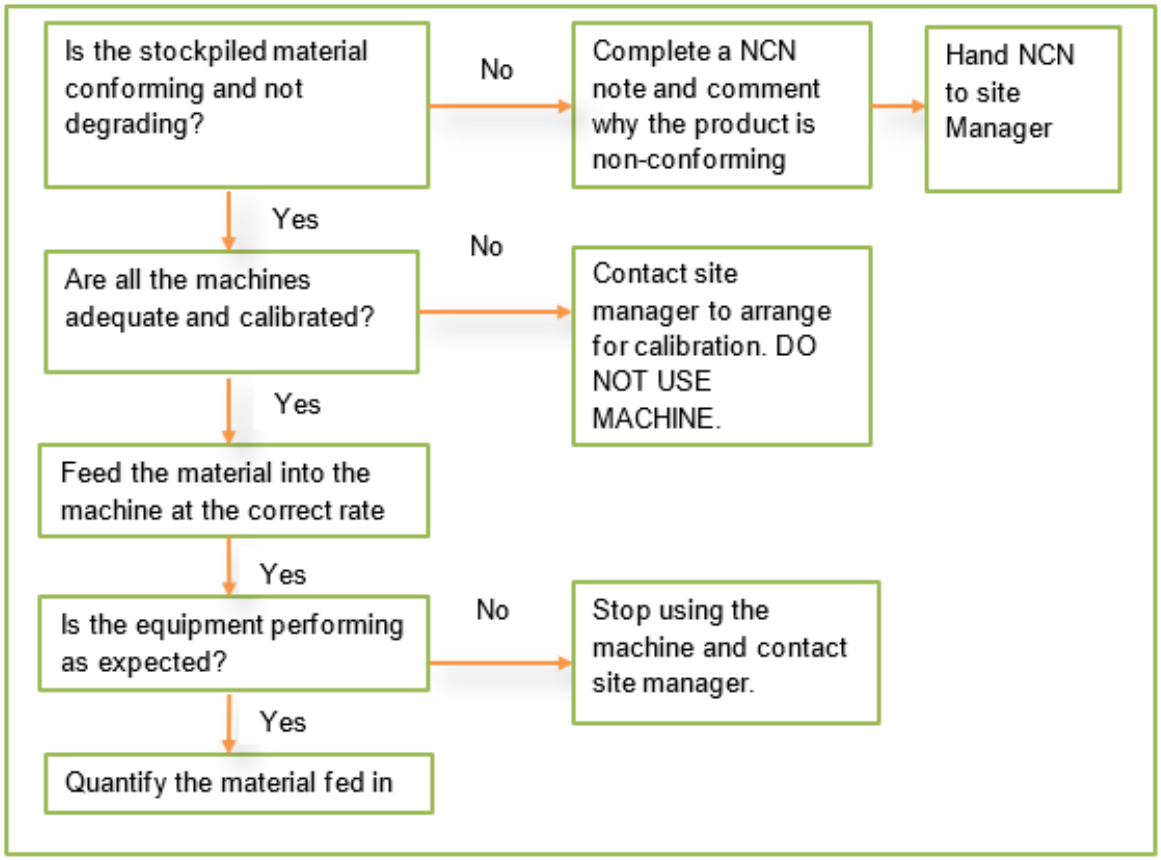
8.7.1 Before production, the Depot Supervisor is trained to inspect:

- The stockpiled material is not degrading before it is fed into the process
- The material is still acceptable
- The material is fed in at the right rate
- The material fed in is quantified
- The correct machine is being used
- The machine is calibrated
- The equipment is performing as expected.

8.7.2 Any non-conformant materials will be transferred to a quarantine bay, where it will be treated and sent back to the stockpile or, failing quality, back to the supplier or registered waste disposal site.

8.7.3 The procedure for production is summarized in Figure 5 below.

Figure 5 - Procedure for Production



8.7.4 Table 12 below summarizes the daily control process. Daily process control sheets will be completed each day by the Depot Supervisor and stored for a minimum of 2 years on site. A template of the daily process sheet can be found in Appendix E of this Quality Manual.

Table 12 - Daily Process Controls

Characteristic	Testing Procedure	Location of sampling/testing	Frequency	Remedial actions on non-conforming properties/materials
Deterioration	Visual Inspection	Stockpiled Material	Daily and during use	If deterioration will improve with time (i.e., moisture content too high) leave. Although if deterioration cannot be improved inform the site manager and move to non-conforming bays.
Oversize/Undersize material	Visual inspection	Stockpiled Material	Before use	Remove oversize material with riddle bucket before use or change screen size.

Acceptability	Apply acceptance criteria and inspect visually	Stockpiled Material	During use and arrival of waste	Reject non-acceptable materials
Class x materials (wood/plastic/metal etc.) no more than 1% in mass	Visual inspection	Stockpiled Material	Before/exit of screening plant	Remove class x materials by hand picking before/after use and move to appropriate waste skip.
Moisture content	Visual inspection	Stockpiled Material	Daily and before use	Leave to dry if moisture content seems too high. Or spray if moisture content is too low. The Site supervisor will test regularly for moisture contents
Feed Rate	Visual Inspection	Feeding station	Every 5 tonnes or if output is unusual	Inspect feeding station and speed up/slow feed rate. The angle of the initial screen can be changed if required.
Maximum and minimum size	BS EN 933-1	Exit of screening/crushing plant	Every 50 batches or if plant is acting unusual	Check the size of screens and check for any damage or malfunction to screener/crusher. Reprocess material or assign to a different product category.

8.8 Finished Products

8.8.1 The testing procedures are outlined in Section 7.

8.8.2 Any non-conforming products will be assessed by the Depot Supervisor. If the non-conforming products can be easily improved, it will be carried out by the Depot Supervisor and will then be subject to further testing. If the non-conforming product cannot be improved, it will be placed in the quarantine bay as specified in Section 8.6.

8.8.3 All product stockpiles will be segregated to prevent cross contamination and deterioration.

8.8.4 The Depot Supervisor/Site Manager will be responsible for categorising the products and ensuring they meet the BS EN 13242 specification.

9. References

9.1 Standard Publications

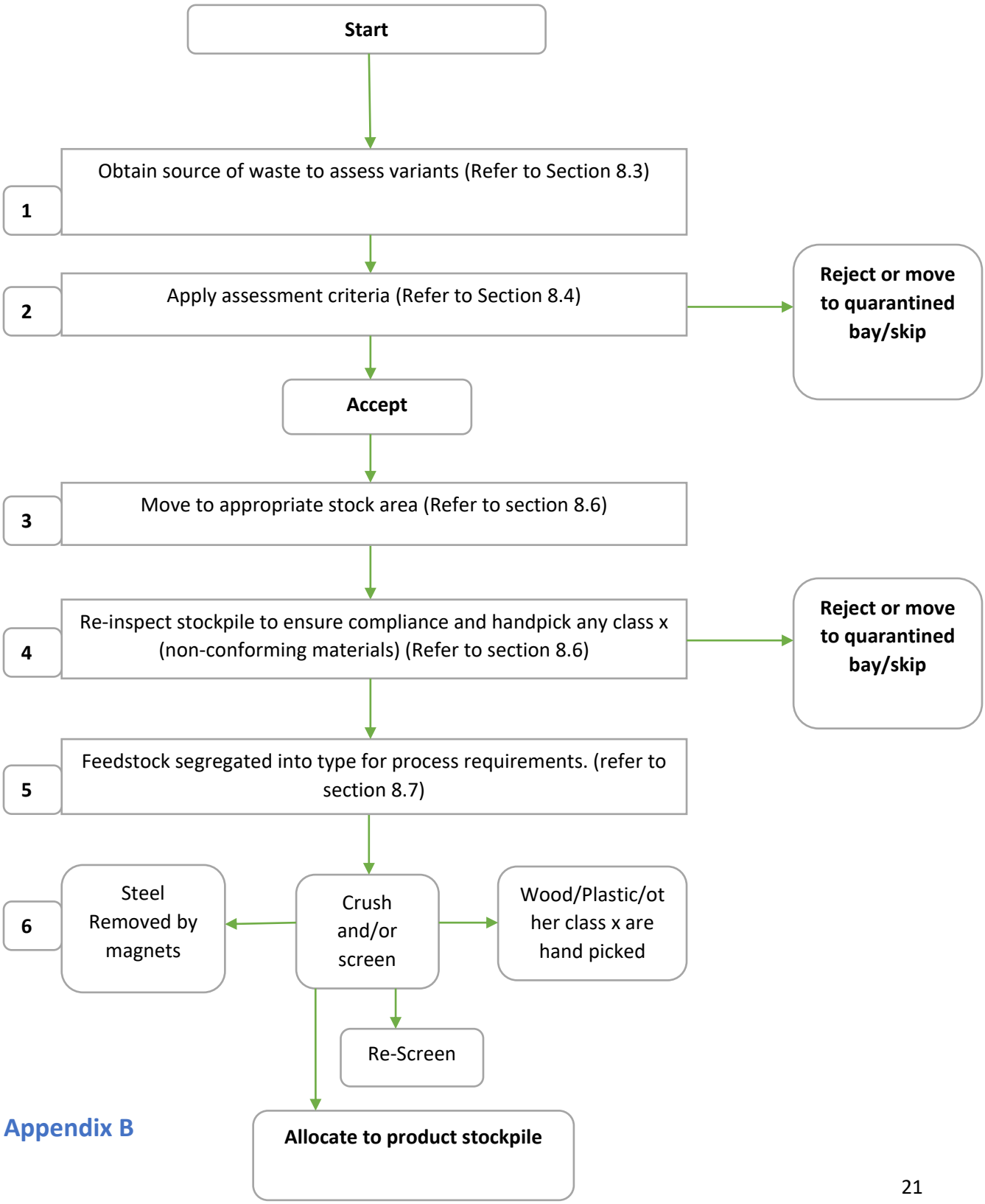
1. British Standards Institution (2002) Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction. BS EN 13242:2002+A1:2007.London
2. British Standards Institution (2010) Unbound mixtures - Specifications. BS EN 13285.London
3. British Standards Institution (2009) Testing aggregates Part 124: Method for determination of frost heave. BS 812-12.London
4. British Standards Institution (1997) Tests for general properties of aggregates Part 1. Methods for sampling. BS EN 932-1.London
5. British Standards Institution (1997) Tests for geometrical properties of aggregates Part 1: Determination of particle size distribution - Sieving method. BS EN 933-1.London
6. British Standards Institution (2009) Tests for geometrical properties of aggregates Part 11: Classification test for the constituents of coarse recycled aggregate. BS EN 933-11.London
7. British Standards Institution (2010) Tests for mechanical and physical properties of aggregates Part 2: Methods for the determination of resistance to fragmentation. BS EN 1097-2.London
8. British Standards Institution (2000) Tests for mechanical and physical properties of aggregates — Part 6: Determination of particle density and water absorption. BS EN 1097-6.London
9. British Standards Institution (2009) Tests for thermal and weathering properties of aggregates – Part 2: Magnesium sulphate test. BS EN 1367-2.London
10. British Standards Institution (1990) Methods of test for Soils for civil engineering purposes — Part 2: Classification tests. BS EN 1377-2.London
11. British Standards Institution (2009) Tests for chemical properties of aggregates Part 1:Chemical analysis. BS EN 1744-1.London
12. British Standards Institution (1990) Methods of test for Soils for civil engineering purposes — Part 4: Compaction-related tests. BS EN 1377-4.London

9.2 Other

1. WASTE AND RESOURCES ACTION PROGRAMME. The Quality Control Protocol for the production of aggregates from inert waste. Banbury: WRAP.
2. HIGHWAYS AGENCY. Manual of contract documents for highway works, Volume 1: Specification for Highway Works (SHW). London: TSO.

Appendix A

Generic flow chart for accepting and processing waste



Appendix B

John Jones Engineering & Groundworks method statement for the production of products

Recycled Type 1 803

1. The suitable material will first be screened and then enter the recycling process where the following will occur:
2. 75mm+ oversize material will be crushed to 40mm<.
3. All Foreign Material will be removed by hand.
4. This material will then be put back through the crushing plant and re-crushed to 40mm<.
5. The finished product will then be transferred into covered holding bays.
6. The finished product in the holding bays is now ready for dispatch and samples to be taken for testing.

Capping Material 6F5

1. The suitable material will first be screened and then enter the recycling process where the following will occur:
2. 75mm+ oversize material will be crushed to 80mm<.
3. All Foreign Material will be removed by hand.
4. The finished product will then be transferred into covered holding bays.
5. The finished product in the holding bays is now ready for dispatch and samples to be taken for testing.

Appendix C

Daily process control record

JOHN JONES
CIVIL ENGINEERING &
GROUNDWORKS LTD

DC01 - Daily Process Control record

Operator Name

Date

Guidance on control can be found in WRAP QP			Incoming waste		Production							
Time	Activity	Waste Type	Is the waste acceptable?	Estimation of quantity (M3)	Is the stockpile free from deterioration?	Is the stockpile material acceptable?	Are oversize/undersize parameters met?	Are Class x materials <1%?	Is feed rate Acceptable?	Are screened output sizes as expected?	Is the Moisture Content acceptable?	Is operational machinery working as expected?
06:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
07:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
08:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
09:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
10:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
11:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
12:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
13:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
14:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
15:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
16:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
17:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N
18:00			Y / N		Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N

Notes (If NO is answered for any section notes must be made of action, seek help from quality manual)

Appendix D

Non-conforming note template

Type Non-Conforming Identified	Visual		Sample Testing		
Date:					
Time:					
Name:					
Signature:					
Product Type:					
Quantity of Non-Conformance:					
Remedial Action Taken (Quarantine, Reprocessing, Disposal, Rejection):					
Operator charged with investigating the non-conformity:					
Results of the investigation on causes of non-conformance:					
Corrective Action Taken on causes of non-conformance:					
Date: _____			**Time:** _____		
Name: _____			**Signature:** _____		

Appendix E

Daily inspection sheet template – under development

Appendix F

Grading Compliance sheet

Size (mm)	% Needed				
	6F5	6C	Type 1	0/20mm Pipe Bedding	0/4mm Dust
Sample size (kg)	150	150	100	50	20
125	1				
80	9				
63			1		
40	15	Max size		Max size	
31.5			18	1	
20	15			88	
16			15		
10	25				
8			13		Max size
6.3		65			1
4		25	11		88
2	23	8	10		
1			23		
0.5		2			
0.063	12		9	11	11

Size (mm)	% Passing				
	6F5	6C	Type 1	0/20mm Pipe Bedding	0/4mm Dust
125	Max size	Max size			
80	75-99				
63			Max size		
40	50-90	0-100		Max size	
31.5			75-99	98-100	
20	30-75			80-99	
16			43-81		
10	15-60				
8			23-66		Max size
6.3		0-100			98-100
4		0-35	12-53		80-99
2	0-35	0-10	6-42		
1			3-32		
0.5		0-2			
0.063	0-12		0-9	0-11	0-11

Environmental Risk Assessment

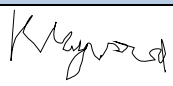
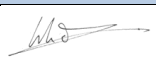
John Jones Civil Engineering & Groundworks Ltd

Cwrtgwenddwr Wood Recycling Facility

Cwrtgwenddwr Wood Recycling Facility,
Cwrtgwenddwr Wood,
A470,
Builth Wells,
LD2 3YR

Document Title	Environmental Risk Assessment
Revision	6.0
Date	17/07/2023
Document Reference	John Jones – ERA 17-7-23
Prepared For	John Jones Civil Engineering & Groundworks Ltd
Authored By	MTS Environmental Ltd

Quality Control

Revision No.	Date Revised	Description of changes	Authored By	Sign Off	Approved By	Sign Off
1.0	06/21	Original Draft	Kasia Haywood		Luke Bridges	
2.0	13/12/21	Assessment of risks affecting the River Wye	Kasia Haywood		Luke Bridges	
3.0	06/07/22	Reassessment based on new drainage system	Kasia Haywood		Luke Bridges	
4.0	14/12/22	Amendments based on permit variation	Kasia Haywood		Luke Bridges	
5.0	09/02/23	Amendments due to drainage changes	Kasia Haywood		Luke Bridges	
6.0	17/07/23	Amendments based on NRW request	Kasia Haywood		Luke Bridges	

Contents

1. Introduction

John Jones Civil Engineering & Groundworks Ltd is applying for a permit variation to their Tier 2 Bespoke Environmental Permit SR2010 No12 (permit number: EPR/CB3396FF), for its site at Cwrtgwenddwr Wood, A470, Erwood, Llanfaredd, Powys, Wales, LD2 3YN. The purpose of this application is to vary the Tier 2 permit to allow a SUDS drainage system and remove the requirement to tanker surface water off site. The permit allows for the treatment of waste to produce soil, soil substitutes and aggregate. The main activities on site will include crushing and screening soils and aggregates sourced from local construction and highways industries.

This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risks to the environment and human health specifically related to the activities undertaken at the John Jones Cwrtgwenddwr recycling site. This report will identify any significant risks and detail the measures that John Jones Engineering and Groundworks Ltd will adopt to appropriately manage any risk of pollution.

2. Environmental Risk Assessment

2.1. Methodology

This report has been prepared following the risk assessment guidance provided by National Resources Wales for an SR2010 No.12 activity. It specifically relates to the potential risks associated with odour; noise and vibration; fugitive emissions and accidents and incidents.

This risk assessment addresses the above risks and is based on the following methodology:

- Identification of potential risks
- Identification of all potential receptors to these risks
- An assessment of each risk type.

The Environmental Risk Assessment (Appendix A) assesses the risks to the environment and human health from activities carried out at the John Jones site and identifies the pollutant linkage i.e., source – pathway – receptor for each risk type.

2.2. Potential Hazards

The potential hazards resulting from the activities carried out at the John Jones Cwrtgwenddwr site have been considered, as provided in Appendix A, and are summarised below:

- Odour:
  - Waste materials
- Noise and vibration:
  - Engine noise from vehicles
  - Use of reverse vehicle warnings
  - Use of plant and machinery
- Fugitive emissions:
  - Particulate matter i.e. dust
  - Scavenging birds, pests, and vermin

  - Mud and litter
- Accidents:
  - Fire
  - Leaks and spillages
  - Flooding
  - Unauthorised access

2.3. Pathways

The pathways identified for each risk type are shown in Table 1:

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Air
Noise and vibration	Air
Fugitive emissions	Air
Groundwater	Surface water run-off
Accidents	Air
	Surface water run-off
	Infiltration
	Percolation

2.4. Receptors

Receptors within 1km of the application site have been identified and are shown in Table 2 below, those classed as sensitive are highlighted in bold, and in the Sensitive Receptor Plan (Appendix B). The main pathway for the identified sources is the air and as such, atmospheric conditions can affect dispersion rates and the potential risk. Therefore, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 2.

Table 2: Location of potential receptors in relation to waste operations

Receptor	Distance from site (m)	Direction
Residential		
Sheep Wash	**380m**	**South East**
Cwrt-Gwenddwr	**100m**	**North East**
Properties on A470	500m	North
Tyrcelyn Halt	520m	South East
Upper Pentywyn	**445m**	**West**
Lower Pentywyn	**350m**	**North West**
Erw'rhenallt	725m	South West
Woodland and Waterways		
River Wye (Special Area of Conservation and Site of Special Scientific Interest)	**150m**	**East**
Cwm Dyfnant	340m	South
Broadleaved woodland	0-1000m	All directions
Llandeilo, Rhulen and Llanbedr Hills SSSI	**475m**	**East**
River Wye (Tributaries) SSSI	1000m	North East
Coed Aberedw SSSI	900m	North East
Ancient Woodland	**55m**	**East and West**

Small surface watercourses	On site	On site
Sensitive Land Uses		
St Mauritius Church	800m	North
Chapel Farm	600m	North East
Bedw Farm	765m	West
Industrial/Commercial		
Kite Hill Yurts	850m	West
Public Rights of Way		
Public Bridleway (off the A470)	250m	North
Public Footpath	470m	West
Public Footpath (off the B4567)	420m	East
Public Bridleway	800m	East
Infrastructure/utilities		
A470	50m	East
B4567	375m	East
Species		
Important Plant Areas (Plantlife)	150m	East
Rare Lichens and Bryophytes on Ash and other trees	0-1000m	All directions
Protected fish and eels	**150m**	**East**
Protected mammals	0-1000m	All directions
Flood Risk		
Flood risk from surface waters	On site	On site

2.5. Receptor Risk Assessment

There is a small surface watercourse which passes through the site near the entrance (a distance from the processing area), this has been considered as a sensitive receptor but it has been ducted to bypass the site and prevent any site run off entering the stream to eliminate the risk of contamination downstream. As such this receptor is at low risk. There are two other small surface watercourses, one which passes along the southern border of the site and another which passes perpendicular ~60m north of the site boundary. These are also sensitive receptors but considered at low risk as the on site drainage system will catch any surface water runoff in the entrance aco drain and southern filter drain before it soaks away to the ground. The low risk activities on site and the mitigation measures outlined in this document ensure there is a very low risk to surface water as outlined in the risk assessment below in Appendix A.

The rainwater run off from the quarry face which lands at the back of the site (the western edge) is also considered a sensitive receptor but as the drainage system ensures this drains off site without coming into contact with site operations or run off, this risk is considered low.

The site is not within a source protection zone. It is located in an area that has a very low risk of flooding from rivers or the sea. However, there are limited areas of the site which have a high flood risk from surface water and small watercourses, but this does not extend across the entire site. This is mitigated by culverting a section of the largest surface watercourse so it can flow naturally across the site. The other two watercourses are at the site borders and much smaller. Surface run off will be caught in the drainage system before reaching these receptors so will not increase risk of flooding or water levels.

With the mitigation measures outlined in Appendix A of this risk assessment, the flood risk can be appropriately managed and not further increased by site operations.

The site is surrounded by broadleaved woodland, Receptor 10, and is also located 150m away from an area classed as 'Important Plant Area', neither of which are classed as a high priority or protected habitat, so they have not been classed as sensitive receptors. Site operations have the potential to cause ecological stress within the plant community in these areas, especially the rare lichens and bryophytes and protected mammals, Receptors 26 and 28. However, any potential damage will be mitigated by the site being located in a quarried-out section of the hill so the cliff walls which surround the site act as a container. The mitigation measures outlined in this document and the low risk nature of the site activities will prevent any negative impacts on these protected species.

Sheep Wash, Cwrt-Gwenddwr, Lower Pentywyn and Upper Pentywyn (Receptors 1, 2, 5 and 6 respectively) are all located within 500m of the site so are considered sensitive receptors as they are susceptible to the adverse effects of exposure to site operations. However, the distance between the site and the properties forms a potential buffer zone. The trees surrounding the site and the cliff walls on the site perimeter will also act as a barrier to prevent fugitive emissions from leaving the site and affecting the properties. In addition, the prevailing wind moves to the north east from the site (Figure 2), only one of these sensitive receptors, Cwrt-Gwenddwr property, is in this direction and so fugitive emissions are unlikely to be carried towards the remaining receptors which are located to the west and south east. Adding to this, no visible pollutants are permitted to leave the boundary of the site.

The residential properties within 1000m of the site (Receptors 3, 4 and 7) are situated over 500m away from the site and not to the north east, the direction of the prevailing winds. Any fugitive emissions from the site are unlikely to spread to these receptors due to their proximity and location. The site is also protected by established vegetation and cliff walls which will act as a screen to prevent any fugitive emissions from leaving the site boundary.

The River Wye (Upper Wye) SSSI, Cwm Dyfnant and River Wye (Tributaries) SSSI (Receptors 8, 9 and 13) are waterways located 150m, 340m and 1000m to the east, south and north east of the site respectively. The River Wye (Upper Wye) SSSI is considered to be a sensitive receptor as it is a more established waterway whereas Cwm Dyfnant is often dried up and only a small tributary. The River Wye (Tributaries) SSSI is also not considered sensitive as it is located 1000m from the site. Fugitive emissions could cause potential negative environmental impacts on the plant and animal communities at these receptors, in particular the protected fish and eels in the River Wye (Receptor 27). However, no emissions are permitted to leave the site and will be prevented from doing so with the mitigation procedures set out in this document, the site specific management plans and on-site drainage system. No emissions will be blown to these receptors on the prevailing winds which move to the north east. Due to the proximity between these receptors and the site along with the vegetation and cliff walls surrounding the site, no emissions will reach these receptors to cause any adverse effects.

There are two other SSSIs located within 1000m of the site: Llandeilo, Rhulen and Llanbedr Hills, and Coed Aberedw (Receptors 11 and 13). Llandeilo, Rhulen and Llanbedr Hills SSSI is considered a sensitive receptor due to its proximity 475m from the site, whereas Coed Aberedw is further away so not

considered sensitive. The mitigation measures outlined in this document and site-specific management systems will prevent any adverse impacts on these receptors.

There are two farms: Chapel and Bedw farm (Receptors 16 and 17), located 600m and 765m from the site and are at medium risk as emissions could affect the animals and people undertaking activities/living there. However, due to the distance between the site and the cliff walls that protect the site boundary, it is highly unlikely that emissions will escape the site and reach these receptors.

There is a church and a yurt site (Receptors 15 and 18) located 800m and 850m from the site, respectively. The yurt site is at a medium risk as it involves outdoor activities so emissions could affect the people involved. Emissions from the site will not be spread by prevailing winds to these receptors. The likelihood of emissions reaching these receptors is extremely low with the abatement measures identified within Table A3 in Appendix A of the Environmental Risk Assessment, alongside the protection given by the vegetation and cliff walls surrounding the site which act as a screen for emissions exiting the site, alongside the distance between the two.

There are multiple public footpaths and bridleways (Receptors 19-22) located 250-800m from the western site boundary. Receptors 21 and 22 are both to the east of two public highways which act as a barrier between the paths and the site. No emissions will escape from the site and effect these paths due to the cliff walls surrounding the site, the distance between the receptors and the site, and the abatement controls outlined in this document. Supporting this, the prevailing winds blow to the north east, of which none of these receptors are located.

There are many wooded areas, farmland and open spaces within 1000m of the site that are not marked on the sensitive receptor plan in Appendix B as they are considered low risk or low sensitivity.

2.6. Risk Assessment

The Environmental Risk Assessment (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on nearby receptors. This is achieved by fulfilling the following objectives:

- Identify the location and nature of each hazard
- Identify the specific receptors potentially at risk and assess the sensitivity of each receptor
- Provide an assessment of the risk posed to each sensitive receptor
- Identify management and monitoring techniques to remove or mitigate the risk
- Provide recommendations for more detailed assessments where necessary.

3. Summary

The Environmental Risk Assessment indicates that if the appropriate outlined management techniques are implemented at the site to protect nearby sensitive receptors, the proposed activities as part of the permit application will have no significant impacts in terms of odour, noise and fugitive emissions, and the likelihood of accidents is minimal.

Appendix A – Environmental Risk Assessment

Table A1: Odour Risk Assessment and Management Plan

What is the risk?			**Managing the risk**	**Assessing the risk**		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Odorous Waste Types	Local population in residential dwellings and sensitive land uses listed in Table 2 Protected species SSSIs Public footpaths Site Staff	Air transport then inhalation	Permitted waste types stored onsite are not putrescible and so have a low odour potential. There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. Details of the waste acceptance procedures are provided in the Environmental Management System (EMS). All site operatives will be vigilant regarding identifying non-compliant wastes and any non-conformances or odour issues will be reported to the Site Manager.	Very unlikely as the waste types accepted on site do not give off odour unless heated and the material will be stored at ambient temperature. Work will be within the effective operational capacity of the site to minimise prevent build-up of waste.	Odour annoyance and complaints	Low

Table A2: Noise and Vibration Risk Assessment and Management Plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Noise and vibrations from loading and unloading of waste	Local population in residential dwellings and sensitive land uses listed in Table 2 Protected species SSSIs Public footpaths Woodland	Air and vibration	All noise generating activities will be undertaken between the hours of 07:00 to 18:00 Monday to Friday and occasionally 07:00 to 13:00 on Saturdays, except for emergency repairs. No operations would take place on Sundays or recognised Public Holidays. All plant and machinery will have effective silencers where practicable and will be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. The loading/unloading of wastes will be undertaken in a controlled manner to keep noise/vibration to a minimum. Vehicles will be directed by site operatives to minimise the drop height when depositing loads at the site. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. The site is enclosed within cliff walls, which will act as a noise barrier and prevent noise from travelling off site. There is also established vegetation and trees surrounding the site. Noise and vibration will be managed in accordance with the Noise and Vibration Management Plan prepared for the site.	Intermittent noise disturbance	Noise annoyance and complaints	Low
Vehicle movements on site	Local population in residential dwellings and sensitive	Air	Loads will only be delivered to the site during working hours (07:00 to 18:00 Monday to Friday and occasionally 07:00 to 13:00 on Saturdays). There is a designated haul road system on site to reduce the need for reversing and traces the most efficient path across the site.	Intermittent during operating hours	Intermittent noise and vibration disturbance	Low

	land uses listed in Table 2 Protected species SSSIs Public footpaths Woodland		The delivery of waste will take place in a controlled manner to keep noise to a minimum. All plant and machinery will have effective silencers where practicable and will be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. An anti-idling policy ensures that all equipment and vehicles when not in regular use shall be switched off. The Site Manager will be responsible for ensuring the above measures are implemented. All noise generated by vehicle movements will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Noise and vibration will be managed in accordance with the Noise and Vibration Management Plan prepared for the site.			
Use of plant and machinery.	Local population in residential dwellings and sensitive land uses listed in Table 2 Protected species SSSIs Public footpaths	Air	All noise generating activities will take place during working hours (07:00 to 18:00 Monday to Friday and occasionally 07:00 to 13:00 on Saturdays), except for emergency repairs. All plant and machinery will have effective silencers where practicable and will be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. All equipment and vehicles, when not in regular use, shall be switched off. The Site Manager will be responsible for ensuring the above measures are implemented. All noise generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Noise and vibration will be managed in accordance with the Noise and Vibration	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Low

	Woodland		Management Plan prepared for the site.			
Noise from reversing vehicle warnings	Local population in residential dwellings and sensitive land uses listed in Table 2 Protected species SSSIs Public footpaths Woodland	Air	All noise generating activities will take place during working hours (07:00 to 18:00 Monday to Friday and occasionally 07:00 to 13:00 on Saturdays) except for emergency repairs. There is a designated haul road system on site to reduce the need for reversing and traces the most efficient path across the site. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Vehicles will be fitted with push alarms in replace of loud reversing beeping alarms.	Intermittent during operating hours.	Intermittent noise disturbance.	Low
Noise from processing of waste materials (crushing and screening)	Local population in residential dwellings and sensitive land uses listed in Table 2 Protected species SSSIs	Air	All noise generating activities will take place during working hours (07:00 to 18:00 Monday to Friday and occasionally 07:00 to 13:00 on Saturdays) except for emergency repairs. Screening activities will not generate levels of noise above that originating from the surrounding roads, commercial and industrial area. Drop heights will be limited when moving materials. Plant and machinery will be orientated to ensure noise travels into the centre of the site instead of to the outer perimeter to reduce noise spreading off site. The crusher and screener will be orientated with the quietest side facing towards the residential properties.	Intermittent during operating hours	Intermittent noise disturbance	Low

	Public footpaths Woodland		All plant and equipment will be switched off when not in regular use. Crushing and screening will be done on a campaign basis, only once sufficient material has accumulated to avoid on-off use. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. The site is enclosed within cliff walls, which will act as a noise barrier and prevent noise from travelling off site. There is also established vegetation and trees surrounding the site. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Noise and vibration will be managed in accordance with the Noise and Vibration Management Plan prepared for the site. Crushing will be carried out on a campaign basis during a limited number of weeks per year.			

Table A3: Fugitive emissions risk assessment and management plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
To Air						
Dust emissions from vehicle movements	Local population in residential dwellings and sensitive land uses listed in Table 2. Woodlands and waterways Protected species SSSIs Site Staff Users of roads listed in Table 2	Air transport then deposition	Wastes being delivered to the site will be covered or sheeted to prevent the generation of dust while the waste is in transit. The purpose of the site is to produce aggregates and the material stored on site will mainly be aggregates which have had the fines removed thus reducing their potential as a dust source. Careful observation of stockpiles containing materials that still contain fines will be carried out. Vehicle speeds will be limited onsite and the access road to 5mph to prevent re-suspension and movement of dust. All equipment and vehicles when not in regular use shall be switched off to minimise the risk of dust emissions that may arise from idling. The implementation of a dust suppression system including the use of a mobile bowser and hose pipe system used to dampen down any dusty waste on site and the maintenance of the site surface. The site is enclosed by cliff walls and trees to screen any dust emitted during site activities and act as a dust defence. The site benefits from a mobile bowser which can supply water for damping down and dust suppression. This will be filled by tankering water on to site or using water from the underground holding tank.	Unlikely due to measures in place	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment.	Low

			There is a designated haul road system on site to reduce the need for reversing and traces the most efficient path across the site. The Site Manager undertakes a daily visual assessment of dust levels, and all site operatives will be vigilant and report any problems to the Site Manager.			
Dust emissions generated during unloading of waste from HGVs.	Local population in residential dwellings and sensitive land uses listed in Table 2. Woodlands and waterways Protected species SSSIs Site Staff Users of roads listed in Table 2	Air transport then deposition	A mobile bowser and hose pipe system will be used to dampen the site surface and storage bays if necessary. The loading/unloading of wastes will be undertaken in a controlled manner to keep dust emissions to a minimum. Drop heights will be minimised to reduce the generation of dust whilst the waste is being handled. The surrounding cliff walls will act as a screen for dust so no dust escapes from the site boundary. Established vegetation surrounds the site which acts as a dust barrier and screens any dust from site operations. The mobile bowser can access all surfaces on site to be used for damping down and dust suppression. The Site Manager will undertake a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager. Operations will temporarily cease when winds are likely to generate dust emissions from wastes and materials.	Dust could potentially reach nearby properties when a strong wind blows in their direction. Management actions should prevent this happening	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment.	Low
Dust from haul roads	Local population in residential dwellings and sensitive land uses listed in Table 2.	Air transport then deposition	The use of modern plant and regular maintenance shall be practiced to reduce emissions. The implementation of dust suppression systems including the	Unlikely due to measures in place	Local nuisance i.e. dust on cars, clothing, and	Low

	Woodlands and waterways Protected species SSSIs Site Staff Users of roads listed in Table 2		use of a mobile bowser in high activity waste processing areas, the hosing of vehicles where necessary and regular maintenance of haul roads with a jet wash. The site will benefit from a jet wash hose pipe which is used by HGV's before they leave the site. This will minimise the risk of dust emissions on the haul road. There is a designated haul road system on site to reduce the need for reversing and traces the most efficient path across the site. The cliff walls surrounding the site will act as a screen for dust so no dust escapes from the site boundary. The site benefits from a mobile bowser which can supply water for damping down and dust suppression. This will be filled by tankering water on to site or using water from the underground holding tank. Dust will be managed in accordance with the site-specific Dust Management Plan. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.		vegetation.	
Dust emissions from the processing of waste materials (crushing and screening)	Local population in residential dwellings and sensitive land uses listed in Table 2. Woodlands and waterways Protected species	Air transport than deposition	The implementation of a dust suppression system including the use of a mobile bowser and hose pipe system used to dampen down any dusty waste on site and the maintenance of the site surface. Plant and machinery will be orientated to ensure dust travels into the centre of the site instead of to the outer perimeter to reduce dust spreading off site. The cliff walls around the site and the surrounding vegetation will act as a screen for dust so no dust escapes from the site	Unlikely due to measures in place	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment. .	Low

	SSSIs Site Staff Users of roads listed in Table 2		boundary. All plant and equipment will be switched off when not in regular use. Crushing activities will only operate on a campaign basis during a limited number of weeks per year. The site benefits from a mobile bowser which can supply water for damping down and dust suppression. This will be filled by tankering water on to site or using water from the underground holding tank. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager			
Release of particulate matter (dusts), vapours and polluting gases	Local population in residential dwellings and sensitive land uses listed in Table 2. Woodlands and waterways Protected species SSSIs Site Staff Users of roads listed in Table 2	Air transport then inhalation	Permitted waste types do not include dusts, powders or loose fibres and waste is not typically dusty unless it is stored during prolonged dry periods when damping down is carried out where required. Hazardous wastes are not permitted on site, only inert and non-hazardous materials are on site that do not release polluting gases. The potential sources of fugitive emissions to air have been identified and a Dust Management Plan has been prepared to prevent any potential dust emissions from reaching any nearby receptors. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager	Unlikely due to measures in place and no hazardous wastes permitted on site	Respiratory illness including. lung cancer and mesothelioma.	Low

To Water						
Contaminated rainwater run-off.	Surface water and groundwater Waterways listed in Table 2 SSSIs Protected species in waterways	Water	Permitted waste types are only inert and non-hazardous, they do not include hazardous wastes or those in sludge or liquid form. Any waste types stored in open stockpiles are inert and so any run-off that is generated on site is unlikely to be contaminated. The site activities are very low risk. The site benefits from a sustainable drainage system where surface water run off drains into a filter drain connected to a full retention interceptor connected to a holding tank. This then drains into a filter drain to allow non-contaminated water to filter back into ground with no risk of contamination. No hazardous wastes are permitted on site, this prevents the leaching of contaminants into groundwater. The small stream across the entrance of the site is ducted to bypass the site and rainwater run off from the quarry face at the back of the site is also collected in a perforated pipe to drain naturally off site without coming into contact with any site operations. No operations occur at the southern and northern borders where there are two additional small surface watercourses nearby, and no site surface water will drain into these as it will be captured by the northern and southern drains. In the event of a spill, emergency procedures as outlined in the EMS will be followed. The holding tank has a stop-off valve to allow discharge to the filter to be prevented in the event of a spill. Fuel will be stored in a double bunded and locked tank, following strict Environmental Law to reduce chances of fuel spills.	Very unlikely due to permitted waste types and sustainable drainage system	Contamination of groundwater surface water bodies	Low

			All wastes will be inspected on arrival, any non-conforming or non-permitted wastes will be stored in the designated quarantine skip located at a distance from other waste. All quarantined waste will be removed from site within 5 working days to reduce any potential contamination from the waste. There are strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS.			
Run-off containing high levels of silt	Waterways listed in Table 2 (particularly the River Wye) SSSIs Protected species in waterways	Water Site run-off	Permitted waste types are only inert and non-hazardous so any silt will not be contaminated. No hazardous wastes are permitted on site, this prevents the leaching of contaminants into groundwater. All wastes will be inspected on arrival, any non-conforming or non-permitted wastes will be stored in the designated quarantine bay located at a distance from other waste. All quarantined waste will be removed from site within 5 working days to reduce any potential contamination from the waste. There are strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. A strict housekeeping regime will be followed to ensure no dust, debris or litter is found on the surface of the site. The site has a permeable surface so rainwater will	Very unlikely due to the sustainable drainage system	Contamination of local watercourses with silt laden run off	Low

			percolate naturally into ground and only excess surface water will enter the drainage system. This reduces the silt levels as an impermeable surface would increase run off rates and therefore silt. Silt will naturally stay on the ground instead of entering the drainage system. The site has a sustainable drainage system including all site run off draining into a full retention interceptor, holding tank and finally a filter drain to prevent silt from leaving the site and entering any nearby watercourses. The system slows down drainage and provides opportunity for silt to be trapped in the filter drain. The small stream across the entrance of the site is ducted to bypass the site and rainwater run off from the quarry face at the back of the site is also collected in a perforated pipe to drain naturally off site without coming into contact with any site operations. No operations occur at the southern and northern borders where there are two additional small surface watercourses nearby, and no site surface water will drain into these as it will be captured by the northern and southern drains.			
Pest/Scavenging Birds						
Birds and pests	Local population in residential dwellings, sensitive land uses, and woodlands listed in Table 2. Protected species SSSIs	Air transport and over ground	Permitted wastes stored onsite are not putrescible and so are not attractive to pests or scavenging birds. The site has a secure office/storage barn to prevent the entry of animals. The boundary of the site is surrounded by trees and vegetation to blend into the existing environment and not attract any birds or pests.	Very unlikely due to the measures in place	Nuisance to local receptors within 1km of the permit boundary.	Low

			There are strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. The Site Manager will undertake regular reviews of pests and scavenging birds at the site. All site operatives will be vigilant and report any problems to the Site Manager.			
Mud						
Mud from vehicle movements	Users of local highways	Tracked on vehicle wheels.	The use of a jet wash hose on site used to wash any muddy vehicles. If mud is deposited on the access road and/or highway then a road sweeper will be employed if necessary. All vehicles exiting the site would be checked for exterior mud or debris. The site benefits from an operational jet wash which will be used on any exiting HGVs to remove any mud or debris. The amount of mud on local roads will be monitored daily by site operatives.	Unlikely due to measures in place.	Local nuisance. Mud on roads is unsightly and can increase the likelihood of road traffic accidents.	Low
Litter						
Litter	All receptors listed in Table 2.	Air transport then deposition	Waste types received by the site generally do not contain litter. Operatives will be vigilant, and any litter reported will be removed immediately. All incoming loads will be sheeted and remain sheeted until they are ready to be tipped. The site is surrounded by cliff walls that act to prevent the escape of any litter. There are strict waste acceptance procedures in place at the	Unlikely due to measures in place.	Local nuisance	Low

			site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. Working areas will be regularly cleared and inspected to minimise litter. Housekeeping measures are in place during operating hours.			

Table A4: Accident and Incident Risk Assessment and Management Plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Fire or failure to contain firewater	Air transport then inhalation or deposition Groundwater and surface water. Local residents listed in Table 2 Woodlands and waterways SSSIs Protected species in waterways	Infiltration and contamination of surface water	The risk of fire is considered to be low as the proposed waste types are not combustible and no waste shall be burnt on site. The use of welding/cutting tools (tools with a naked flame) are sanctioned first by the site manager/competent person. All site operatives are required to recognise signs of smouldering waste at the point of reception. Such wastes shall remain in the container and removed to a safe area. The site manager shall be informed. All wastes will be inspected on arrival, any non-conforming, nonpermitted or combustible wastes will be stored in the designated quarantine bay located at a distance from other wastes. All quarantined waste will be removed from site within five working days to reduce any potential fires caused by waste. There will be strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. The site benefits from a sustainable drainage system to contain any firewater. This includes a holding tank with a stop-off valve to prevent any firewater from escaping the system. The small stream across the entrance of the site is ducted to bypass the site and rainwater run off from the quarry face at the back of the site is also collected in a perforated pipe to drain naturally off site without coming into contact with any	Unlikely	Contamination of local groundwater and/or surface water.	Low

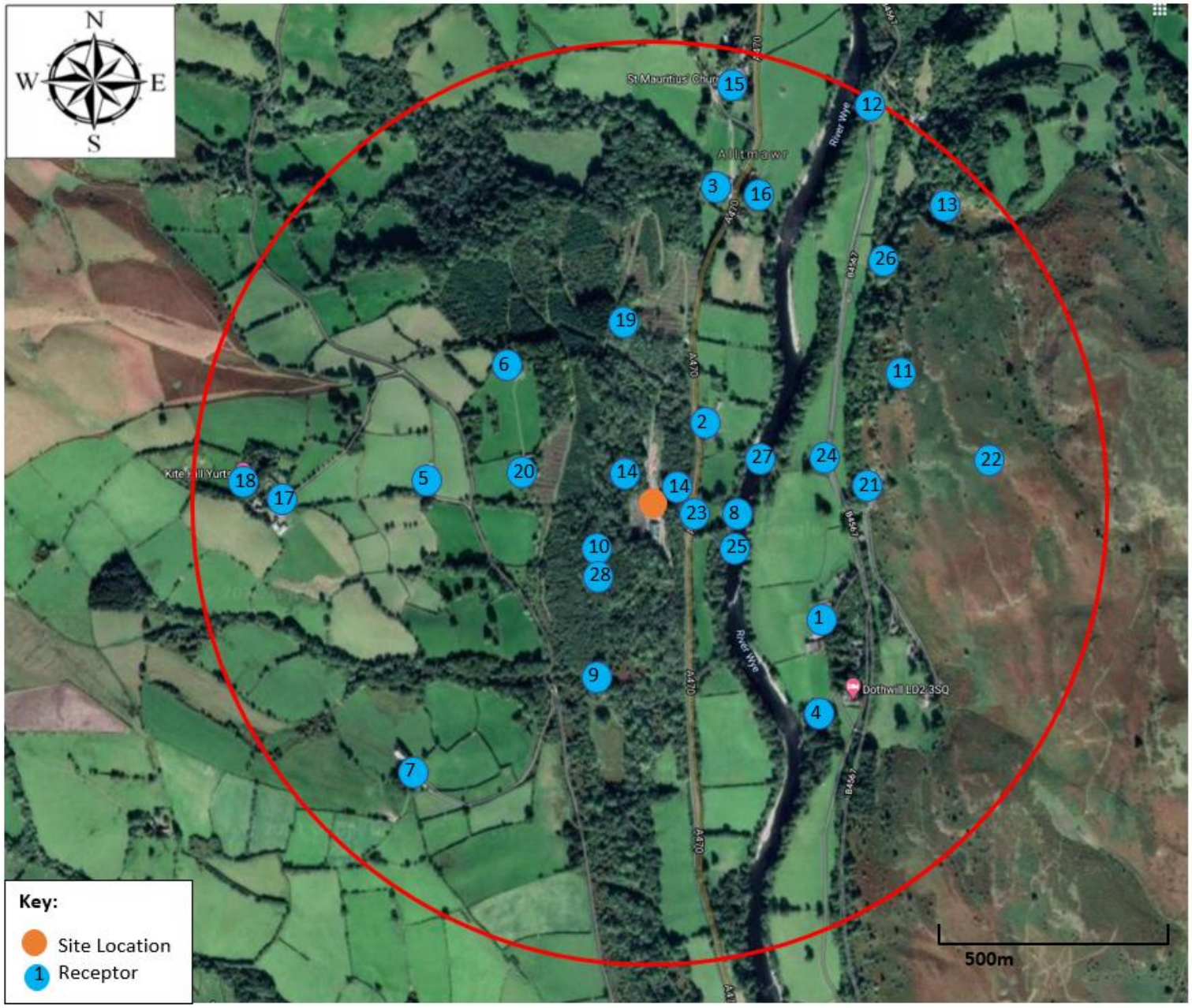
			site operations or any firewater. Any firewater will drain into the aco and filter drains at the northern and southern sides of the site before reaching the small surface watercourses. Booms and spill kits will be used in the event of fire to further protect the watercourses. The operator will undertake routine maintenance of equipment in accordance with manufacturer's guidance. This will minimise the risk of mechanical failure which may result in an increased risk of combustion. Site notices and training will be undertaken regarding fire hazards. Site Manager will be responsible for actions in the event of a fire. The site has fire extinguishers on site. Fuel is stored in a double bunded and locked secure tanks so leaks from fuel which may contribute to a fire on site are unlikely.			
Leaks and spillages of oil or fuel.	Groundwater and surface water. Waterways listed in Table 2 SSSIs Protected species in waterways	Infiltration	The operator does not accept liquid wastes. The operator will undertake regular maintenance of plant equipment in accordance with manufacturer's guidance. This will minimise the risk of mechanical failure which may result in leaks. All fuel, oil and lubricants will be contained within bunded tanks. The tanks will be maintained and inspected in accordance with the manufacturer's recommendations. Daily vehicle / plant checks to ensure any fuel/oil leaks etc. are repaired as soon as possible.	Unlikely due to measures in place.	Contamination of land and watercourses.	Low

			The site benefits from a sustainable drainage system which will contain any leaks or spills. It includes a full retention interceptor to separate any hydrocarbons out. The holding tank has a stop-off valve to prevent any spills from escaping the system. The small stream across the entrance of the site is ducted to bypass the site and rainwater run off from the quarry face at the back of the site is also collected in a perforated pipe to drain naturally off site without coming into contact with any site operations or any spills/leaks. Any spills or leaks will drain into the aco and filter drains at the northern and southern sides of the site before reaching the small surface watercourses. Booms and spill kits will be used in the event of a spill or leak to further protect the watercourses. The site will follow secondary risk management provisions such as spill kits, emergency response procedures as detailed in the site EMS and staff training to manage spills. The Site Manager will be responsible for ensuring effective remediation and documenting any incident.			
Flooding	Groundwater and surface water SSSIs Protected species in waterways	Infiltration and Percolation	The site is not located in an area at high risk of flooding from rivers or surface waters. Hazardous waste is not permitted on site and only inert material will be stockpiled which is very low risk and highly unlikely to contaminate floodwater. The site has a permeable surface to allow for natural infiltration into ground and prevent flooding on site and the surrounding area. An impermeable surface would increase run off rates and increase the risk of flooding. The SuDS allows the continuation of natural percolation.	Unlikely due to measures in place in the nature of the proposed development.	Disruption to works operations Contamination of local groundwater and/or surface water	Low

			The waste stored onsite is unlikely to cause contamination of groundwater through infiltration as the proposed waste types are inert and non-hazardous and the site benefits from a sustainable drainage system. Due to the nature of waste types which are proposed to be accepted on site (inert and non-hazardous), if surface water comes into contact with these wastes, significant pollution or contamination of groundwater or surface water is considered highly unlikely. The small stream across the entrance of the site is ducted to bypass the site and rainwater run off from the quarry face at the back of the site is also collected in a perforated pipe to drain naturally off site. The drainage system does not act to block the natural path or flow of floodwater and cause further issues. There is no proposed ground raising within the site boundary so this will not impact on flood risk to the site or nearby receptors. The site will be evacuated and closed in a flood event following a flood warning and evacuation plan. Flood levels will be monitored through signing up to flood alerts and site staff inspecting levels in the watercourses daily. All site staff are to receive training on trigger levels in watercourses. If this is not sufficient, then site level monitors will be installed.			

Vandalism	Local population in residential dwellings and sensitive land uses listed in Table 2. Site staff	Unauthorised entry to the site	The site has operating 24-hour CCTV. Access to the waste area will be restricted to trained depot staff. Any fuel or valuables will be stored in locked storage. Any identified damage to the locked storage that could compromise the site security will be recorded and reported to the landowner. A temporary repair will be made as necessary before the end of the working day. Permanent repair or replacement will be undertaken as soon as practicable. Procedures are in place which require all visitors to the site to sign in on arrival and sign out on departure.	Unlikely due to measures in place.	Release of polluting materials to air, water or land.	Low
All on-site hazards from wastes; machinery and vehicles	Local human population gaining unauthorised entry to the site, site staff and contractors.	Direct physical contact	Activities will be managed and operated in accordance with an EMS which will include measures to prevent unauthorised access. Wastes, machinery, and vehicles will be handled by trained site operatives. All plant is serviced and maintained as part of a cyclical maintenance plan.	There is always a risk of accidents, but measures have been put in place to reduce the risk associated with site activities.	Injury or health effects	Low

Appendix B – Sensitive Receptor Plan



ID	Receptor
Residential	
1	Sheep Wash
2	Cwrt-Gwenddwr
3	Properties on A470
4	Tyrcelyn Halt
5	Upper Pentywyn
6	Lower Pentywyn
7	Erw'rhenallt
Woodland and Waterways	
8	River Wye (Upper Wye) SSSI and SAC
9	Cwm Dyfnant
10	Broadleaved woodland
11	Llandeilo, Rhulen and Llanbedr Hills SSSI
12	River Wye (Tributaries) SSSI
13	Coed Aberedw SSSI
14	Ancient Woodland
On site	Small surface watercourses
Sensitive Land Uses	
15	St Mauritius Church
16	Chapel Farm
17	Bedw Farm
Industrial/Commercial	
18	Kite Hill Yurts
Public Rights of Way	
19	Public Bridleway (off the A470)
20	Public Footpath
21	Public Footpath (off the B4567)
22	Public Bridleway
Infrastructure/utilities	
23	A470
24	B4567
Species	
25	Important Plant Areas (Plantlife)
26	Rare Lichens and Bryophytes
27	Protected eels and fish
28	Protected mammals
Local Wildlife Sites	
	Allt Mawr Uchaf
	Old Bedw and Old Bedw 2
	Old Bedw GCN Pond