



**ENVIRONMENTAL PERMIT APPLICATION –
SUPPORTING STATEMENT**

**CARDIFF WASTE MANAGEMENT RESOURCE CENTRE
WATERSIDE BUSINESS PARK
LAMBY WAY
RUMNEY
CARDIFF
CF3 2EQ**

**Document Reference: BF5023/05.R4
September 2021**



**Project Quality Assurance
Information Sheet**

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LAMBY WAY, RUMNEY, CARDIFF, CF3 2EQ**

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ENVIRONMENTAL PERMIT APPLICATION

SUPPORTING STATEMENT

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1.0 INTRODUCTION

1.1 Scope and Background

- 1.1.1 Sirius Environmental Limited (Sirius) has been commissioned by Biffa Waste Services Limited (Biffa) to prepare a Bespoke Environmental Permit Application for both a Hazardous Waste Transfer Station Installation and a Non-Hazardous Waste Transfer Station Operation for their proposed site located in Waterside Industrial Park, Rumney, Cardiff.
- 1.1.2 This supporting statement provides a summary of the Environmental Permit Variation Application; including Best Available Technique (BAT) assessments and contains relevant site drawings, Standard Operating Procedures (SOPs) and appendices to support the Environmental Permit Application.
- 1.1.3 Biffa have previously undertaken the activities proposed under this application at their existing facility at Curran Embankment, Riverside, Cardiff. Waste transfer operations at this former site were initially undertaken under a Waste Management Licence (WML 88/07) which was first issued in 1990. WML 88/07 authorised the acceptance of up to 4,999 tonnes of both hazardous and non-hazardous materials per year for storage blending and repackaging of material.
- 1.1.4 Following the implementation of the Pollution Prevention and Control (England and Wales) Regulations, 2000, it was required to delineate the non-hazardous and hazardous elements of the material operations undertaken at the Cardiff Waste Management Resource Centre. Accordingly, a PPC Permit application was submitted to the Natural Resources Wales in August 2005 and subsequently determined in May 2006. Following the determination of this application site operations relating to the Hazardous Waste Transfer Installation activities were authorised under Environmental Permit Reference EPR/SP3031SJ whilst the Non-Hazardous Waste Transfer Station Operations continued to be authorised under WML 88/07.
- 1.1.5 Environmental Permit EPR/SP3031SJ authorised the Cardiff Waste Management Centre to accept up to a further 4,999 tonnes per year of primarily hazardous material (although specific non-hazardous waste codes were included). Additionally, EPR/SP3031SJ authorised the Cardiff Waste Management Centre to accept up to 750 tonnes per year of waste oil for bulking and storage, this comprising part of the overall 4,999 tonnes per annum.
- 1.1.6 Since the original issues of EPR/SP3031SJ in May 2005, only one variation has been undertaken. This variation was implemented by Natural Resources Wales in May 2013 and updated EPR/SP3031SJ and implemented changes introduced by the Industrial Emissions Directive (IED).
- 1.1.7 Due to the proposed redevelopment of the land within which the Cardiff Waste Management Centre is located, Biffa have been requested to relocate their operations to new premises and the proposed site was selected as the new location of the Material Transfer Station. Accordingly, Biffa wishes to transfer the existing operations to the new location.
- 1.1.8 The proposed Material Transfer Station is located in Waterside Business Park located off of Lamby Way, Rumney, Cardiff, CF3 5EQ (National Grid Reference ST 22019 78619). The site is bound by a mix of palisade and mesh fencing on all sides, with access to the site via a gated entrance off Lamby Way. A small electricity substation is present on the southern boundary. The site is situated within an industrial park, with a welding fabrication unit to the west, a suspended ceiling fabrication unit to the south and a warehouse comprising mixed uses

including a food store and dance studio to the east. The northern boundary comprises a railway line operated by Network Rail.

1.1.9 Prior to proposed Material Transfer Station activities, the site has remained undeveloped until 1994 when an electricity substation was constructed on the south-eastern boundary. The railway line was present north of the site since at least the 1880s. The surrounding industrial estates and Lamby Way first appear from around 1993.

1.1.10 Further information on the site location; including a summary of the site's environmental baseline conditions, is presented in the Site Condition Report (**Document No. BF5023/08**) which accompanies this Environmental Permit Application in **Appendix 4**.

1.1.11 This supporting statement has been prepared to demonstrate that the operations to be undertaken at the proposed Material Transfer Station; including both the Hazardous and Non-Hazardous Transfer Station elements, will be carried out in accordance with guidance on best practice and Best Available Technique (BAT) available and, in particular, the following specific regulations and guidance contained in:

- How to Comply with Your Environmental Permit, Version 8 (October 2014);
- Environmental Permitting (England and Wales) Regulations 2016 (as amended);
- Environmental Permitting Core Guidance (DEFRA, Updated March 2013);
- How to Comply with your Environmental Permit, Version 8 (October 2014);
- UK Sector Guidance Note IPPC S5.06: Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste (May 2013);
- Best Available Techniques (BAT) Reference Document (BRef) for Waste Treatment (August 2018);
- Establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council, Commission Implementing Decision (EU) 2018/1147; and
- H1 – Environmental Risk Assessment for Permits.

1.1.12 The SOPs discussed within this supporting statement will be subject to continuous review and revision. In all circumstances, revisions will be subject to approval by Natural Resources Wales (NRW).

1.1.13 The management of amenity issues are discussed within this document as well as being supported by a fugitive emissions risk assessment and an accident risk assessment, which have been completed in accordance with the relevant guidance.

1.2 Scheduled Activities and Specified Waste Management Operations

1.2.1 The activities to be carried out at the Lamby way facility will mirror those currently permitted to be carried out at their existing facility at Curran Embankment (Permit Ref.: EPR/SP3031SL/V002). However, it is noted that some confusion exists as to whether the non-hazardous waste bulking/transfer operations constitute a Directly associated Activity (DAA) to the hazardous waste related Scheduled Activities or whether they are considered as a separate non-scheduled waste operation.

- 1.2.2 In accordance with the Limb ii test described under Regulatory Guidance Note (RGN) 2 it is considered that the non-hazardous waste bulking/transfer activities do not 'serve' the hazardous waste related installation activities, whereby they could continue to operate if the hazardous waste activities ceased on site. Similarly, the hazardous waste installation activities are not principle users of the non-hazardous waste operations. The packaging wastes produced from the hazardous waste bulking operations are considered as a separate activity that is a DAA to the installation activities, to the non-hazardous waste operation dealing with imported wastes. On this basis, the suggested layout for Table S1.1 of the permit is presented in **Table 1** below.

Table 1: Suggested Layout of Table S1.1 based on proposed Scheduled Activities and Specified Waste Management Operations

Activity Reference	WFD Annex I and II Operations (Where Applicable)	Activity Listed in Schedule 1 of the EP Regulations	Description of Specified Activity	Limits of Specified Activity
A1	D13	S5.3 Part A(1) (a)(iii)	Mixing, blending, and bulking of hazardous waste (Transfer Station)	Up to 7,500 tonnes/year. Only the waste types specified in Table 2 of Appendix 7
	D14	S5.3 Part A(1) (a)(iv)	Re-Packaging of hazardous wastes and Re-Packaging of Laboratory Smalls (Transfer Station)	Up to 7,500 tonnes/year. Only the waste types specified in Table 2 of Appendix 7
	D15, R13	S5.6 Part A(1) (a)	Temporary storage of hazardous waste and waste oil	Only the waste types specified in Tables 1 & 2 of Appendix 7
Directly Associated Activity				
Treatment and storage of packaging waste		Treatment (washing, crushing, and shredding) and storage of packaging waste associated with the hazardous waste transfer/bulking operation only		
Discharge of surface water		Discharge of surface waters from external operation areas to surface water sewer		
Fuel and Oil Storage		Storage of fuel and oils to support the operation of plant and equipment		
Description of Activities for Waste Operations			Limits of Activities	
Non-Hazardous Waste Transfer Station: R3: Recycling/reclamation of organic substances which are not used as solvents R4: Recycling/reclamation of metals and metal compounds R5: Recycling/reclamation of other inorganic materials R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced) D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D12 D14: Repackaging prior to submission to any of operations numbered D1 to D13 D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced)			Up to 7,500 tonnes/year. Only the waste types specified in Table 3 of Appendix 7 Treatment activities limited to the blending, mixing, shredding and repackaging of non-hazardous waste for onward transfer.	

1.3 Facility Location

- 1.3.1 The proposed site for the Lamby Way Hazardous Waste Transfer Station is located to the east of Cardiff on the western side of the wider Waterside Business Park. Access to the proposed site will be gained via an access road which bounds the southern boundary of the proposed waste transfer station and connects to Lamby Way. The proposed site is currently an undeveloped area of land and as such, no other operations are undertaken within the proposed site boundary. The general location of Biffa's proposed waste transfer station is shown in **Drawing Reference BF5023/09/01**. The National Grid Reference for the approximate centre of the site is: NGR ST 22019 78619.
- 1.3.2 The area covered by the Environmental Permit Application boundary of the hazardous waste transfer station is illustrated on **Drawing Reference BF5023/09/02**. The site boundary is defined as shown on the above drawing and delineated in the appropriate colour (Green – Environmental Permit Boundary).
- 1.3.3 The proposed site will consist of covered storage bays and designated loading/unloading areas and site offices and welfare facilities. Land to the immediate north is bound by well-established vegetation (incl. trees and hedgerows) and the Cardiff to London Paddington mainline railway, beyond which are located residential properties. Immediately to the east, south and west of the proposed site boundary consists of industrial units associated with the wider Waterside Business Park. Further to the west of the proposed site is Parc Tredelech.
- 1.3.4 All permitted waste activities will be undertaken upon with designated areas of the site. Storage operations will be undertaken within designated storage bays whilst transfer operations will be undertaken within the defined loading areas. As mentioned above, access to and egress from the site will be undertaken from the main access road which enters the site on the southern boundary of the site and connects to Lamby Way. Access to the waste storage and loading areas is then gained after vehicles have been checked in through the main site reception. The indicative operational layout of the site is illustrated on **Drawing Reference BF5023/09/03**.
- 1.3.5 As previously discussed, the site is situated upon a currently undeveloped area situated within the Waterside Business Park and is immediately bounded to the south, east and west by buildings associated with the Waterside Business Park and to the north by established trees/hedgerows and the Cardiff to London mainline railway.
- 1.3.6 Beyond the aforementioned vegetation and mainline railway, the proposed site is bounded to the north by residential properties situated on New Road and associated with Rumney. To the west by open grassland and the A4232, to the south by further industrial units, Cardiff HWRC and open grassland. To the east the proposed site is bounded by industrial units associated with the wider Waterside Business Park and to the south, east and west by agricultural fields.
- 1.3.7 Due to the proposed site's location on the outskirts of Cardiff, aside from the residential area of Rumney located to the north of the propose site, residential properties are generally sparse to the east, south and west of the proposed site.

1.4 Permitted Waste Quantities

- 1.4.1 The maximum tonnage of permitted wastes to be processed by the facility during any one year shall not exceed 7,499 tonnes.
- 1.4.2 The maximum amount of waste stored at the site at any one time shall not exceed 2,195 tonnes.

1.5 Permitted Waste Types

- 1.5.1 A schedule of waste tonnages and a list of proposed waste types to be accepted at the facility, by EWC code, are included in **Appendix 7**. These tables are segregated by the nature of the waste operation and types accepted and the activity which they are accepted against.

1.6 Hours of Operation

- 1.6.1 The site will undertake the treatment and recycling of materials to ensure negligible impacts on surrounding sensitive receptors.
- 1.6.2 Waste processing activities shall only be carried out between 08:00hrs – 18:00 hrs Monday to Fridays and 08.00 - 13.00 hrs on Saturdays and Sundays.
- 1.6.3 All other activities on site shall be restricted to 08:00hrs to 20:00hrs.
- 1.6.4 Maintenance of plant and equipment will be undertaken during operational hours only.
- 1.6.5 The operator will not undertake any activities associated with the proposed waste transfer activities outside of the agreed hours of operation, unless in an emergency. In such instances, NRW will be notified within 24 hours and the details/activities recorded in the site diary.

1.7 Cessation of Operations

- 1.7.1 In the event of cessation of all waste management operations on-site, either permanently or for a period in excess of 3 months, then no later than 5 working days following the cessation of waste management activities, the Operator will inform Natural Resources Wales (NRW) in writing, detailing the date of cessation and in the case of temporary cessation, the date planned when operations are due to resume. In the event the Site resumes waste management operations sooner than the notified date, the operator advises NRW in writing at least 5 working days in advance of the resumption date.

1.8 Operational Management Plan

- 1.8.1 The following part of the document sets out broadly how the operation will be managed in terms of an overall process, and how this complies with the relevant sector guidance, namely Sector Guidance Note IPPC SGN5.06 'Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste. This will include an assessment against the indicative Best Available Technique (BAT) for the sector. The BAT provisions will also represent appropriate measures to support the non-hazardous bulking/transfer operations.

2.0 IN-PROCESS CONTROLS

2.1 Waste Pre-Acceptance

2.1.1 Other than in an emergency, no 'on-spec' waste deliveries will be accepted onto the proposed site, with all waste deliveries being subject to technical assessment/pre-characterisation and setting up of contracts prior to delivery. Biffa will obtain the following information from the waste producer to enable consideration of the waste load prior to acceptance on site. This information is required for all new waste enquiries:

- Waste description, including EWC Code;
- Description of the process producing the waste;
- Variation to the process;
- Method of transport/delivery; and
- The typical waste composition/analysis of the waste;

2.1.2 Where appropriate, waste producers will be required to demonstrate that any analytical testing is carried out by a laboratory with an appropriate level of quality assurance (e.g. UKAS accreditation), with sampling undertaken by a technically competent person.

2.1.3 Analytical testing will incorporate a number of key chemical characteristics giving individual constituents and as a minimum, their percentage compositions. This chemical fingerprint will subsequently be used to validate incoming materials upon their arrival at the site and determine the optimal on-site storage arrangements.

2.1.4 All pre-acceptance records will be kept for at least three years (in a computerised waste tracking system), following receipt of the waste. No records will be kept for an enquiry from a waste producer that does not lead to a receipt of the waste.

2.1.5 Biffa have developed a Standard Operating Procedure (SOP) specifically focussed on this element of site operations (*SOP 01 – Pre-acceptance of Containerised Waste*) which has been previously employed at the pre-existing Cardiff Waste Management Resource Centre. It is proposed that the waste pre-acceptance procedures at the Lamby Way Transfer Station will continue to adhere by *SOP 01*, a copy of which is provided in **Appendix 12**.

2.1.6 The waste pre-acceptance procedures comply with indicative BAT as outlined in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 2** below:

Table 2: Indicative BAT requirements for Pre-Acceptance of Waste

Indicative BAT requirements for pre-acceptance of waste	To be undertaken at the Installation	Comments
<p>From the waste disposal enquiry, the Operator should obtain information in writing relating to:</p> <ul style="list-style-type: none"> • the type of process producing the waste • the specific process from which the waste derives • the quantity of waste; • chemical analysis of the waste (individual constituents and as a minimum their percentage compositions) • the form the waste takes (solid, liquid, sludge etc) • hazards associated with the waste; and • sample storage and preservation techniques 	✓	Conforms with BAT 2 and BAT 40

Indicative BAT requirements for pre-acceptance of waste	To be undertaken at the Installation	Comments
Unless a sample and analysis has already been completed by a third party and the Operator has sufficient written information from them, then the Operator should in every case obtain representative sample(s) of the waste from the production process/current holder and compare it against the written description to ensure that it is consistent.	✓	Waste producer (or appropriate representative) to fully characterize the waste. Waste analysis likely to be limited to a small proportion of wastes accepted at the site where the risk of contamination may be of concern. For potential sensitive wastes types an initial load will be accepted for trials within the on-site processes.
Wastes should not be accepted at the installation without a clear method or defined treatment and disposal route being determined in advance and costed before the waste is accepted at the installation.	✓	Only permitted waste suitable for treatment at the facility to be accepted at the site.
The Operator should ensure that the sample is representative of the waste and has been obtained by a person who is technically competent to undertake the sampling process.	✓	
The type of information that would demonstrate the reliability of the sample includes: <ul style="list-style-type: none"> • location of sampling point, for example, effluent tank • capacity of vessel sampled (for samples from drums an additional parameter would be the total number of drums) • method of sampling, e.g. sampling tap (mid flow), "top" sample • number of samples and degree of consolidation • operating conditions at time, e.g. normal operation, shut-down, maintenance and/or cleaning • preservation techniques 	✓	
Sample tracking systems within the installation should be established and be auditable.	✓	Conforms with BAT 2
Analysis should be carried out by a laboratory with robust quality assurance and quality control methods and record keeping.	✓	To be carried out by waste producer
Analysis required will vary depending upon the nature of the waste, the process to be used and what is known about the waste already. Results of analysis should be kept within the tracking system. These details should include: <ul style="list-style-type: none"> • check on constituents declared by waste producer/holder to ensure Permit compliance, treatment plant specification and final disposal • all hazardous characteristics • physical appearance • colour • pH • presence, strength and description of odour assessment (note COSHH implications) 	✓	
Following characterisation of the waste, a technical assessment should be made of its suitability for treatment or storage to ensure Permit conditions are being met.	✓	
There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste disposal enquiries, then a final technical assessment prior to approval should be made. It is this final technical checking that should be used to avoid build-up of accumulations of wastes.	✓	See Section 4.5

Indicative BAT requirements for pre-acceptance of waste	To be undertaken at the Installation	Comments
All records relating to pre-acceptance should be maintained at the installation for cross-reference and verification at the waste acceptance stage. These records should be kept for a minimum of 3 years	✓	
<p>For laboratory smalls, whether or not the installation Operator packs them on behalf of the producer, a full list of laboratory smalls should be created and transported with the waste. Operators should have written procedures regarding the segregation, packaging and labelling of laboratory smalls. For those Operators who accept wastes packaged by their customers, this Guidance should be provided to the customer so as to prevent problems when the material is delivered to the installation. This guidance should include the following:</p> <ul style="list-style-type: none"> • What information is required in order to meet the operator's pre-acceptance checks • What chemicals are prohibited by the operators permit (e.g. radioactive chemicals, Clinical wastes, explosives,) • How to identify the waste laboratory chemical • How to establish and record the hazards posed by the chemical • Supporting documentation required (e.g. manufacturers data, material safety data sheets) • Segregation policy for waste laboratory chemicals to avoid mixing of incompatible wastes in the same drum • How to pack the chemicals • What information is to accompany the waste 	✓	

2.2 Waste Acceptance

- 2.2.1 As previously mentioned, other than in an emergency, only pre-characterised and approved wastes will be accepted onto the proposed site. The intention of the onsite acceptance procedures is to verify and characterise the waste as it arrives at the waste facility against the information provided by the waste producer. Wastes will not be accepted at the facility unless an assessment has been made of its suitability for acceptance onto the site.
- 2.2.2 Wastes will be delivered to the waste facility by a combination of heavy and light goods vehicles.
- 2.2.3 All waste delivery and dispatch vehicles will arrive at the site via an existing tarmacked access road that connects to Lamby Way to the south of the site. Vehicles are then directed towards the entrance.
- 2.2.4 Waste is only accepted at the site if it is in accordance with the provisions laid down in The Environmental Protection (Duty of Care) Regulations 1991 (and subsequent amendment in 2003), and in accordance with the sites Environmental Permit (EP) and associated Schedule of Tonnages and EWC codes (**Appendix 3**).
- 2.2.5 All operatives on site will have knowledge of the Environmental Permit and of the types and forms of waste accepted and prohibited at the facility.
- 2.2.6 In terms of receiving the material, delivery drivers will arrive on the entrance driveway where the ticket is checked. The driver will pass on the relevant paperwork, e.g. Waste Transfer Note (WTN) for Non-Hazardous materials, and

Hazardous Waste Consignment Note for Hazardous materials, with the receiving person completing the relevant sections of the note.

- 2.2.7 A record is kept of the date and time of waste deliveries, quantities and the nature of the waste deposited at the site, the name of the company and their representative delivering (if applicable) each load of waste and the vehicle registration number. It is inspected at the point of unloading, by the receiving chemist to determine the basic characteristics of the waste. Subject to verification that the waste is suitable for treatment at the site and the accompanying waste transfer documentation is correct, the waste is accepted into the site. If the load does not hold the required paperwork, an attempt shall be made to verify the delivery. The waste is moved to the appropriate quarantine area (dependent upon hazard), until such time as the paperwork is confirmed or otherwise and the load approved or rejected. If the waste is unsuitable, the items will be rejected and removed from site back to the producer or transferred to an appropriate waste management facility as soon as practically possible. Such events will be recorded in the register of rejected loads which is available on site for Natural Resources Wales (NRW) inspection.
- 2.2.8 Upon arrival to the site, the site chemist will carry out a series of checks to ensure that the waste delivered conforms to the pre-acceptance characterisation as detailed on the transport documentation and enquiry system. These checks are a confirmatory inspection and include, but are not restricted or limited to, appearance, odour and pH. Analysis of composite samples is acceptable for multiple containers of the same waste stream. Where appropriate, and safe to do so, samples are taken and additional analysis carried out by an appropriate laboratory.
- 2.2.9 All information is logged on the 'Incoming Waste Verification' spreadsheet. This would include but is not restricted to the value of the pH, physical state, confirmation of and justification for the sampling regime i.e. core sample, homogeneous liquid, and where safe, an assessment and description of odour. If no odour present, this should be recorded. If additional analysis is required a sample is taken and submitted to a laboratory for analysis.
- 2.2.10 Samples are returned to the original container once analysis is complete or disposed of appropriately.
- 2.2.11 Should a load be deposited and found to be in breach of the site permit, and the producer/carrier has left the site, this load will be re-containerised, and placed in the load quarantine area awaiting collection for delivery to a suitably permitted facility. Such events will be recorded in the register of rejected loads which is available on site for NRW inspection.
- 2.2.12 Biffa have developed a SOP specifically focussed on this element of site operations (*SOP 02 – Waste Acceptance at Transfer Stations*) which has been previously employed at the pre-existing Cardiff Waste Management Resource Centre. It is proposed that the waste pre-acceptance procedures at the Lamby Way Transfer Station will continue to adhere by *SOP 02*, a copy of which is provided in **Appendix 12**.
- 2.2.13 In addition to the above, a separate SOP has been developed for the material rejection element of site activities (*SOP 04 – Non-conformance and Material Rejection*). As with *SOP 02*, *SOP 04* is currently employed at the Cardiff Waste Management Resource Centre and the proposed Lamby Way Transfer Station will continue to adhere by *SOP 02*, a copy of which is provided in **Appendix 12**.

2.2.14 The waste acceptance procedures comply with indicative BAT as outlined in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 3** below:

Table 3: Indicative BAT requirements for the Acceptance of Waste

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
Load arrival		
On arrival loads should: <ul style="list-style-type: none"> • be weighed, unless alternative reliable volumetric systems linked to specific gravity data are available • not be accepted into site unless sufficient storage capacity exists and site is adequately manned to receive waste • have all documents checked and approved, and any discrepancies resolved before the waste is accepted • be assessed by the site chemist to ensure that the delivery conforms with the pre-acceptance characterisation – with additional samples taken for laboratory analysis if appropriate. 	✓	All waste acceptance verification information is logged on the 'Incoming Waste Verification' spreadsheet. Conforms with BAT 40
Hazardous wastes should only be received under the supervision of a suitably qualified person (HNC qualified chemist or higher)	✓	
Load inspection		
Visual inspection. Where possible, confirmatory checks should be undertaken before offloading where safety is not compromised. Inspection must in any event be carried out immediately upon offloading at the installation.	✓	
Check every container to confirm quantities against accompanying paperwork. Following inspection, the waste should then be unloaded into a dedicated sampling/reception area.	✓	
At this stage the waste tracking system unique reference number should be applied to each container. Each container should also be labelled with the date of arrival on-site and primary hazard code.	✓	Conforms with BAT 2
Where containers are bulked, the earliest date of arrival of the bulked wastes should be transposed from the original container onto the bulk container.	✓	
The inspection, unloading and sampling areas should be marked on a plan and have suitably sealed drainage systems	✓	Supervised unloading carried out in storage areas.
Sampling - checking - testing of wastes - storage		
Other than pure product chemicals and laboratory smalls, no wastes should be accepted at the installation without sampling, checking and testing being carried out. Reliance solely on the written information supplied is not acceptable, and physical verification and analytical confirmation are required. All wastes, whether for on-site treatment or simply storage, must be sampled and undergo verification and compliance testing	✓	
The Operator should ensure that waste delivered to the installation is accompanied by a written description of the waste describing: <ul style="list-style-type: none"> • the physical and chemical composition; • hazard characteristics and handling precautions; • compatibility issues; • information specifying the original waste producer and process 	✓	Conforms with BAT 2

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
On-site verification and compliance testing should take place to confirm:- <ul style="list-style-type: none"> the identity of the waste the description of the waste consistency with pre-acceptance information and proposed treatment method compliance with permit 	✓	Conforms with BAT 2
Sorting of incoming waste to prevent unwanted material from entering subsequent waste treatment processes.	✓	All incoming waste streams will be assessed and visually inspected by trained and competent site chemist. If required, any contaminants identified within incoming solid waste streams will be manually segregated. Conforms with BAT 2g
The Operator should have clear and unambiguous criteria for the rejection of wastes, together with a written procedure for tracking and reporting such non-conformance. This should include notification to the customer/waste producer and the Regulator. Written/computerized records should form part of the waste tracking system information.	✓	Conforms with BAT 2
Documentation provided by the driver, written results of acceptance analysis, details of offloading point or off-site transfer location should be added to the tracking system documentation	✓	
A record of the sampling regime for each load and justification for the selection of this option should be maintained at the installation.	✓	
Wastes must not be deposited within a reception area without adequate space.	✓	
Wastes in containers should be unloaded into a dedicated reception area pending acceptance sampling. Such storage should be for a maximum period of 5 days. During this period there should be no bulking up or mixing of drums or decanting the contents into bulk storage. Wastes should be stored within this reception area according to compatibility in line with HSE Guidance Note HSG71. Appropriate storage must be achieved immediately upon offloading.	✓	Conforms with BAT 2
Should the inspection or analysis indicate that the wastes fail to meet the acceptance criteria (including damaged or unlabeled drums), then such loads should be stored in a dedicated quarantine area and dealt with appropriately. Such storage should be for a maximum of five working days. Written procedures should be in place for dealing with wastes held in quarantine, together with a maximum storage volume.	✓	
If the cause of failure to meet acceptance criteria is due to incompatibility, then the wastes should be segregated immediately to remove the hazard.	✓	
Tankered wastes should be sampled prior to acceptance. There should be no storage pending sampling.	✓	Conforms with BAT 2

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
<p>The driver of the vehicle carrying the waste may arrive at the installation with a sample that has been taken at some stage beforehand. This should be the exception and only be relied on if:</p> <ul style="list-style-type: none"> there are health and safety and environmental control considerations, for example, water reactive substances which would make sampling difficult, and the following written information has been supplied - the physical and chemical composition, hazard characteristics, incompatible substances and handling precautions, information specifying the original waste producer and process, and the waste has been taken directly from the production site to the waste treatment installation. 	✓	
<p>The installation should have a designated sampling point or reception area. These should be in close but safe proximity to the laboratory/checking facility and the sampling point should be visible (or covered by CCTV) if sampling is not directly supervised by, for example, laboratory staff.</p>	✓	
<p>The offloading, sampling point/reception and quarantine areas should have an impervious surface with self-contained drainage, to prevent any spillage entering the storage systems or escaping off-site. Attention should be given to ensuring that incompatible substances do not come into contact resulting from spills from sampling, for example, within a sump serving the sampling point. Absorbents should be made available.</p>	✓	
Sampling of Drummed Waste		
<p>The contents can only be identified with certainty if every container is sampled. Acceptance should involve sampling every container. However, analysis of composite samples is acceptable with such a sampling regime. A representative sample must be obtained by taking a core sample to the base of the container. Operators should ensure that lids, bungs and valves are replaced immediately after sampling.</p>	✓	Conforms with BAT 2
Drum Labelling		
<p>For drummed waste, controls should ensure each drum is given a unique label to facilitate a record of:</p> <ul style="list-style-type: none"> the location of each drum the duration of storage the chemical identity of the drum's contents the hazard classification for each drum 	✓	Conforms with BAT 2
<p>Drums should be handled and stored so that the label is readily visible</p>	✓	
Acceptance of Laboratory Smalls		
<p>The procedure for accepting laboratory smalls on-site should be essentially identical to that for drummed waste. They differ from the "normal" waste inputs to site in that they are in a pure concentrated form.</p>	✓	

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
In situations where the Operator has undertaken the identification and packaging on behalf of the customer, then the on-site verification can be restricted to opening the drums to check that the containers remain undamaged. In such cases the load must be accompanied by documentation confirming the checking and packing. In situations where the drum has been packed by the customer, then full checking and verification should be undertaken. Checking packaging and segregation adequately should include emptying of the drum as soon as possible and in any event at facilities that are operated 24 hours a day, within 24 hours. At sites not operated around the clock, checking must be undertaken before the end of the working day. Repackaging the waste must be undertaken as soon as the necessary checks have been undertaken	✓	
Waste Rejection procedures		
Lab smalls must not be accepted at a facility where there is insufficient suitably qualified personnel to process these wastes within the above timescales	✓	
If on opening a drum it is found that it contains incompatible substances, or that the substances have not been packaged adequately, then the drum should be sorted and repacked immediately, and the non-conformance procedure followed.	✓	Conforms with BAT 2
Sorting and repackaging of laboratory smalls should take place in a dedicated area/store. Once the wastes have been sorted according to hazard classification, with due consideration for any potential incompatibility problems, and repacked, then these drums should not be stored within the dedicated laboratory smalls area but should be removed to the appropriate storage area.	✓	
The operator should have clear and unambiguous criteria for the rejection of wastes, together with a written procedure for tracking and reporting such non-conformance. This should include notification to the customer/waste producer and the Environment Agency. Written/computerised records should form part of the waste tracking system information. The operator should also have a clear and unambiguous policy for the subsequent storage and disposal of such rejected wastes. This policy should achieve the following: <ul style="list-style-type: none"> identifies the hazards posed by the rejected wastes labels rejected wastes with all information necessary to allow proper storage and segregation arrangements to be put in place segregates and stores rejected wastes safely pending removal 	✓	Conforms with BAT 2
Records		
The waste tracking system should hold all the information generated during pre-acceptance, acceptance, storage, treatment and/or removal off-site. Records should be made and kept up to date on an ongoing basis to reflect deliveries, on-site treatment and dispatches. The tracking system should operate as a waste inventory/stock control system and include as a minimum: <ul style="list-style-type: none"> date of arrival on-site producers' details all previous holders a unique reference number pre acceptance and acceptance analysis results package type and size 	✓	

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
<ul style="list-style-type: none"> intended treatment/disposal route record accurately the nature and quantity of wastes held on site, including all hazards and identification of primary hazards where the waste is physically located in relation to a site plan where the waste is in the designated disposal route identification of operator's staff who have taken any decisions regarding acceptance or rejection of waste streams and decided upon recovery / disposal options 		
<p>The system adopted should be capable of reporting on all of the following:</p> <ul style="list-style-type: none"> total quantity of waste present on-site at any one time, in appropriate units, for example, 205 litre drum equivalents breakdown of waste quantities being stored pending on-site treatment, classified by treatment route breakdown of waste quantities on-site for storage only, that is, awaiting onward transfer indication of where the waste is located on site relative to a site plan comparison of the quantity on site against total permitted comparison of time the waste has been on-site against permitted limit <p>These records should be held in a designated area, as agreed with the Agency, well removed from hazardous activities to ensure their accessibility during any emergency</p>	✓	
<p>All records relating to pre-acceptance should be maintained and kept readily available at the installation for cross-reference and verification at the waste acceptance stage. Records should be held for a minimum of two years after the waste has been treated or removed off-site. Records should be held in an area well removed from hazardous activities to ensure their accessibility during any emergency.</p>	✓	
<p>Back-up copies of computer records should be maintained off-site.</p>	✓	
General		
<p>Wastes should not be accepted at the installation without a clearly defined method of recovery or disposal being determined and costed and ensuring there is sufficient capacity being available. These checks should be performed before the waste acceptance stage is reached.</p>	✓	
<p>The Operator should ensure that the installation personnel who may be involved in the sampling, checking and analysis procedures are suitably qualified (HNC qualified chemist or higher) and adequately trained, and that the training is updated on a regular basis.</p>	✓	
<p>Analysis should be carried out by a laboratory with suitably accredited test methods</p>	✓	
<p>Samples should be retained on-site for a minimum of two days after the waste has been treated or removed off-site including all residues from its treatment.</p>	✓	

Indicative BAT requirements for the acceptance of waste	To be undertaken at the Installation	Comments
Once analysis has confirmed that the waste is acceptable, the Operator should only then create a batch for treatment or a load for off-site removal. Once a batch has been assembled for treatment, the operator should create a composite sample for analysis prior to treatment. Scope of analysis depends upon intended treatment but should be specified.	✓	
There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste enquiries, then a final technical assessment prior to approval should be made. It is this final technical checking that should be used to avoid build-up of accumulations of wastes and to ensure that sufficient capacity exists.	✓	

2.3 Waste Storage

- 2.3.1 When Duty of Care checks are satisfactorily completed at the entrance driveway, vehicles are directed to the designated reception area for the unloading and waste inspection. Post inspection by the receiving chemist, Items are moved from reception into the appropriate storage or treatment area, All hazardous and non-hazardous wastes accepted at the proposed facility will be stored as depicted in **Drawing Reference BF5023/09/03**.
- 2.3.2 Waste offloading procedures are summarised in *SOP 02 – Waste Acceptance at Transfer Stations v9* (included in **Appendix 12**). *SOP 02* confirms that all waste delivered to the transfer station shall be off-loaded into the reception area (as marked on the site storage plan) in such a way that all containers, pallets etc are physically removed from the vehicle and placed into the reception area to allow a full and complete inspection by the site chemist. To prevent wastes that are being unloaded from being placed in the same immediate area as wastes that are being sampled/inspected, a 2m gap or physical demarcation (tape or barrier) shall separate the deliveries. It is not acceptable for waste (either full or part load) to remain on the vehicle for immediate transfer to a final disposal facility. Pallets containing boxes shrink-wrapped together must be broken down and inspected to ensure all materials are identified.
- 2.3.3 Further details on the waste offloading procedure are presented in *SOP 02 (Appendix 12)*.
- 2.3.4 All waste storage areas are designed and will be engineered in accordance with the specific requirements of types of waste they hold and in accordance with NRW guidance on Environmental Permitting and the protection of environmental resources such as surface and groundwater. The consideration of proposed storage arrangements for each component of both inputs and outputs would dictate the level of containment considered necessary.
- 2.3.5 The total storage capacity for incoming wastes and bulked product will not exceed 2,195 tonnes at any one time. Further details on the Schedule of Tonnages are attached in **Appendix 7**.

Internal Storage

- 2.3.6 Internal storage arrangements at the proposed Lamby Way site consists of 17 individual storage bays split between three permanent housing structures. As shown in **Drawing Reference BF5023/09/03**, 10 storage bays are situated

within a building running along the northern boundary of the proposed site and are designated as waste material storage bays. A further six bays located within a building located in the centre of the proposed site area running parallel to the previously mentioned structure and 3 bays will be utilised for processing activities and the additional bays will be for reception and storage of material. The final storage bay is located in the south-western corner of the proposed site.

2.3.7 Each bay will be utilised for either the storage or blending/bulking up of a specific material stream, with the nature of the material stream determined by the Site Manager (or Nominated Deputy) based on checks on incoming materials in line with guidance published by the Health and Safety Executive (incl. HSG71).

2.3.8 Each storage bay will be of concrete construction and comprise of three solid concrete walls. All storage bays will be situated upon impermeable concrete surfacing with sealed drainage systems in place for each bay. Further details of storage bay drainage arrangements will be discussed in **Section 3.0**, however, to summarise, each internal storage bay will contain its own drainage channel which will direct any leachate, spills or run-off to a dedicated collection tank.

External Storage

2.3.9 In addition to the internal storage arrangement a small proportion of materials accepted at the proposed facility will be stored externally. These proposed materials consist of those arriving in gas containers or gas storage bottles, which do not present a significant risk to controlled waters. These items will be stored within secure cages/containers located over impermeable surfacing located in the eastern section of the site, as shown in **Drawing Reference BF5023/09/03**. The containment measures will be inspected daily.

2.3.10 Surface-water run-off from this area of the site will be captured by the site-wide drainage network which is discussed further in **Section 3.0**. The inclusion of this area within the Site's drainage network will ensure that the environmental risk from the potential discharge of water from external storage areas is contained and minimised.

General Storage Requirements

2.3.11 A management of risk approach will be employed at the proposed facility to ensure good management of material and to prevent accumulation of hazards over the hazardous planning consent levels. No materials will be stored over 6 months, except with prior permission from NRW.

2.3.12 Storage of non-hazardous and hazardous materials will be in line with HSE standards. In particular with HSG 51, 71, 76, 140, 176 & CS21.

2.3.13 The site has been designed in such a way that storage areas are located as far away as practicably possible from identified receptors (incl. residential properties and watercourses).

2.3.14 Incoming wastes will also be stored in such a way that minimises (if not eliminates) the need for unnecessary handling of waste containers within the site boundary; in accordance with BAT 4.

2.3.15 Furthermore, the use of the HSE standards allow for the sites storage arrangements to be optimised according to chemical composition of the incoming waste materials. This approach will allow for the segregation of incompatible wastes that have the ability to react adversely together. This

approach significantly reduces the risks associated with the waste storage resulting in a safer working environment; thereby discharging BAT 4.

2.3.16 Any spillages identified during this inspection will be cleaned using the spillage kits utilised on site to ensure contamination is prevented.

2.3.17 The theoretical maximum quantities of material stored on site along with the maximum storage durations are presented in

2.3.18 **Table 4.**

Table 4: Theoretical Maximum Storage Bay Capacities at the Proposed Lamby Way Waste Transfer Station

Storage Bay Ref.	Maximum Storage Capacity		Maximum Storage Period
	Tonnage	Volume (m³)	
Storage bays			
Bay 1	184	154	6 months
Bay 2	107	88	6 months
Bay 3	107	88	6 months
Bay 4	107	88	6 months
Bay 5	107	88	6 months
Bay 6	184	154	6 months
Bay 7	107	88	6 months
Bay 8	107	88	6 months
Bay 9	107	88	6 months
Bay 10	107	88	6 months
Bay 12	184	154	6 months
Bay 13	107	88	6 months
Bay 14	107	88	6 months
Bay 17	42	90	6 months (Or 3 months if shredded)
Process bays			
Bay 11	107	88	N/A
Bay 15	184	154	N/A
Reception Bay			
Bay 16	240	198	N/A

2.3.20 During delivery, storage and subsequent processing, the operator will ensure that any fugitive emissions to air, land or water (dust, noise, liquids) are minimised and managed in accordance with the required environmental legislation and guidance.

2.3.21 A site chemist will supervise and inspect all materials discharged at the site. Any non-conforming loads will be reloaded onto the delivery vehicle. Where the delivery vehicle has left site, the non-conforming materials shall be manually segregated into a designated quarantine area and arrangements made for removal off-site. The quarantine area will be clearly labelled. If the material is deemed suitable for processing by an alternative on-site material treatment operation (subject to further validation testing where necessary) they shall be transferred to the appropriate storage area.

2.3.22 A daily inspection shall be carried out on all visible engineered containment systems for signs of damage and wear. For areas where material is deposited for longer periods inspections shall be carried out immediately after removal. Remedial measures shall be instigated as soon as reasonably possible to rectify any damaged infrastructure. Where necessary, storage and treatment operations shall be suspended in any such area until repairs are instigated.

- 2.3.23 Similarly, all containment vessels will be inspected on a daily basis to identify their condition and the presence of any leaks. Should any leaks be identified then will be recorded on the daily Operation and Maintenance Check Sheet (**Appendix 9**) and remedial actions will be undertaken as soon as practicably possible. The nature of the remedial action will be recorded in the site diary.
- 2.3.24 All proprietary materials that are required as part of the operations will be stored in accordance with regulations and guidelines set out for their safe containment, e.g. Fuels and Oil as per NRW's Guidance. All tanks will be double skinned or provided with bund structures to at least 110% of the largest tank volume or if an aggregation of tanks the bund capacity will equate to at least 25% of the cumulative volume, whichever is the greater.
- 2.3.25 Biffa have developed a SOP specifically focussed on this element of site operations (*SOP 03 – Storage of Containerised Waste in Transfer Stations v6*) which has been previously employed at their existing Cardiff Waste Management Resource Centre. It is proposed that the waste pre-acceptance procedures at the Lamby Way Transfer Station will continue to adhere by *SOP 03*, a copy of which is provided in **Appendix 12**.

Quarantined Wastes

- 2.3.26 In the unlikely event that material is unsuitable for the site, one of the reception bays will be identified as a quarantine area. If the carrier has not already left site, materials will be reloaded for immediate offsite transfer, or if the carrier has left the site it will stored within the designated Quarantine Area pending offsite removal.
- 2.3.27 Materials that require quarantine but are suitable for site will be quarantined within a storage bay of the same major hazard. Materials in quarantine will be accepted or rejected within 5 working days in line with SOP (*SOP04 Non-Conformance and Waste Rejection v4*).

BAT Assessment

- 2.3.28 The material storage arrangements comply with indicative BAT as outlined in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 5** below:

Table 5: Indicative BAT requirements for Waste Storage

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Offloading/discharge of waste		
The Operator should have in place a system to ensure that the correct discharge point or storage area is used. The options for this include: • supervision by site staff...	✓	Conforms with BAT 4
Offloading and quarantine points should have an impervious surface with self-contained drainage, to prevent any spillage entering the storage systems or escaping off-site	✓	Conforms with BAT 4
Records		
The Operator should have an internal tracking system which should satisfy the objectives and minimum standards for waste acceptance for all wastes.	✓	

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
General Storage Requirements		
Storage areas are often the most visible aspects of the installation. Storage areas should be located away from watercourses and sensitive perimeters, for example, those which may be adjacent to public rights of way, housing or schools, and within the security-protected area of the installation to prevent vandalism.	✓	Conforms with BAT 4 (including BAT 4a)
Storage areas should be located to eliminate or minimise the double handling of wastes within the installation.	✓	Conforms with BAT 4 (including BAT 4a)
Storage areas should be clearly marked and signed with regard to the quantity and hazardous characteristics of the wastes stored therein	✓	Conforms with BAT 4
The total maximum storage capacity of the site should be clearly and unambiguously stated in writing, accompanied with details of the method used to calculate the volumes held against this maximum and set out in the site plan. The stated maximum capacity of storage areas should not be exceeded, and the site plan updated to reflect any changes before they are implemented.	✓	Conforms with BAT 4
All containers should be clearly labelled with the date of arrival, relevant hazard code(s), chemical identity and composition of the waste and a unique reference number or code enabling identification through stock control and cross-reference to pre-acceptance and acceptance records. All labelling should be resilient enough to stay attached and legible throughout the whole time of storage at the installation.	✓	Conforms with BAT 4
Storage area drainage infrastructure should ensure that all contaminated run-off is contained, that drainage from incompatible wastes cannot come into contact with each other and that fire cannot spread between storage / treatment areas via the drainage system.	✓	Sealed drainage systems present for all reception, storage and treatment areas.
Procedures must be in place for the regular inspection and maintenance of storage areas, including drums, vessels, pavements and bunds. Inspections should pay particular attention to signs of damage, deterioration and leakage. Records should be kept detailing action taken. Faults must be repaired as soon as practicable. If containment capacity or capability of bund, sump or pavement is compromised, (unless effecting a repair is more expedient and working with wastes in close proximity does not compromise safety), then waste must be immediately removed until the repair is completed.	✓	Conforms with BAT 4
There should be daily inspection of the condition of containers and pallets and written records should be kept of these inspections. If a container is found to be damaged, leaking or in a state of deterioration, it should immediately be over-drummed, or the contents transferred to another container or processed.	✓	Conforms with BAT 4

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Over-drumming should be seen as an emergency measure and take place, if appropriate, in a designated location equipped with Local Exhaust Ventilation (LEV) as necessary. All appropriate information should be transferred onto the label of the new container. Large quantities of wastes in over-drums should be avoided by re-drumming once the incident leading to overdrumming has been dealt with. Pallets damaged to the extent that the stability of the containers is or may become compromised should be replaced. "Plastic shrink wrap" should only be used to provide secondary stability to drum/container storage in addition to the use of sound pallets.	✓	
There should be vehicular and pedestrian access at all times to the whole of the storage area such that the transfer of containers is not reliant on the removal of others that may be blocking access.	✓	See Drawing BF5023/09/03
All spillages of hazardous wastes should be logged, where spillages >200 litre then additionally the Regulator should be informed.	✓	
Activities that create a clear fire risk should not be carried out within the storage area, even if it is not formally classified as hazardous. Examples include grinding, welding or brazing of metal- work, smoking, parking of normal	✓	No fires or smoking allowed on site
Turnover		
Storage within the reception area should be for a maximum of five working days. Following receipt, wastes should be treated or removed off-site as soon as possible. The total storage time will depend upon the characteristics of a particular site and the waste types being stored. For example, on a site in a sensitive location handling hazardous wastes, it may be appropriate to limit storage times to one month. Other non-hazardous wastes, however, may be held on-site for longer periods. However, all waste should be treated or removed off site within a maximum of six months from the date of receipt.	✓	
Storage of drummed waste and other containerised wastes such as IBCs		
Storage under cover for drummed waste has the advantage of reducing the amount of potentially contaminated water that may be produced in the event of any spillage and extending the useful life of the container. It is preferable that wastes are stored under cover. This should also apply to any container that is held in storage pending sampling and emptied containers. Covered areas must have adequate provision for ventilation by means of wall or roof vents or construction of the area, for example, open barn. Any such warehousing should meet the requirements of HSG71.	✓	
Containers should be stored in such a manner that leaks and spillages could not escape over bunds/edge of the sealed drainage area.	✓	
Containers should be stored with well-fitting lids, caps and valves, secured and in place.	✓	

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Storage areas for containers holding substances that are known to be sensitive to heat and light or reactive with water or moisture should be under cover and protected from water, heat and direct sunlight.	✓	
Storage areas for containers holding flammable or highly flammable wastes should meet the requirements of HSG 51, HSG71 and HSG76.	✓	
Aged Stock		
It is important to avoid accumulations of waste, which may in turn lead to a deterioration in the container resulting in spillage or, in extreme cases, the deformation of the container to such an extent that it cannot be moved.	✓	
Segregation		
In addition to the requirements of this document, the segregation of wastes should meet the requirements of HSG71 and be justified by risk assessment.	✓	Conforms with BAT 4
Storage of Laboratory Smalls		
Written procedures for the segregation and packing of laboratory smalls should be produced identifying; <ul style="list-style-type: none">How the hazards associated with each package are identified.How the risks of adverse reactions occurring between individual packages are assessed, and by whom.The level of competence, qualification and training required by those undertaking this assessment.How incompatible substances (i.e. those that could react to generate heat, fire or hazardous reaction products) are prevented from being stored within the same drum.How the wastes are to be packed and stored.How the wastes are to be recovered or disposed.	✓	Please Refer to Appendix 12
Incompatible substances should not be stored within the same drum	✓	
Sorting and repackaging of laboratory smalls should take place in a dedicated area/store. Once the wastes have been sorted according to hazard classification, with due consideration for any potential incompatibility problems, and repacked, then these drums should not be stored within the dedicated laboratory smalls area but should be removed to the appropriate storage area.	✓	
Transfer from tanker, drums and other containers in bulk storage		
All handling and transfer operations will be undertaken by competent staff	✓	Please Refer to Appendix 12 Conforms with BAT 5
Due consideration should be taken of the implications of scale-up from laboratory compatibility testing to bulk transfer and the Guidance is given in HSG143	✓	
Wastes in containers should be transferred into storage vessels by dip pipe to minimise splash, fume and odour.	✓	

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Transfer/discharge should only take place after compatibility testing has been completed and then only with the sanction of an appropriate manager. Approval should specify which batch/ load of material is to be transferred, the receiving storage vessel, equipment required, including spillage control and recovery equipment, and any special provisions relevant to that batch/load	✓	
If flammable chemicals are being transferred, particular caution has to be taken to avoid the generation of static electricity, with the subsequent risk of ignition. Guidance on the safe use and handling of flammable liquids is provided by the Health and Safety Executive and is contained within HSG140, including Guidance on the issue of static electricity build-up. There may be other regulatory requirements to consider such as the Dangerous Substances and Explosive Atmospheres Regulations	✓	
A representative sample of the receiving tank/vessel/container should be mixed in a proportional ratio with a sample of incoming waste stream that it is proposed to add to the tank/ vessel/container. The two samples should take account of the “worst-case” scenario of likely constituents. The particular test parameters will be driven by the wastes being bulked. As a minimum, records of testing should be kept including any reaction giving rise to: <ul style="list-style-type: none">• increase in temperature• viscosity change• separation or precipitation of solids• evolution of gases• evolution of odours	✓	Please Refer to Appendix 12
Bulking up into drums (includes drum, tank, tanker or small container transfers into drums)		
Bulking/mixing should only take place under instruction from and under direct supervision of a suitable manager/chemist and should be under Local Exhaust Ventilation (LEV) in appropriate cases. Odorous materials should not be bulked up. If bulking different batches, then a composite sample must be compatibility tested prior to bulking. Containers should be kept lidded/sealed as much as possible.	✓	Please Refer to Appendix 12 Conforms with BAT 5
Handling/transfer of waste is duly documented, validated prior to and verified after completion.	✓	
HSG 140 advises that gravity dispensing is avoided, unless physical protective devices are provided to prevent loss of the whole tanker contents.	✓	
Bulking of solid waste		
Bulking of different batches must not take place without compatibility testing. In appropriate cases, LEV should be used to control odour and dust. Drums should be manipulated using mechanical means, for example, forklift with rotating drum handling fitting. Liquid waste must not be added to solid wastes other than in ‘purpose-designed and built’ reaction vessel, that is, decanting of liquids into a skip containing bulked solids must not take place.	✓	Please Refer to Appendix 12 Conforms with BAT 2
Bulk storage vessels		

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Bulk storage vessels should be located on an impervious surface that is resistant to material being stored, with sealed construction joints within a bunded area with a capacity at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater.	✓	Please Refer to Appendix 12 Conforms with BAT 4
Vessels supporting structures, pipes, hoses and connections should be resistant to the substances (and mix of substances) being stored. There should be a routine programmed inspection of tanks, mixing and reaction vessels including periodic thickness testing. In the event of damage or significant deterioration being detected, the contents should be transferred to appropriate storage. These inspections should preferably be carried out by independent expert staff, and written records should be maintained of the inspection and any remedial action taken.	✓	
Vessels should not be used beyond the specified design life or used in a manner or for substances that they were not designed, Vessels should be inspected at regular intervals, with written records kept to prove that they remain fit for purpose.	✓	
As a general rule, no open-topped tanks, vessels or pits should be used for storage or treatment of hazardous or liquid wastes. Exceptions would require justification in the permit application	✓	Please Refer to Appendix 12 Conforms with BAT 4
Tanks and vessels should be equipped with suitable abatement systems and level meters with both audible and visual high-level alarms. These systems should be sufficiently robust and regularly maintained to prevent foaming and sludge build-up affecting the reliability of the gauges	✓	
All connections between vessels must be capable of being closed via suitable valves. Overflow pipes should be directed to a contained drainage system, which may be the relevant bunded area, or to another vessel provided suitable control measures are in place.	✓	
Plant and equipment taken out of use should be decontaminated and removed.	✓	
Tank & process pipework labelling		
All vessels should be clearly signed as to their contents and capacity and should have a unique identifier. Tanks should be appropriately labelled.	✓	Please Refer to Appendix 12
Other storage requirements		
Waste or raw materials in non-waterproof packaging should be kept under cover.	✓	Please Refer to Appendix 12
Container movement		

Indicative BAT requirements for waste storage	To be undertaken at the Installation	Comments
Drums and other mobile containers should only be moved between different locations (or loaded for removal off-site) in accordance with written procedures. The waste tracking system should then be amended to record these changes.	✓	Please Refer to Appendix 12

2.4 Waste Treatment

2.4.1 Waste treatment operations for both the Hazardous and Non-Hazardous elements of the proposed Lamby Way Transfer Stations shall consist of the mixing, blending, bulking and re-packaging of accepted waste for onward transfer. All waste treatment operations shall be carried out on areas of impermeable concrete as appropriate.

2.4.2 The main operational activities that occur at the facility for all wastes accepted at the site can be broadly categorised into the following process stages:

All Wastes

- Waste Receipt;
- Waste Storage within designated areas;
- Waste Processing or Stocking for Transfer; and
- Processed Waste Storage within designated areas prior to off-site transfer.

2.4.3 Biffa have developed several Standard Operating Procedures (SOPs) which provide a written template for site operations. Such SOPs are currently employed at the Cardiff Waste Management Resource Centre and consist of *SOP 05* (Bulking in Transfer Stations v5) and *SOP 06* (Laboratory Smalls Packing Procedure).

Bulking in Transfer Stations

2.4.4 *SOP 05* details the bulking waste treatment activity process which will be employed at the proposed Lamby Way Transfer Station. *SOP 05* separates the bulking activity into the following process stages:

- Pre-Assessment
- Compatibility Assessment
- General Bulking Procedure
- Solvent Bulking

2.4.5 *SOP 05* states that bulking will only be undertaken at the proposed Lamby Way Transfer Station once both a desk-based compatibility pre-assessment has been completed by the site chemist and a subsequent compatibility assessment has been completed. Wastes which are confirmed to be compatible with one another are subsequently bulked together.

2.4.6 No bulking of non-compatible wastes will be undertaken at the proposed site.

2.4.7 *SOP 05* also confirms the transfer and bulking procedures, the equipment to be used during this process and the vessels which compatible wastes are bulked into. The specified bulking vessels include UN-approved IBCs or 205l bung-top or clip top drums (General Bulking Procedure), and UN approved 205litre bung top drums or UN approved carbon impregnated IBCs (Solvent Bulking)

2.4.8 Further details on the Bulking Procedure at the proposed Lamby Way Transfer Station are presented in *SOP 05* which is included within **Appendix 12** of this document. *SOP 05* also contains references to the Health & Safety, Spillages and Record Keeping requirements for this treatment activity.

2.4.9 There will be no re-refining of waste oils, regeneration of spent solvents or decontamination of equipment containing PCBs undertaken at the proposed

facility. Accordingly, it is considered that BAT 42, BAT 43, BAT 44, BAT 46, BAT 47 and BAT 51 are not applicable.

Laboratory Smalls Packing Procedure

- 2.4.10 Much like *SOP 05*, the treatment procedure for accepted laboratory smalls waste has been incorporated into a standalone document (*SOP 06*). *SOP 06* separates the Laboratory Smalls Packing Procedure into the following process stages:
- Identification and Listing
 - Segregation
 - Packing
 - Labelling
 - Disposal
- 2.4.11 *SOP 06* states that prior to the packing of laboratory smalls waste, each individual element must be fully identified to confirm its chemical properties and potential to react with other chemicals/compound. This will be achieved by examining the labels attached to the bottles / containers should be observed, as these will usually provide all the required information. However, it is appreciated that labelling will not always provide the correct information, as there will always be situations where a label has been removed, or a substance has been placed into a bottle / container other than that in which it was supplied. Any apparently incorrect labelling must be investigated. Should further clarity regarding the contents be unavailable, the substance must be treated as an unknown.
- 2.4.12 Following the identification of the laboratory smalls, the waste is segregated in such a manner that ensures that no chemicals will be packed into the same drum which would have the potential to initiate, propagate or catalyse a serious incident or would infringe the CDG/ADR Regulations or would infringe Biffa systems / policies / procedures.
- 2.4.13 Once segregation has been achieved, the laboratory smalls will be packed. *SOP 06* states that before starting to pack laboratory smalls into any drum or other suitable outer packaging refer to the appropriate ADR Packing Method and Special Provisions for the substance to be packed, to ensure that the selected package is allowed. *SOP 06* also states the maximum net mass of a package and the maximum inner package size for the identified Packing Categories.
- 2.4.14 The packing process with *SOP 06* also states that when processing laboratory smalls in the Transfer Station, all unpacking, verification and packing must take place within the dedicated laboratory smalls area. Once a drum has been filled, it should be appropriately labelled removed for storage within the appropriate dispatch bay (considering any segregation requirements).
- 2.4.15 *SOP 06* states that each drum should be labelled for transportation, by reference to Chapter 3.2, Tables A & B of ADR 2017. Each drum will contain a mixture of different, but related substances, so it is likely that a UN number for a single substance will be inappropriate. It will therefore be necessary to identify an appropriate generic UN number as detailed in Sub-chapter 2.1.1 – 2.1.3 of ADR 2017. *SOP 06* also contains an indicative table of details of the main generic UN numbers for the identified Packing Categories.

- 2.4.16 *SOP 06* also outlines the disposal aspects of the laboratory smalls transfer process and the appropriate Health & Safety requirements for the proposed operation,
- 2.4.17 Further information on the proposed Laboratory Smalls Packing Procedure is contained *SOP 06*, a copy of this is provided in **Appendix 12**.
- 2.4.18 As with the operations undertaken at the Cardiff Waste Management Resource Centre, all IBCs and drums accepted onto the proposed Lamby Way transfer station will be treated following the transfer of their contents into the bulking vessels. Initially, this treatment will consist of the washing of said IBCs and drums to remove any residues still contained within. Once this process has been completed the cleaned ICBs and drums will either be re-used in the site operations and containers for future bulking operations or; if the IBCs/drums are in poor condition, be reduced in size by crushing, shredding or cutting for transfer off-site for appropriate treatment, disposal or re-processing.
- 2.4.19 Shredding of non-hazardous waste will be limited to shredding of washed plastic packaging wastes comprising confidential information. This shredded material will be transported and stored within a designated container/skip prior to transfer to an appropriately licenced facility for disposal/recovery.
- 2.4.20 Companywide Standard Operating Procedures have been prepared for the use of the drum crusher and shredder. Copies of these SOPs are included in **Appendix 12**.
- 2.4.21 Due to the nature of the proposed shredding activity, it is considered that BAT 27 and BAT 31 are not applicable for there is no risk of deflagration or risk of the emission of organic compounds to air from the shredding of this material.

BAT Assessment

- 2.4.22 The waste treatment operations comply with indicative BAT as outlined in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 6** below:

Table 6: Indicative BAT requirements for the Treatment of Waste

Indicative BAT requirements for the treatment of waste	To be undertaken at the Installation	Comments
<p>Provide adequate process descriptions of the activities and the abatement and control equipment for all of the operations such that the Regulator can understand the process in sufficient details to assess the operators proposals and in particular to be able to assess opportunities for further improvements. This should include:</p> <ul style="list-style-type: none"> • Diagrams of the main plant items where they have environmental relevance, for example, storage areas, tanks, treatment and abatement plant design, etc. • Waste types to be subjected to the process • Control system philosophy and how the control system incorporates environmental monitoring information • Process flow diagrams (schematics) • Summary of operating and maintenance procedures • A description of how protection is provided during abnormal operating conditions 	✓	<p>Drawing BF5023/09/03</p> <p>Appendix 7</p> <p>Appendix 12</p>

Indicative BAT requirements for the treatment of waste	To be undertaken at the Installation	Comments
In order to prevent any adverse or unexpected reactions and releases before transfer involving the following activities, testing should take place prior to the transfer: <ul style="list-style-type: none"> • tanker discharge to bulk storage • tank-to-tank transfer • transfer from container to bulk tank • bulking into drums/IBCs • bulking of solid waste into drums or skips 	✓	Please refer to Appendix 12
Any evolved gases and cause of odour should be identified. If any adverse reaction is observed, an alternative discharge or disposal route should be found.	✓	Please refer to Appendix 12
In order to track and control the process of change, there should be a written procedure for proposal, consideration and approval of changes to technical developments, procedural or quality changes	✓	Standard Operating Procedures employed at the existing Cardiff Waste Management Centre will be transferred to the proposed Lamby Way Site. These Standard Operating Procedures will be subject to continual reviews and revisions to ensure BAT processes are maintained and continuously improved. Conforms with BAT 2

2.4.23 The treatment of emptied drums and packaging wastes comprising confidential information complies with indicative BAT as outlined in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 7** below:

Table 7: Indicative BAT Requirements for the Drum Washing, Crushing, Shredding and Cutting

Indicative BAT requirements for the drum washing, crushing, shredding and cutting	To be undertaken at the Installation	Comments
Empty containers that are in sound condition and are free from residual waste should be sent for reconditioning and re-use. Those drums that are not able to be re-used should be cleaned to facilitate recycling or recovery by other means	✓	Conforms with BAT 24
BAT for pre-acceptance, waste characterisation and process control as outlined in earlier sections should be followed to prevent incompatible reactions from wash waters or residues.	✓	
Drums containing (or which have contained): <ul style="list-style-type: none"> • flammable and highly flammable wastes¹ • volatile substances² that cannot be recovered, should not be subject to crushing, unless the residues have been removed and the drum cleaned.	✓	
Processing of containers should only be undertaken following written instruction. These instructions should include which containers is to be processed and the type of container to hold residues.	✓	There will be no shredding of baled waste or metallic waste. All dangerous items (e.g. gas cylinders) will be removed from the material to be shredded Drums and packaging will be cleaned prior to treatment. Conforms with BAT 26a, BAT 26b and BAT 26c

Indicative BAT requirements for the drum washing, crushing, shredding and cutting	To be undertaken at the Installation	Comments
<p>Emissions to air should be controlled by ensuring:</p> <ul style="list-style-type: none"> • drum crushing and shredding plant is fitted with an extractive vent system linked to abatement, for example, an oil scrubber and activated carbon filter • the abatement system should be interlocked such that the plant cannot operate unless the abatement system is working • all cutting operations should be subject to LEV 	✓	Conforms with BAT 14d and BAT 25
<p>BAT techniques for emissions to water include the need to:</p> <ul style="list-style-type: none"> • keep skips for the storage of crushed/cut drums covered • sealed system, e.g. chute, for containment of residues • sealed drainage 	✓	

¹ As defined by the Special Waste Regulations 1996

² A volatile substance can be defined as that with a vapour pressure of > 1.5mm Hg at 25°C

2.5 Raw Materials

Raw Material Selection

- 2.5.1 The nature of the proposed waste transfer activities at the Lamby Way Site will use minimal raw materials as site treatment activities involve the mixing, blending, bulking and re-packaging of hazardous and non-hazardous waste and re-packaging of laboratory smalls. Details of the raw materials that will be used at the site to carry of the aforementioned activities are presented in **Table 9**.
- 2.5.2 The procedures for raw materials selection comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 8** below:

Table 8: Indicative BAT Requirements for the Raw Material Selection

Indicative BAT requirements for the raw material selection	To be undertaken at the Installation	Comments
The Operator should maintain a list of raw materials and their properties.	✓	Refer to Table 6
The Operator should have procedures for the regular review of new developments in raw materials and for the implementation of any suitable ones with an improved environmental profile.	✓	Limited to fuels, oils, greases and detergents
The Operator should have quality-assurance procedures for controlling the impurity content of raw materials.	✓	Refer to Section 2.1 & Section 2.2
The Operator should complete any longer-term studies needed into the less polluting options and should make any material substitutions identified.	✓	Limited to fuels, oils, greases and detergents

Material Minimisation Audit

- 2.5.3 The primary raw material used in the proposed waste treatment activities will be fuel oils, greases/oils and detergents consumed by plant utilised in the material treatment processes. Considering this, it is not considered practicable to substitute these raw materials for waste (BAT 22).
- 2.5.4 Fuel storage infrastructure will be regularly inspected and maintained to minimise the potential for leaks.
- 2.5.5 Oils, greases and detergents will be ordered in appropriate quantities depending on their shelf life and the amount guaranteed to be used in that period.

Table 9: Raw Materials Usage (Hazardous (S5.3 Part A(1) (a)(iii), S5.3 Part A(1) (a)(iv) & S5.6 Part A(1) (a)) and Non-Hazardous Waste Transfer Activities)¹

Substance	Chemical composition	Maximum Amount Stored On-Site	Annual Throughput	Application	Environmental behaviour and fate	Potential Environmental Impact	Storage arrangements	Assessment of Alternatives
Fuel Oils (Diesel - including red diesel) for site mobile plant	Hydrocarbons with trace additives	2,000 litres (2 tonnes)	Storage capacity of 5,000 litres (5 tonnes / yr)	Fuel for plant and equipment	Insoluble and floats on water. Low biodegradation in soil.	Contamination of land and controlled waters and health risk to end users (i.e. humans, wildlife)	Fuels to be stored in fit-for-purpose double skinned or bunded fuel tank over areas on impermeable pavement. Refuelling area to be on areas of impermeable pavement Spill kits to be located in strategic locations across the facility.	Essential for operation of various items of plant Alternatives limited to biodiesel. No guarantee of supply available.
Greases/oils for site mobile plant	Hydrocarbons with trace additives	Grease – 100 litres (0.1 tonnes) Oil – 200 litres (0.2 tonnes)	Not known – likely to be <1000 litres / yr (<1 tonne / yr)	Plant and equipment maintenance	Insoluble and floats on water. Low biodegradation in soil. Fate is ultimately 100% to air – low volatility	Contamination of land and controlled waters and health risk to end users (i.e. humans, wildlife)	Fuels to be stored in fit-for-purpose double skinned or bunded fuel tank over areas on impermeable pavement. All containers to be stored in designated areas with impermeable surfacing and drip/spills trays. Spill kits to be located in strategic locations across the facility.	Essential for operation of various items of plant at the facility. No readily available alternatives with equivalent properties exist.
Detergent for site cleaning	Synthetic chemical compounds	200 litres (0.2 tonnes)	Not known – likely to be <1000 litres / yr (<1 tonne / yr)	Wash down of treatment plant and containment area	Toxic to aquatic environment	Eutrophication of aquatic environment Toxic to aquatic life	All containers to be stored in designated areas with impermeable surfacing and drip/spills trays. All areas where detergents to be utilised to be serviced by a sealed foul drainage system	Use of less persistent/ biodegradable detergents where appropriate

¹ Example Safety Datasheets for each substance are presented in **Appendix 14**

2.6 Water Use

2.6.1 Water use onsite is provided via a mains connection.

2.6.2 Water consumption onsite is via the following onsite processing activities:

- General site cleaning;
- Staff welfare facilities;
- Cleaning of storage and packaging waste to be treated;
- Dust management in external areas.

2.6.3 The consumption figures for water use will be reviewed and assessed on an annual basis as part of the EP reporting requirements. It is proposed to conduct a water efficiency audit within 1 year of Permit issue. The audit will inform water reduction techniques to be employed onsite, e.g. via use of collected rainwater for dust suppression activities and site cleansing.

2.6.4 The site will operate robust water use protocols and apply appropriate techniques to ensure efficient use of water. Techniques employed at the site will include:

- The use of trigger controls on washing equipment (BAT 19a);
- Where feasible and safe to do so water will be recirculated (dependent on activity that water is being used for) (BAT 19b);

2.6.5 The procedures for water efficiency comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 10** below.

Table 10: Indicative BAT Requirements for Water Efficiency

Indicative BAT requirements for water efficiency	To be undertaken at the Installation	Comments
The Operator should carry out a regular review of water use (water efficiency audit) at least every 4 years. If an audit has not been carried out in the 2 years prior to submission of the application and the details made known at the time of the application, then the first audit should take place within 2 years of the issue of the Permit. • Water-efficiency objectives should be established, with constraints on reducing water use beyond a certain level being identified (which usually will be usually installation- specific).	✓	
Within 2 months of completion of the audit, the methodology used should be submitted to the Regulator, together with proposals for a time-tabled plan for implementing water reduction improvements for approval by the Regulator.	✓	
The following general principles should be applied in sequence to reduce emissions to water: • Water-efficient techniques should be used at source where possible...	✓	Conforms with BAT19a

Indicative BAT requirements for water efficiency	To be undertaken at the Installation	Comments
Measures should be in place to minimise the risk of contamination of surface waters or groundwater by fugitive releases of liquids or solids	✓	All waste storage and treatment area consist of impermeable concrete pavement and sealed drainage system. Conforms with BAT 19c
The water-quality requirements associated with each use should be established, and the scope for substituting water from recycled sources identified and input into the improvement plan.	✓	
Most wastewater streams will however need some form of treatment (see Section 2.2.2 on page 62 of guidance document for techniques) but for many applications, the best conventional effluent treatment can produce water that is usable in the process directly or when mixed with fresh water. Though treated effluent quality can vary, it can often be recycled selectively - used when the quality is adequate, discharged when the quality falls below that which the system can tolerate.	✓	Leachates, leakages and packaging wash waters will be directed to isolated storage tanks and removed from the proposed site by tanker for onward treatment/disposal.
Water usage for cleaning and washing down should be minimised by: <ul style="list-style-type: none"> • vacuuming, scraping or mopping in preference to hosing down; • reusing wash water (or recycled water) where practicable; • using trigger controls on all hoses, hand lances and washing equipment. 	✓	
Fresh water consumption should be directly measured and recorded regularly at every significant usage point - ideally on a daily basis.	✓	Water provided to proposed site via a mains connection

2.7 Waste Handling, Recovery and Disposal

- 2.7.1 The production of waste materials from the treatments processes undertaken at the proposed Site will be minimal as near enough 100% of the accepted waste will be blended, bulked and repackaged for onward transit/recovery/disposal.
- 2.7.2 Should any recyclable materials be identified that are not a constituent part of the treatment process, these will be segregated and stored temporarily within the Installation boundary prior to onward reprocessing.
- 2.7.3 Waste materials dispatched from the Installation for onward processing for recovery or disposal will be subject to Duty of Care checks and the production of Duty of Care documentation. Electronic records will be made of the following prior to dispatch for each load:
- Waste Type;
 - Waste Quantity;
 - EWC Code; and
 - Recovery/Disposal Site.
- 2.7.4 Any waste produced at the site as a result of the proposed activities (e.g. crushed washed metal drums) will be assigned the correct EWC Code prior to onward transport and will be accompanied by the correct documentation.

- 2.7.5 Monitoring of waste production levels will be conducted on a monthly basis. Waste returns will be completed and forwarded to the NRW on an agreed timescale as stipulated in the Permit.
- 2.7.6 If necessary, during the operation of the Installation, waste prevention opportunities will be reviewed on an annual basis.
- 2.7.7 The waste management techniques employed at the site complies with indicative BAT requirements for waste management in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown below.

Table 11: Indicative BAT Requirements for Waste Management

Indicative BAT requirements for waste management	To be undertaken at the Installation	Comments
Identification of Waste Streams	✓	Waste returns produced and provided to Natural Resources Wales on an agreed frequency
Waste minimization measures considered	✓	
Record Keeping	✓	

- 2.7.8 The procedures for waste recovery or disposal comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 12** below.

Table 12: Indicative BAT Requirements for Waste Recovery or Disposal

Indicative BAT requirements for waste recovery or disposal	To be undertaken at the Installation	Comments
Waste production should be avoided wherever possible. Any waste that is produced should be recovered, unless it is technically or economically impractical to do so.	✓	
Where waste must be disposed of, the Operator should provide a detailed assessment identifying the best environmental options for waste disposal - unless the Regulator agrees that this is unnecessary. For existing disposal activities, this assessment may be carried out as an improvement condition to a timescale to be approved by the Regulator.	✓	
Contaminated containers		
Most drums and IBC's are designed, manufactured and marked to enable reconditioning/refurbishment. As such 205 litre drums, 800 and 1000 litre IBCs should be cleaned and reconditioned to enable re-use where technically and economically possible.	✓	
Containers that cannot be re-used where there is no reconditioning market and which have been cleaned can be released into the secondary materials market.	✓	

2.8 Energy

- 2.8.1 The external waste storage and treatment activities are not considered energy intensive. All 'mobile' plant and equipment (e.g. forklift trucks) will be fuelled by diesel. The fuel efficiency of the items of plant and equipment will be improved by maintenance/servicing in line with manufacturers recommendations and preventing prolonged idling.

- 2.8.2 It is proposed to monitor energy consumption for 12 months after permit issue and provide an energy report to the NRW subsequent to this.
- 2.8.3 Electrical power for use in the Installation is provided via the mains supply onsite. There is no onsite gas supply.
- 2.8.4 The primary onsite electricity consumption is via the following plant and equipment:
- Offices, including heating (if not via a gas boiler);
 - Power tools and hand-held equipment; and
 - Power Wash
 - Site lighting
 - Shredder
- 2.8.5 The primary onsite liquid fuel consumption is via the following:
- Forklift trucks
- 2.8.6 An assessment of the energy consumption will be reviewed on a periodic basis as required by the Permit. Further details of the monitoring arrangements are included in the appropriate section to this Management Plan.
- 2.8.7 With regards to energy management techniques, the Installation will be managed to ensure that basic energy efficiency measures are undertaken during normal operations. Housekeeping and general maintenance procedures will be adopted to ensure that doors are closed unless access is required to the buildings. All equipment will be maintained to ensure efficient operation. The electrical supply for the site provides heating and lighting to the welfare and office areas. Staff will be trained to ensure unnecessary energy losses are minimised by switching off equipment when not in use.
- 2.8.8 Energy use at the Installation will be monitored and reported in accordance with the updated Permit requirements. An energy efficiency plan and energy balance record will be developed and implemented within 1 year of the issue of the Environmental Permit (BAT 23).
- 2.8.9 The procedures for basic low-cost energy standards comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 13** below.

Table 13: Indicative BAT Requirements for Basic Low-Cost Energy Standards

Indicative BAT requirements for basic low-cost energy standards	To be undertaken at the Installation	Comments
Basic energy requirements (1)		
The Operator should provide the energy consumption information	✓	
The Operator should provide Specific Energy Consumption (SEC) information	✓	
The Operator should provide associated environmental emissions	✓	
Basic energy requirements (2)		
Operating, maintenance and housekeeping measures should be in place in the following areas, where relevant:- • other maintenance relevant to the activities within the installation	✓	
Energy management techniques should be in place, according to the requirements of Section 2.3 on page 75 noting, in particular, the need for monitoring of energy flows and targeting of areas for reductions.	✓	

3.0 EMISSIONS CONTROL

3.1 Point Source Emissions to Air

- 3.1.1 As previously discussed, operations to be undertaken at the proposed site will primarily consist of the mixing, bulking and blending of incoming wastes, and also segregation under some circumstances, for onward transport.
- 3.1.2 The Site Operator has confirmed that of the materials undergoing crushing (metal drums) and shredding (plastic bottles) these are not of a nature that generate emissions. Furthermore, all material is appropriately cleaned prior to treatment.
- 3.1.3 Accordingly, it is considered there are no point source emissions to air from large scale fixed treatment processes. Hence, whilst the techniques outlined under BAT 14d will be applied, it is considered that the channelled emission to air abatement techniques presented in BAT 41 and BAT 45 are not applicable.
- 3.1.4 The only point source emissions relevant to this application are from mobile plant. In this instance, all plant utilised on site will be serviced and maintained in accordance with manufacturers recommendations. This will ensure that the equipment is operated in an optimal condition to ensure emissions are in accordance with quoted specifications.
- 3.1.5 No control measures, other than those described in section 3.1.4 (above) are proposed.

3.2 Point Source Emissions to Groundwater

- 3.2.1 There will be no point source emissions to groundwater. All wastes/resultant product materials will be contained within packaging or sealed container unit and stored in suitable storage bays, upon impermeable concrete with designated sealed drainage systems. The proposed blending and bulking up activities will also be sited upon impermeable surfacing.
- 3.2.2 It should be noted that due to the acceptance procedures in place and the engineered surfacing and sealed drainage to be provided, any precipitation percolating through the material and into the ground on a fugitive basis will not lead to the deposit of contaminants over a wider area as these will be contained within either the site-wide sealed drainage system or the individual storage bay drainage systems (as discussed in **Section 3.3**).

3.3 Point Source Emissions to Surface Water and Sewer

- 3.3.1 The waste transfer station at Lamby Way will be sited upon a suitable area of impermeable concrete with an associated site-wide sealed Sustainable Drainage System. Surface water from areas which are not utilised for waste storage is directed (along channels) through multiple oil interceptors towards a designated discharge point into public surface water sewer located to the southwest of the site boundary. Discharge from the designated discharge point will consist of clean uncontaminated water and be restricted to 5l/s.
- 3.3.2 In accordance with BAT 19c, all impermeable surfacing at the proposed site will be installed under the supervision of an appropriately qualified engineer and produced in accordance with appropriate industry guidance (BS EN 206/1, BS8500/2 & BS8110-1/BS EN 1992-1-1).

- 3.3.3 In addition to the dedicated drainage system and discharge point, a storage tank with a maximum capacity of 420m³ will be installed along the western boundary of the proposed site. This storage tank will comprise of double skinned construction and will be fitted with both high level and leak detection alarms. The primary aim of this storage tank will be to provide redundancy to the surface water management system during a storm event when potential inputs to the surface water drainage system exceeds the outflow rate. The capacity of the storage tank was determined following MicroDrainage modelling which examined a 1 in 10-year storm event (+30% for climate change). The modelling indicated that under these conditions the storage tank would provide storage for up to a 720-minute winter storm, this would allow time for site staff to arrange for a tanker to remove collected site drainage. Calculations supporting the selection of this tank volume are presented in a standalone Sustainable Drainage Statement which is provided in **Appendix 13**.
- 3.3.4 Additionally, each storage bay at the proposed facility will be roofed (BAT 19e) and fitted with separate, dedicated drainage systems which will collect any generated liquids and isolate these with a storage tank (BAT 19f). A drainage system and storage will be installed at the front of each storage bay with storage bay specific maximum capacities. The drainage system within each storage bay will be separate from other site drainage systems to negate the potential for cross-contamination of run-off. Additionally, the floor of each storage bay will be sloped towards the back of the bay to encourage any liquids to flow away from the bay opening.
- 3.3.5 Each storage sump/tank will be visually inspected by site staff to confirm liquid levels. Where required, water from the relevant storage tank(s) will be transferred offsite by tanker, or similarly suitable means, for disposal at an appropriately permitted facility.
- 3.3.6 Drainage from the engineered surfaces provided within the waste storage buildings will be to underground isolation tanks/sump via drainage pipes. Run-off from engineered surfaces within waste storage buildings will be removed from site via tanker to an appropriately permitted facility for treatment/disposal.
- 3.3.7 The levels of liquids contained within the storage bay tanks will be inspected during daily operation and maintenance checks. Each storage tank/sump will be marked with a line to denote the maximum level. Should this inspection identify that liquid levels are at (or exceeding) this level then arrangements will be made for the removal of the liquid from the site by tanker, or other suitable means.
- 3.3.8 The daily operation and maintenance checks will also include the examination of the integrity of the storage bay drainage system. Furthermore, upon emptying of a storage bay drainage tank, it will be inspected for signs of leaks.
- 3.3.9 Surface water from any areas beyond the boundary of the site will be encouraged to shed away from the operational area to prevent unnecessarily contributing to the overall water balance and/or depositing fines on the engineered surface. General indicative site drainage and dedicated storage bay storage tank capacities are illustrated in **Drawing Reference BF5023/09/04**.
- 3.3.10 Domestic foul water emanating from the welfare facilities at the reception office will be directed towards a foul sewer.

- 3.3.11 In the event of an overflow from a storage bay drainage tank the drainage network associated within the unloading area is fitted with an isolation chamber and storage tank (secondary containment in accordance with BAT 19d) which will be closed in the event of the spillage to prevent the discharge of any overflow liquids from the site to surface water.
- 3.3.12 In instances of severe discharges of leaks/overflows from waste storage/processing areas, the unloading area drainage system can provide supplementary storage capacity (BAT 19i).
- 3.3.13 Following the resolution of the leak/overflow the unloading area drainage system will be emptied and cleaned prior to reopening the isolation chamber outlet. Collected liquids will be transported to an appropriately permitted facility for treatment/disposal.
- 3.3.14 The site's drainage system (including bay storage tanks and pipework) will be inspected as part of the site's daily Operation and Maintenance Checks with any defects brought to the attention of the Site Manager (BAT 19h).
- 3.3.15 The procedures for the control of point source emissions to surface water and sewer comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 14** below.

Table 14: Indicative BAT Requirements for the Control of Point Source Emissions to Surface Water and Sewer

Indicative BAT requirements for the control of point source emissions to surface water and sewer	To be undertaken at the Installation	Comments
<p>The following general principles should be applied in sequence to control emissions to water:</p> <ul style="list-style-type: none"> contamination risk of process or surface water should be minimised (see also Section 2.2.5 on page 71) where any potentially harmful materials are used measures should be taken to prevent them entering the water circuit 	✓	
Impermeable surface	✓	<p>All waste storage and treatment activities will be undertaken on impermeable surfacing which will be installed in accordance with appropriate engineering standards and overseen by a qualified engineer.</p> <p>Conforms with BAT 19c</p>

Indicative BAT requirements for the control of point source emissions to surface water and sewer	To be undertaken at the Installation	Comments
Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels	✓	<p>The unloading area is fitted with an isolation chamber and storage tank in the event of a leak or spill during unloading and loading operations, or in the unlikely event that a leak/spill with any storage bay escape beyond its individual bay containment measures. Tertiary containment (Penstock Valves) will be installed in the site wide drainage system at the point of discharge from the site.</p> <p>Leak detection and high-level alarm systems will be installed on the 420m³ and 9m³ site drainage storage tanks.</p> <p>Storage bay drainage tanks will be inspected daily as part of Operational and Maintenance checks.</p> <p>Conforms with BAT 19d</p>
All waste storage and treatment areas will be roofed	✓	Conforms with BAT 19e
Water streams within the site will be segregated	✓	<p>Clean run-off from precipitation will be handled by the site wide drainage system and discharged from the site.</p> <p>Drainage from waste storage and treatment areas will be contained within storage tanks installed in each storage/treatment bay.</p> <p>Conforms with BAT 19f</p>
Adequate drainage infrastructure should be installed at the site	✓	<p>Drainage infrastructure will be designed bearing in mind the characteristics of incoming waste and storm events.</p> <p>Conforms with BAT 19g</p>
Design and maintenance provisions to allow detection and repair of leaks	✓	<p>Leak detection and high levels alarms will be installed on the 420m³ and 9m³ site drainage storage tanks.</p> <p>Storage bay drainage tanks will be inspected daily as part of Operational and Maintenance checks.</p> <p>Conforms with BAT 19h</p>
Appropriate buffer storage capacity	✓	<p>Site drainage storage tank capacity designed using modelling replicating a 1 in 10-year storm event (+30% for climate change)</p> <p>Specific storage bay drainage tanks and the unloading bay isolation network are designed to consider 125% of the capacity of the largest tank stored within each storage bay.</p> <p>Conforms with BAT 19i</p>

3.4 Fugitive Emissions to Air

- 3.4.1 Due to the packaged/sealed and low dust generation nature of the wastes accepted and proposed at the proposed waste transfer station, it is considered that the control of fugitive emissions at the site will be achieved largely through the design and implementation of good management practices. Accordingly, no active dust suppression measures will be implemented.
- 3.4.2 If materials that may have the potential to generate dust when being stored and moved are to be handled at the site via a subsequent Permit Variation, then a Dust Management Plan will be developed and implemented.
- 3.4.3 The following control measures will be employed to reduce the incidence of litter emissions:
- All waste storage will be conducted in accordance with good housekeeping practices. The storage is unlikely to give cause to litter emissions due to the nature of the waste type, i.e. not the windblown fraction, however foreign materials may be present which will be manually picked out;
 - All non-compliant residual waste will be stored in an enclosed receptacle/container within a suitable area of the inert waste treatment site; and
 - All deleterious material with the potential to be windblown as removed from site will be sheeted or in enclosed containers, whilst in transit.
- 3.4.4 The effectiveness of the dust and litter control has been further considered via the fugitive risk assessment and the outcome of this assessment is included within **Appendix 5**.
- 3.4.5 As previously discussed, the activities at the proposed site consist of the storage, mixing, blending, bulking and re-packaging of accepted waste for onward transfer. All waste accepted at the site will be stored in appropriate containers which will remain closed/sealed, apart from a short period of time when mixing and blending operations are undertaken. As such it is considered that the potential for the diffuse emission of organic compounds to air is limited.
- 3.4.6 In light of the above, it is proposed that the proposed site operations do not fall under any of the categories listed in BAT 9. It is considered that BAT 9 is not applicable to the proposed facility. Nevertheless, olfactory odour monitoring will be undertaken (and recorded) as part of the Operation and Maintenance Daily Checks (**Appendix 9**). Accordingly, whilst it is proposed that BAT 9 is not applicable, Biffa will proactively undertake olfactory monitoring (sniff test) a technique specified in the BAT Conclusion Document (2018/1147).
- 3.4.7 The procedures for the control of fugitive emissions to air comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 15** below.

Table 15: Indicative BAT Requirements for the Control of Fugitive Emissions to Air

Indicative BAT requirements for the control of fugitive emissions to air	To be undertaken at the Installation	Comments
Dust – The following general techniques should be employed where appropriate: <ul style="list-style-type: none"> • Covering of skips and vessels • Where dust generation is unavoidable, use of sprays, binders, stockpile management techniques, windbreaks and so on; • Regular wheel and road cleaning (avoiding transfer of pollution to water and wind blow) • ...minimizing drops. 	✓	<p>Proposed management techniques adequately minimise diffuse emissions. Techniques include, minimising drop heights, limited traffic speeds, appropriate site layout and maintenance on the equipment, frequent cleaning of traffic and waste processing and storage areas.</p> <p>Site Operator experience from their existing Curran Embankment facility has identified that the materials to be accepted at the proposed facility are not dust generating in nature. Accordingly, it is not considered appropriate to install dust abatement techniques.</p> <p>Conforms with BAT 14</p>
VOCs <ul style="list-style-type: none"> • When transferring volatile liquids, the following techniques should be employed – subsurface filling via (anti-syphon) filling pipes extended to the bottom of the container, the use of vapour balance lines that transfer the vapour from the container being filled to the one being emptied, or an enclosed system with extraction to suitable abatement plant. 	✓	
<p>A leak detection and repair (LDAR) programme should be established for installations handling solvents and similar volatile materials. In addition:</p> <ul style="list-style-type: none"> • Non-intrusive tank volume measurements should be used. • Contaminated waters have potential for odours and should be stored in covered tanks. • Drum storage (see Section 2.1.3 on page 32) should be regularly inspected • Maintenance schedules should ensure regular cleaning/desludging of tanks to avoid large scale decontamination activities. All odorous materials being transferred directly to sealed containers 	✓	<p>Conforms with BAT 5 and BAT 14</p> <p>Whilst BAT 9 is not considered applicable at the proposed facility, olfactory odour monitoring (sniff testing) will be undertaken (and recorded) as part of the Operation and Maintenance Daily Checks.</p>

3.5 Fugitive Emissions to Surface Water and Groundwater

- 3.5.1 It is appreciated that the nature of the material to be accepted and processed at the proposed Waste Transfer Station has the potential to generate fugitive emissions to surrounding surface water and groundwater receptors, however, it is proposed that the site engineering, pollution prevention management procedures employed at the site will prevent the discharge of such emissions.
- 3.5.2 A spill procedure is in place, as outlined in **Section 5.6** to deal quickly with any spillages and leaks of contaminative materials.
- 3.5.3 Surface water run off generated by precipitation, will be directed away from the main storage operations and processing localities through the drainage network discussed in **Section 3.3** and discharged via a designated point to public surface water sewer

3.5.4 Drainage within the waste storage and treatment areas of the site will be managed by the separate storage bay drainage system discussed in **Section 3.3**.

3.5.5 The procedures for the control of fugitive emissions to surface water and groundwater comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 16** below.

Table 16: Indicative BAT Requirements for the Control of Fugitive Emissions to Water

Indicative BAT requirements for the control of fugitive emissions to water	To be undertaken at the Installation	Comments
<p>For subsurface structures:</p> <ul style="list-style-type: none"> establish and record the routing of all installation drains and subsurface pipework; identify all sub-surface sumps and storage vessels; engineer systems to minimise leakages from pipes and ensure swift detection if they do occur, particularly where hazardous (ie. Groundwater-listed) substances are involved; provide secondary containment and/or leakage detection for sub-surface pipework, sumps and storage vessels; establish an inspection and maintenance programme for all subsurface structures, eg. pressure tests, leak tests, material thickness checks or CCTV 	✓	Conforms with BAT 19
<p>All sumps should:</p> <ul style="list-style-type: none"> be impermeable and resistant to stored materials; be subject to regular visual inspection and any contents pumped out or otherwise removed after checking for contamination; where not frequently inspected, be fitted with a high level probe and alarm, as appropriate; be subject to programmed engineering inspection (normally visual, but extending to water testing where structural integrity is in doubt). 	✓	Conforms with BAT 19
<p>For surfacing:</p> <ul style="list-style-type: none"> design appropriate surfacing and containment or drainage facilities for all operational areas, taking into consideration collection capacities, surface thicknesses, strength/reinforcement; falls, materials of construction, permeability, resistance to chemical attack, and inspection and maintenance procedures; have an inspection and maintenance programme for impervious surfaces and containment facilities; unless the risk is negligible, have improvement plans in place where operational areas have not been equipped with: <ul style="list-style-type: none"> an impervious surface spill containment kerbs sealed construction joints connection to a sealed drainage system 	✓	Conforms with BAT 19

Indicative BAT requirements for the control of fugitive emissions to water	To be undertaken at the installation	Comments
<p>All above-ground tanks containing liquids whose spillage could be harmful to the environment should be bunded. For further information on bund sizing and design, see "Releases to water references" on page 131. Bunds should:</p> <ul style="list-style-type: none"> • be impermeable and resistant to the stored materials; • have no outlet (that is, no drains or taps) and drain to a blind collection point; • have pipework routed within bunded areas with no penetration of contained surfaces; • be designed to catch leaks from tanks or fittings; • have a capacity greater than 110 percent of the largest tank or 25 percent of the total tankage, whichever is the larger; • be subject to regular visual inspection and any contents pumped out or otherwise removed • under manual control after checking for contamination; • where not frequently inspected, be fitted with a high-level probe and an alarm, as appropriate; • where possible, locate tanker connection points within the bund, otherwise provide adequate • containment; • be subject to programmed engineering inspection (normally visual, but extending to water testing where structural integrity is in doubt) 	✓	

3.6 Control of Odours

3.6.1 The operational facility at Lamby Way will consist of the processing and storage/transfer of both hazardous and non-hazardous materials. Given that material will arrive onsite fully packaged and/or contained within sealed containers it is considered that the likelihood of odours arising as a result of the permitted operations is considered minimal. However, it is acknowledged that there is the potential for a low proportion of odour generating material to be incorporated into specific waste streams which could result in the generation and release of odour during the following operations:

- Raw material reception, storage and handling;
- Transfer, handling and mechanical turning of material; and
- Collection and Storage of liquid generated by accepted materials.

3.6.2 As previously discussed, waste treatment and storage operations will be undertaken within the internal storage bays, however, the following controls will be implemented at the proposed site to ensure that the potential for odour emissions is kept to a minimum and that any odour emission risk are appropriately managed.

3.6.3 At the entrance driveway, the chemist will evaluate the incoming waste load in accordance with site procedures. The driver will be directed to the designated loading/unloading area. If waste does not meet the conditions specified in the Environmental Permit, or is particularly odorous, the load(s) will be rejected in accordance with site procedures.

- 3.6.4 The vehicle, quantity, type and origin of the waste will be recorded in accordance with the Environmental Permit.
- 3.6.5 Biffa will employ strict control so as to prevent the acceptance of malodorous wastes and retain the right to reject any waste which is deemed to jeopardise the ability to manage the site and prevent the emission of unacceptable odours. Rejected waste will be diverted straight to an appropriate landfill or treatment facility.
- 3.6.6 It is not proposed to accept large quantities of putrescible wastes at the site bulking/ transfer. Any such wastes that are accepted and stored at the site will be accepted in suitable packaging to prevent pests and emissions.
- 3.6.7 If malodorous waste is identified by the site operators during load discharge/offloading, then the waste will be segregated into a designated quarantine area and then diverted off site as soon as possible for final disposal or further treatment.
- 3.6.8 During normal operational periods, incoming waste will be stored for time periods in accordance with those presented in
- 3.6.9 **Table 4**, so as to maintain the availability of waste for short periods of non-delivery (e.g. Bank Holidays).
- 3.6.10 The washing of emptied storage containers will be undertaken within an internal storage bay with all waters generated from the washing of emptied storage vessels (including storage drums) collected in a suitable container. This will then be stored in the appropriate storage bay prior to off-site disposal.
- 3.6.11 Operational areas within the facility, external roads and drainage channels will be regularly cleaned to prevent the build-up of odour from old degrading material. The frequency and procedure for the cleaning activity will be developed and implemented in accordance with the maintenance plan for the facility.
- 3.6.12 Considering the above, it is considered that a standalone Odour Management Plan (BAT 12) is not required for this facility as no nuisance is expected. Despite this assessment, daily olfactory monitoring of the site will be undertaken as part of the Operation and Maintenance Checks in accordance with BAT 10.
- 3.6.13 The procedures for odour control comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 17** below.

Table 17: Indicative BAT Requirements for Odour Ccontrol

Indicative BAT requirements for odour control	To be undertaken at the Installation	Comments
Where odour can be contained, for example within buildings, the Operator should maintain the containment and manage the operation to prevent its release at all times	✓	
Where odour generating activities take place in the open, (or potentially odorous materials are stored outside) a high level of management control and use of best practice will be expected.	✓	
Emphasis should be placed on –pre-acceptance screening and the rejection of specific waste... these may include dedicated sealed handling areas with extraction to abatement	✓	

3.7 Control of Noise & Vibrations

- 3.7.1 Proposed activities at the facility are not anticipated to cause detriment to the amenity of the locality. Due to the location of the site, in a predominantly industrial area, it is unlikely that site operations will intrude above established background levels. Notwithstanding this, as previously discussed, the nearest residential receptors to the site are properties located at a distance of c.50m to the north of the site boundary, beyond established trees and hedgerows and the Cardiff to London Paddington mainline railway. It is therefore considered that potential noise emissions are unlikely to generate complaints at nearby sensitive receptors especially when considered against the established background noise environment.

Noise Impact Assessment

- 3.7.2 As part of the planning application process for the development, Biffa commissioned a Noise Impact Assessment (NIA) to identify the predicted noise levels from the proposed site activities and how this compared to background noise levels. This NIA was prepared by BWB Consulting in March 2021 following the completion of baseline noise monitoring and assessment in March 2018. Copies of both documents are presented in **Appendix 11**.
- 3.7.3 To ensure that the noise impact assessment provided as realistic an analogue of operational site conditions, the noise levels associated with the existing Cardiff Waste Management Resource Centre were derived and applied to the proposed site location.
- 3.7.4 The NIA was undertaken in accordance with BS4142:2014+A1:2019 and states the following:
- Noise sources associated with the development are likely to be broadband in nature, with no distinguishable tones. On this basis a tonal penalty is not applicable;
 - There are no impulsive features associated with the development and no penalty has been applied;
 - The proposed plant operates continuously and no penalty for intermittency is applicable;
 - The nature of the proposed operational noise sources are also not dissimilar to the existing environment given that the site is surrounded by a number of commercial/industrial premises.
- 3.7.5 For the purposes of the NIA, the predicted noise levels associated with operational noise were predicted in outdoor living areas at a height of 1.5m for the daytime period only. The assessment has been undertaken in accordance with BS 4142:2014+A1:2019.
- 3.7.6 The highest predicted specific noise level at the receptors to the north east is 51 dB(A), equating to a rating level of 51 dB(A). The defined background noise level during the daytime is 49 dB LA90,1h for the daytime. Therefore, the daytime BS4142 assessment is 2 dB above background which indicates a low impact.
- 3.7.7 The highest predicted specific noise level at the receptors to the north west is 51 dB(A), equating to a rating level of 51 dB(A). The defined background noise level during the daytime is 49 dB LA90,1h for the daytime. Therefore, the daytime BS4142 assessment is 2 dB above background which indicates a low impact.

- 3.7.8 The NIA therefore concluded that the proposed site operations have a low impact on surrounding sensitive receptors. However, the NIA recommended that the shredder be located within either Bay 13 and/or Bay 14 to ensure maximum screening effect between the source and identified receptors.
- 3.7.9 As indicated in **Section 1.6**, under normal operations, no activities of any kind will be undertaken outside of 08:00 – 20:00 (Daytime hours) with no processing activities undertaken outside of 08:00hrs – 18:00 hrs Monday to Fridays and 08:00 – 13:00 hrs on Saturdays and Sundays.
- 3.7.10 In light of the findings of the NIA, it is proposed that a standalone Noise Management Plan is not required for this facility.

Vibrations

- 3.7.11 The waste operations to be carried out at the facility will not generate significant vibrations. Wastes will principally be delivered and stored in containers/skips which will be unloaded in such a manner that does not involve significant ground impacts capable of causing significant ground vibrations beyond the site boundary.
- 3.7.12 For health and safety requirements a speed limit of 5mph is implemented for all vehicles which minimises any vibrations associated with vehicles movement on the site. Internal tracking surfaces will be metalled to minimise the generation ground impacts from vehicles of potholes etc.

Site Layout Controls

- 3.7.13 Considering the NIA's findings, the following layout controls will be implemented to ensure that noise emissions from the site are strictly limited.
- 3.7.14 Items of site plant used for the treatment of packaging waste (i.e. reciprocal saw, drum crusher and packaging shredder) will be sited within the waste storage bays, thereby maximising the lateral distance between the emission source and sensitive receptors). Additionally, siting these items of plant in such a way will allow for the buildings to be used as noise screens.
- 3.7.15 Following the recommendation in the NIA, the shredded and drum crusher will be located within either Bay 13 and/or Bay 14 to ensure maximum screening effect between the source and identified receptors.
- 3.7.16 If deemed appropriate by competent site staff, additional noise control equipment (incl. designated enclosures) will be implemented during operations which utilise the pieces of equipment.
- 3.7.17 Furthermore, noise emission levels will be considered during the procurement of site plant to ensure that low-noise equipment is purchased wherever feasible.

Process Controls

- 3.7.18 Considering the NIA's findings, the following process controls will be implemented to ensure that noise emissions from the site are strictly limited.
- 3.7.19 Unloading, processing, and loading the material will be undertaken within strict operational parameters, to ensure that noise and vibration from the recycling activity is mitigated, as necessary. These include maximum loading/processing amounts, minimising material drop heights during loading/unloading, ensuring

- no plant is left to idle, implementation of speed limits on site and the maintenance of all internal service aprons/road.
- 3.7.20 All activities will be undertaken by trained members of staff, thereby reducing the likelihood of unnecessary noise emissions through misuse of equipment.
- 3.7.21 Operations at the site will not be undertaken outside the operational hours specified in **Section 3.7.6**. Accordingly, no noise emitting operations will be undertaken during the unsociable night-time periods, removing the potential adverse impact identified in the NIA.
- 3.7.22 All equipment will be inspected as part of Daily Operation and Maintenance Checks (**Appendix 9**). Any defects will be brought to the attention of the Site Management and the identified piece of equipment will be removed from use for servicing/repair.
- 3.7.23 Operation of the site will follow environmental guidance with regards to noise and vibration and will utilise appropriate control measures and monitoring to ensure that the noise and vibration from the facility complies with the relevant criteria and does not give rise to cause for annoyance.
- 3.7.24 Should unacceptable emissions of noise or vibration occur, the incident/cause of emission will be identified and recorded. An attempt will be made to ensure the noise/vibration source is removed or otherwise ameliorated, e.g. if the noise or vibration emissions originate from site plant or vehicles, then these will cease operating and undergo maintenance to identify the cause and correct the issue. A record will be made of such incidents within the Site Diary and corrective actions taken.

BAT Assessment

- 3.7.25 The procedures for the control of noise and vibration comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 19** below.

Table 18: Indicative BAT Requirements for Noise and Vibration

Indicative BAT requirements for noise and vibration	To be undertaken at the Installation	Comments
The Operator should employ basic good practice measures for the control of noise, including adequate maintenance of any parts of plant or equipment whose deterioration may give rise to increases in noise (for example, bearings, air handling plant, the building fabric, and specific noise attenuation kit associated with plant or machinery).	✓	Noise and vibration generated by the proposed operations have been assessed to not present a significant risk to any receptors. Nonetheless, appropriate measures are already implemented to further reduce the risk. Measures include maximum loading/processing amounts, minimising material drop heights during loading/unloading and ensuring no plant is left to idle. Further noise emission controls are discussed in Section 3.7. Conforms with BAT 18

Indicative BAT requirements for noise and vibration	To be undertaken at the Installation	Comments
The Operator should employ such other noise control techniques necessary to ensure that the noise from the installation does not give rise to reasonable cause for annoyance, in the view of the Regulator. In particular, the Operator should justify where Rating Levels ($L_{Aeq,T}$) from the installation exceed the numerical value of the Background Sound Level ($L_{A90,T}$)	✓	
Noise surveys, measurements, investigations (e.g. on sound power levels of individual items of plant) or modelling may be necessary for either new or for existing installations, depending upon the potential for noise problems. Where appropriate, the Operator should have a noise management plan as part of its management system.	✓	Appendix 11 Noise and vibration generated by the proposed operations have been assessed to not present a significant risk to any receptors during operational periods. Conforms with BAT 17

3.8 Control of Scavengers, Insects and Other Pests

- 3.8.1 It should be noted that whilst wastes accepted to the proposed site will be packaged (and therefore not directly open to the atmosphere) are not typically of a nature that could typically attract pests, i.e. non-putrescible. However, it is appreciated that some materials proposed to be accepted at the site s may have the potential to attract pests, therefore, the following measures shall be implemented to ensure the highest standards of operational practices are undertaken to mitigate any residual potential that exists.
- 3.8.2 The operational areas will be kept in a good state of repair. No food shall be consumed onsite within the operational area, only within the site's welfare facilities.
- 3.8.3 Although unlikely due to the nature of the proposed wastes to be accepted, should waste be received at the site that is already infested it will be consigned off site as a matter of priority. The waste producer will be contacted, and the NRW informed, and any such events will be recorded in the Site Diary.
- 3.8.4 Waste storage areas will be inspected throughout the working day by site personnel as instructed by the Site Operations Manager. A record of formal inspections and any pests/ scavengers noted will be made, along with corrective actions if required.
- 3.8.5 Insecticides and rodenticides will be used as necessary to eliminate or discourage pests. A suitably qualified pest control contractor will be appointed should specialist services be required.

3.9 Control of Litter

- 3.9.1 Visual inspections of the site and boundary daily to ensure that significant litter emissions are not emitted from the on-site activities. Any litter emissions noted will result in the actions described in Section 3.4.4 being taken. The resultant actions will be recorded in the Site Diary.

3.10 Control of Mud and Debris

3.10.1 In order to limit the formation of mud and debris at the facility the following procedures are in place:

- Entrance way and main site access roads are surfaced (tarmac or concrete), with the transfer station site also surfaced in concrete, which will prevent the general and subsequent tracking of mud and debris;
- No wastes are permitted to be deposited outside of the designated waste storage areas (i.e. on soft ground where mud could be trafficked);
- All vehicles hauling waste and recycled products will be sheeted (or instructed to do so) or fully enclosed where appropriate to avoid the loss of waste/materials during transport;
- All vehicles will be supervised during loading to ensure that vehicles are not overfilled; and
- A mechanical road sweeper will be deployed to the wider facility once a week or as necessary.

3.10.2 In the event that unacceptable amounts of mud or debris arising from the facility operations is spread either on to the wider area of the site or onto private and public highways outside the site, any available manual or mechanical means, over and above the measures listed, shall be employed to remove any deposits and thus maintain the cleanliness of the site and the adjacent public road.

4.0 MANAGEMENT SYSTEMS

4.1 Environment, Health, Safety and Quality System

- 4.1.1 The Facility will operate under the effective system of management accredited to ISO14001 (**Appendix 3**). Biffa also hold ISO9001 and ISO18001 accreditations with copies of their accreditations also presented in **Appendix 3**.
- 4.1.2 The certificate of registration to ISO14001, valid until 2nd September 2021 will cover the proposed Cardiff Waste Management Resource Centre within its scope.
- 4.1.3 A copy of the Biffa Group Integrated Management System Manual Index is included at **Appendix 12**. The index lists the Biffa Group policies, group standards (GS series documents), management operational guidance (MOG series documents which support individual GS documents), work instructions and supporting documents that form part of the overall IMS. Where relevant, divisions may also augment the IMS with further divisional guidance notes and site-specific management plans. It can be seen from the IMS index, that the EMS is an extensive and comprehensive system.
- 4.1.4 It is not intended to submit the full suite of documents referred to in the index as part of this application. However, where needed to demonstrate that specific BAT requirements are covered, a summary of relevant documents is provided.
- 4.1.5 Biffa's EMS is augmented by a number of local site-specific documents. These implement the requirements of the Biffa Group IMS/EMS on site. Again, due to their number, it is not intended to submit the full suite of documents referred, however, where needed to demonstrate that specific BAT requirements have been covered, a summary of relevant documents is provided.
- 4.1.6 The Biffa Group IMS/EMS complies with the requirements of BAT 1 in the general BAT conclusions. In particular, the main requirements are met by Group Standards GS01 – Integrated Management System and associated supporting guidance MOG01-01, GS03 – Environmental Management and associated supporting guidance MOG03-01, GS17 – Emergency Planning and Business Continuity and associated supporting guidance MOG17.
- 4.1.7 MOG01-01 addresses the following requirements of BAT1:
- Commitment of the management including senior management;
 - Definition of an environmental policy that includes continuous improvement of the environmental performance of the installation;
 - Planning and establishing the necessary procedures, objectives, and targets in conjunction with financial planning and investment;
 - Implementation of procedures, covering the areas within point IV of the general BAT conclusions for BAT 1. Within these, emergency preparedness and response are further covered by GS17/MOG17;
 - Checking performance and taking corrective action, covering the areas within point V of the general BAT conclusions for BAT1. Corrective and preventative actions are further dealt with by Biffa's compliance strategy which is further covered in GS3/MOG03;
 - Review by senior management of the EMS and its continuing suitability, adequacy, and effectiveness;
 - Consideration for the environmental impacts from the eventual decommissioning of the plant at the stage of designing a new plant, and throughout its operating life. This is achieved via the Procurement Department who are tasked under MOG01-01 with ensuring that

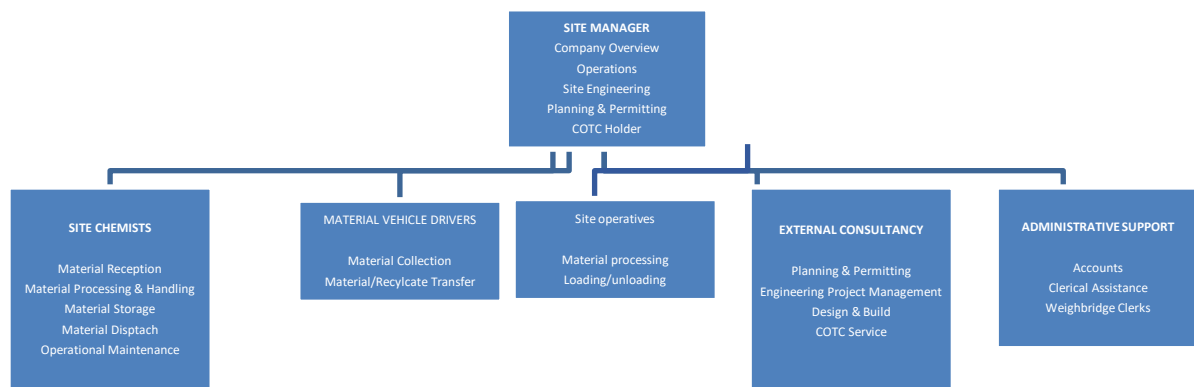
- procurement considers the life cycle and environmental impact of the business.
 - Following the development of cleaner technologies. This is also achieved via the Procurement Department policies.
 - Sectoral benchmarking. This is accomplished in line with MOG01-01 requirements for environmental and carbon management.
- 4.1.8 In compliance with this, Biffa undertakes an annual data capture exercise for the purposes of reporting scope 1 & 2 Green House Gas emissions, compliance with Pollution Inventory Returns, and Energy Savings Opportunity Scheme (ESOS). The methodology for collating the environmental metrics has been externally audited and classed as 'excellent'.
- 4.1.9 Further, during 2019, Biffa has made the transition from CRC to ESOS. Phase 2 ESOS audits have highlighted areas in the business where Biffa are able to implement projects with short term payback viability. The existing data capture under the Green House Gas reporting mechanism places Biffa well to deliver upon the requirements of SECR from 2020 onwards.
- 4.1.10 Environmental data is also captured for several voluntary accreditation and reporting schemes which benchmark performance year on year, and in comparison, to our industry peers. These include Carbon Saver Gold. Carbon Saver Gold is a certification scheme for businesses who can demonstrate reductions in carbon emissions intensity. Biffa achieved 12 consecutive years of reduction in carbon emissions in 2019 and are the first company in the UK to remain certified for this length of time.
- 4.1.11 Biffa are an active member of the Logistics Emissions Reduction Scheme run by the Freight Transport Association (FTA) and report on Biffa's logistics emissions to the association annually to demonstrate improvements in the amount of fuel consumed per mile travelled.
- 4.1.12 MOG03 also requires the review of energy consumption trends, action plans and ESOS compliance, as above.
- 4.1.13 MOG03-01 further addresses the following requirements of BAT 1:
 - Waste stream management. This includes duty of care requirements and also incorporates additional detail in relation to specific waste types. Further detail on waste stream management is also included in relation to the response to BAT 2;
- 4.1.14 MOG17 addresses the following requirements of BAT 1:
 - Accident management plan. This covers the assessment and planning for all foreseeable emergencies and incidents.
- 4.1.15 Biffa's EMS is augmented by several local site-specific documents. These include a Working Plan (effectively the Operating Techniques document) and multiple subsidiary documents to the Working Plan.

- 4.1.16 The Site's Working Plan addresses the following requirements of BAT 1, BAT 11 and BAT 24:
- Waste stream management.
 - Residues Management Plan. The working plan deals further with management and annual generation monitoring for mud and debris, spillages of liquids, wastewater from the washing of drums/containers, fire residues including fire-fighting water and litter.
- 4.1.17 Audits and inspections will be conducted to a suitable standard to meet the requirements of the management system and performance will be reported annually to the NRW as per the requirements of the Environmental Permit.
- 4.1.18 Environmental issues will be considered when purchasing items of plant and when design changes are being undertaken at the facility. These considerations will be documented.
- 4.1.19 Records will be kept of all items required by the Environmental Permit, other legislation and operating procedures.

4.2 Management Structure

- 4.2.1 **Figure 1** detailed below, illustrates the typical management structure that is utilised in relation to the waste operations on site.

Figure 1: Management Structure for Proposed Lamby Way Hazardous Waste Transfer Station Activities



4.3 Environmental Permit and Standard Operating Procedures

- 4.3.1 Copies of the Environmental Permit, Environmental Permit Application and associated Management Plan and supporting documents will be kept within the Lamby Way Transfer Station site offices.

4.4 Technical Competence

- 4.4.1 Technical competence for the waste facility will be provided via the WAMITAB Certification Scheme. Employees are selected based upon relevant experience within the waste management and recycling industry.
- 4.4.2 In order to comply with the regulatory requirements as stated in the Environmental Permitting Regulations, Biffa propose to provide experienced person/s with the appropriate technical competence qualifications to manage the facility going forward. It is proposed that the appointed TCM for the facility will be Alex Gee. Evidence of his qualifications is attached in **Appendix 2**.
- 4.4.3 NRW will be informed within 24 hours of any proposed changes to the technical competence arrangements.

4.5 Staffing

- 4.5.1 The likely staffing arrangements are outlined in the company organogram as shown in **Figure 1**.
- 4.5.2 **Appendix 8** outlines the roles and responsibilities of staff employed within the organisation.

4.6 Training

- 4.6.1 Any new employees are given full induction training by the Site Operations Manager or other appropriately qualified person(s) as appointed by the Site Operations Manager.
- 4.6.2 Additionally, as mentioned in **Section 2.2**, staff and operatives will receive training to ensure they can perform their role competently. People carrying out the technical appraisal of a waste's suitability for pre-acceptance and for the sample, check and test of hazardous waste for acceptance will have a minimum of a Higher National Certificate in Chemistry.
- 4.6.3 The assessment of competences of staff is made by the Site Operations Manager or other appropriately qualified person(s) on an ongoing basis. All staff are trained to ensure that they are competent to undertake their respective duties. Particular attention is given to familiarisation of staff with the Environmental Permit for the site, the potential emissions from the site and the prevention of accidental emissions. Training will be tailored to individual requirements.
- 4.6.4 An induction and personal training plan is developed for each individual and is regularly updated to reflect staff needs and skills.

4.7 Operating Procedures

- 4.7.1 Biffa have developed a number of specific standard operating procedures which cover the onsite activities at the proposed waste transfer station. Copies of these standard operating procedures are included in **Appendix 12**. Where procedures do not exist, it is anticipated to create a full draft of working procedures for all activities within one year of receiving the Environmental Permit. These will be periodically reviewed and updated where deemed necessary.

4.8 Maintenance Procedures

- 4.8.1 A documented maintenance schedule is developed in accordance with equipment suppliers and manufacturer's recommendations. Any plant that is used will be hired with a maintenance contract incorporating specified response times to reduce downtime. An inspection regime is developed for each piece of plant in order to visually inspect condition and identify immediate repair requirements.

4.9 Records

- 4.9.1 A record of the types and quantities (in tonnes) of wastes received and removed from the facility will be maintained. A summary of the types and quantities of wastes deposited at the site and removed from the site will be provided to the NRW quarterly in an agreed format. All Duty of Care documentation in relation to waste movements will be kept for 5 years.

- 4.9.2 The following significant events at the facility will be recorded, as detailed below:

- Maintenance;
- Breakdowns;
- Emergencies;
- Problems with waste received and action taken;
- Facility inspections;
- Attendance of technically competent management at the facility;
- Despatch of records to the Agency;
- Severe weather conditions;
- Complaints received;
- Visitors to the facility;
- Pest or vermin incidents; and
- Rejected loads and the reason for rejecting the load.

- 4.9.3 The Site Operations Manager or nominated person will maintain a record of all the above information in the site log or on inspection forms, as appropriate. Records relating to significant events will be kept for up to 6 years, or where involving off site environmental effects or pollution of land or groundwater until permit surrender.

- 4.9.4 All records and copies of inspection forms will be kept at the facility at all times and will be available for inspection at all reasonable times by any authorised officer of the NRW.

- 4.9.5 The facility records may be kept either as:

- Hand generated log;
- Computer generated hard copies; or
- Computer permanent storage media.

- 4.9.6 To ensure the security of records they will be housed in either locked containers or kept in offices that shall be locked when not attended.

- 4.9.7 Records will be disposed of in accordance with company policy, which shall ensure an appropriately secure method e.g., shredding and recycling, where feasible.

4.10 Visitors

- 4.10.1 Persons visiting the facility will be required to report to the reception office. A record of the time and reason for their visit will be logged in the signing-in book. Visitors entering the working areas will be briefed and inducted with respect to facility safety and accompanied where necessary.
- 4.10.2 All visitors will be made aware of the requirement for Personal Protective Equipment (PPE). No person will be allowed entry to the facility without the correct protective equipment. The facility employees are responsible for the Health and Safety of all visitors and will ensure that they are given sight of a copy of the Health and Safety Plan and are made aware of any potential threats to their safety or welfare.
- 4.10.3 There will be additional induction requirements for contractors visiting site that are providing a service or undertaking works such as maintenance. A permit to work system will be employed for more hazardous maintenance activities to ensure compliance with health and safety requirements.

4.11 Site Inspections and Audit

- 4.11.1 Every working day, site inspections will be conducted of the Lamby Way Waste Transfer Station operation and Environmental Permit boundary. The facility shall be inspected on every working day by the Site Operations Manager or other nominated representatives of the Environmental Permit holder for defects in plant, equipment or structure or in any working practice that may affect satisfactory compliance with the Environmental Permit. Inspections shall be undertaken by staff suitably qualified and/or experienced in the day-to-day operation of the facility. An Operation and Maintenance Daily Check Sheet is included in **Appendix 9** which includes the following inspection points:
- Waste storage levels;
 - Waste type storage area separation;
 - Cleanliness;
 - Site emissions;
 - Leakages/Spillages;
 - Monitoring data (where relevant);
 - Plant condition; and
 - Integrity of site surfacing, drainage systems and security provisions, where applicable.
- 4.11.2 The above described daily monitoring will aid in the identification of significant emissions, including noise, dust and odour. This aspect is very important for the proposed Waste Transfer Station given the site's proximity of other industrial activities, including a metal fabrication workshop. The completion of these daily inspections will allow for the sources of any recorded emissions to be located, identify the responsible party and hence attribute responsibility for remedial action.
- 4.11.3 Should an on-site problem be identified, the Site Operations Manager or nominated representative will arrange for the appropriate mitigation technique to be applied as soon as is reasonably practicable.
- 4.11.4 Should a fugitive emission source be identified as being outside the Environmental Permit Boundary of the proposed site, then the Site Operations Manager/TCM or appointed deputy will make contact with the operators of the

facility containing the emission source and inform them accordingly, where this is able to be identified.

4.11.5 Records shall be kept of daily inspections and shall be made available for inspection as reasonably required by authorised officers of the NRW. Any defects shall be rectified promptly.

4.11.6 In addition, under the environmental management system, the site is subject to both internal and external audit. Copies of the audits will be kept in the site office.

4.12 Site Security

4.12.1 All reasonable precautions are taken to prevent unauthorised access to the site.

4.12.2 Access to the facility will be via a tarmacked road off Lamby Way to the south of the site. It is then necessary to follow the road towards the site office, prior to heading to the left towards the loading / unloading area. There is a palisade security gate at the site entrance, adequate fencing is provided to prevent unauthorised access.

4.12.3 Furthermore, the site will be locked outside of operational hours to prevent unauthorised access.

4.12.4 The integrity of the site boundary, entrance gateway and perimeter structures are inspected on a weekly basis. Any damage to the integrity of the boundary, gates or any other security structure, where practicable, will be repaired by the end of the working day. If it is not possible to make repairs within a working day, temporary repair measures will be implemented. Final repairs will be carried out within 7 working days of the damage being detected or any other such period as agreed in writing with the NRW. All damage and repairs (temporary or permanent) are recorded in the Site Diary.

4.13 Site Identification Board

4.13.1 A site identification board is attached to the frontage of the site detailing the following information:

- The permit holder's name (company name) and permit number;
- An emergency contact name and the permit holder's telephone number;
- A statement that the site is permitted by the Natural Resources Wales; and
- Natural Resources Wales incident hotline 0300 065 3000*

*or any other numbers subsequently notified in writing by Natural Resources Wales

4.13.2 The site identification board will be inspected on a weekly basis and any damage repaired within 3 working days. Details of any damage and repairs undertaken are recorded in the Site Diary.

4.14 Complaints

4.14.1 Any complaints relating to the facility will be managed as follows:

- Details of the complaint and the complainant will be logged in the Site Diary.
- The complaint will be investigated. Corrective actions and preventative actions will be undertaken where the source of the complaint can be identified and is attributable to activities undertaken at the facility.
- The details of the action taken will be reported back to the complainant. This will include cases where the complaint is unsubstantiated i.e. the complaint fails to be linked to any activity occurring at the facility. All investigate works and compliant outcomes will be recorded in the Site Diary.

4.15 Staff Welfare Facilities

4.15.1 Staff rest and wash facilities are situated within the current site office.

4.16 Non-Compliances

4.16.1 The chemists involved in waste acceptance checks will be trained to effectively identify and manage non-conformances in the loads received, complying with SGN S5.06 and any permit conditions.

4.17 Health and Safety

4.17.1 The company recognises the importance of Health and Safety for both its staff and visitors to its facility. The company has therefore developed a detailed Health and Safety management plan as part of their ISO18001:2007 accreditation to ensure the well-being of all who visit the site. The plan outlines the Health and Safety policies and practices to be adopted on site at all times.

4.18 BAT Assessment

4.18.1 The procedures for management comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 20** below.

Table 19: Indicative BAT Requirements for Management Systems

Indicative BAT requirements for Management Systems	To be undertaken at the Installation	Comments
Operations & Maintenance		
Effective operational and maintenance systems should be employed on all aspects of the process whose failure could impact on the environment, in particular there should be: <ul style="list-style-type: none"> documented procedures to control operations that may have an adverse impact on the environment; a defined procedure for identifying, reviewing and prioritising items of plant for which a preventative maintenance regime is appropriate; documented procedures for monitoring emissions or impacts; a preventative maintenance programme covering all plant, whose failure could lead to impact on the environment, including regular inspection of major 'non-productive' items such as tanks, pipework, retaining walls, bunds ducts and filters; 	✓	
The maintenance system should include auditing of performance against requirements arising from the above and reporting the result of audits to senior management.	✓	
Competence and training		
Training systems, covering the following items, should be in place for all relevant staff which cover: <ul style="list-style-type: none"> awareness of the regulatory implications of the Permit for the activity and their work activities; awareness of all potential environmental effects from operation under normal and abnormal circumstances awareness of the need to report deviation from the Permit prevention of accidental emissions and action to be taken when accidental emissions occur 	✓	
The skills and competencies necessary for key posts should be documented and records of training needs and training received for these post maintained.	✓	
The key posts should include contractors and those purchasing equipment and materials	✓	
The potential environmental risks posed by the work of contractors should be assessed and instructions provided to contractors about protecting the environment while working on site.	✓	
Where industry standards or codes of practice for training exist (e.g. WAMITAB) they should be complied with.	✓	WAMITAB (see Appendix 2)
Accidents/incidents/non-conformance		
There should be an accident plan... which: <ul style="list-style-type: none"> identifies the likelihood and consequence of accidents identifies actions to prevent accidents and mitigate any consequences 	✓	An Environmental Accident Management Plan is maintained at the site. (Appendix 6) Conforms with BAT 21
There should be written procedures for handling, investigating, communicating and reporting actual or potential non-compliance with operating procedures or emission limits.	✓	
There should be written procedures for handling, investigating, communicating and reporting environmental complaints and implementation of appropriate actions.	✓	

Indicative BAT requirements for Management Systems	To be undertaken at the Installation	Comments
There should be written procedures for investigating incidents, (and near misses) including identifying suitable corrective action and following up	✓	
Organisation		
<p>The company should have demonstrable procedures (e.g. written instructions) which incorporate environmental considerations into the following areas:</p> <ul style="list-style-type: none"> • the control of process and engineering change on the installation; • design, construction and review of new facilities and other capital projects (including provision for their decommissioning); • capital approval; and • purchasing policy. 	✓	
The company should conduct audits, at least annually, to check that all activities are being carried out in conformity with the above requirements. Preferably, these should be independent.	✓	
The company should report annually on environmental performance, objectives and targets, and future planned improvements. Preferably, these should be published environmental statements.	✓	
The company should operate a formal Environmental Management System (EMS). Preferably, this should be a registered or certified EMAS/ISO 14001 system (issued and audited by an accredited certification body).	✓	<p>ISO14001 accreditation – Appendix 3</p> <p>Conforms with BAT 1</p> <p>The facility will operate in accordance with an Integrated Environmental Management Systems accredited under ISO14001. The EMS incorporates all the features listed under this BAT conclusion.</p>
<p>The company should have a clear and logical system for keeping records of, amongst others:</p> <ul style="list-style-type: none"> • policies • roles and responsibilities • targets • procedures • results of audits • results of reviews 	✓	Conforms with BAT 1

5.0 ACCIDENTS AND THEIR CONSEQUENCES

5.1 Emergency Planning

- 5.1.1 An Accidents Risk Assessment matrix has been prepared in accordance with Natural Resources Wales guidance and is presented in **Appendix 6**. The matrix identifies potential hazards at the facility, the likelihood and consequence of an accident or emergency relating to hazards, and the risk management measures that will be put in place to ensure that risks are acceptable.
- 5.1.2 Details of any environmental incident will be confirmed to the NRW in writing by first class post or fax or e-mail, on the next working day after identification of the incident. This confirmation will include: the time and duration of the incident, the receiving environmental medium or media where there has been any emission as a result of the incident, an initial estimate of the quantity and composition of any emission, the measures taken to prevent or minimise any further emission and a preliminary assessment of the cause of the incident.
- 5.1.3 Any incident notified to the NRW will be investigated, and a report of the investigation sent to the NRW. The report will detail, as a minimum, the circumstances of the incident, an assessment of any harm to the environment and the steps taken to bring the incident to an end. The report will also set out proposals for remediation and for preventing a repetition of the incident.

5.2 Emergency Contact

- 5.2.1 In the event of any significant environmental emergency/incident a representative of Biffa will notify the NRW by telephone immediately, but first having due regard for the incident at hand and any remediation actions required to ensure the safety of site personnel and the immediate environment.
- 5.2.2 Details of any significant environmental incident will be confirmed to the NRW in writing by e-mail or fax, on the next working day after identification of the incident. This confirmation will include: the time and duration of the incident, the receiving environmental medium or media where there has been any emission as a result of the incident, an initial estimate of the quantity and composition of any emission, the measures taken to prevent or minimise any further emission and a preliminary assessment of the cause of the incident.
- 5.2.3 Any incident notified to the NRW will be investigated, and a report of the investigation sent to the NRW. The report will detail, as a minimum, the circumstances of the incident, an assessment of any harm to the environment and the steps taken to bring the incident to an end. The report will also set out proposals for remediation and for preventing a repetition of the incident.

5.3 Control of Fires

- 5.3.1 No waste will be burned within the confines of the site boundary. Additionally, the operator does not intend to accept large quantities of combustible wastes as part of non-hazardous transfer operations. Nevertheless, it is appreciated that the proposed facility will have the capability to receive quantities of these materials below the threshold for lower tier COMAH sites. Accordingly, Biffa will store and handle in line with relevant HSE standards and in particular to HSG51; HSG71; HSG76; HSG140; HSG176 & CS21. Along with, good housekeeping and site management practices to prevent/mitigate the potential fire risks.

- 5.3.2 Should any fire occur within the facility, these will be treated as a potential emergency and dealt with accordingly. It has been identified that fires at the proposed site may occur in relation to:
- Plant failure – fixed or mobile plant fires;
 - Within containers of waste being delivered to the facility;
 - Within waste stored at the site; and
 - Within containers awaiting removal from the facility.
- 5.3.3 In the event that a fire occurs the facility, the following actions would be undertaken:
- Person(s) discovering a fire will raise the alarm;
 - Report the incident to the Site Operations Manager;
 - All site personnel and visitors will be accounted for and evacuated to a safe location;
 - Contact the emergency services and state the nature of the incident;
 - Follow all instructions given by the emergency services;
 - If the fire can be controlled without endangering operatives, appropriate actions will be undertaken using available firefighting equipment. Fires will be tackled by a minimum of two facility operatives;
 - Ensure access is clear for the emergency services but prevent access to the facility from anyone else until the emergency is over; and
 - NRW will be informed forthwith of any fires that occur at the facility.
- 5.3.4 The site offices will be provided with smoke alarms and a dedicated fire alarm with audible signal. Other areas are equipped with extinguishers in which the locations and types of extinguishers will be agreed with the local Fire Officer. These alarms will be connected to an audible signal.
- 5.3.5 All firefighting equipment at the facility will be clearly marked and tested, at appropriate intervals, to confirm their suitability and functionality. Site personnel will be made aware of the locations of all firefighting equipment and will be trained in their correct use.
- 5.3.6 A record of the occurrence of a fire will be maintained in the site log, along with any actions taken. An Incident and Accident Report will be completed by the Site Operations Manager.
- 5.3.7 Following approval by the fire services and/or facility manager the residues from the fire will be disposed of accordingly at a suitable permitted waste management facility.
- 5.3.8 In the event of a fire, firewater will be contained on the site, prior to being pumped and removed to a suitably permitted facility. Please note, the preparation of a dedicated Incident Management Plan will be written for dealing with any incidents or accidents on site that could result in pollution. It will identify the risks to human health and the hazards to the environment posed by the facility.
- 5.3.9 Further details on the identified potential fire risk associated with the proposed site, along with prevention, mitigation and firefighting strategies are presented in the Fire Prevention and Mitigation Plan (**Doc Ref.: BF5023/07**) which is included in **Appendix 15**.

5.4 Explosions

5.4.1 In the unlikely event that materials with explosive elements are discovered within a waste delivery that has already been accepted, the following action would be taken:

- Contact the Site Operations Manager or in his absence the nominated deputy;
- Check that all site personnel and visitors are accounted for and are moved to a safe location;
- Contact the emergency services and state the nature of the incident (including whether any fires have occurred);
- Follow all instructions given by the emergency services;
- If injuries have occurred medical assistance will be called;
- No further wastes will be accepted at the facility until the Site Operations Manager has given authority; and
- NRW will be informed forthwith of any arisings of explosive materials or any explosions that occur.

5.4.2 Once the emergency is over and the emergency services have declared that the area is made safe, an incident/accident report shall be completed. A written account of the incident will also be forwarded to NRW no later than 14 days after the incident.

5.5 Flooding

5.5.1 In terms of Flood Risk, NRW data has been reviewed and found that the site sits within an area where there is a low risk of flooding from rivers and sea. The site is wholly located within an area assigned a "Low Risk Designation", which is classed as an area where land and property has a less than <0.1% probability of flooding.

5.5.2 Further review of the available data indicates that the entrance to the proposed site is situated in close proximity to an area of land with a "Medium Risk" of flooding from rivers and sea which is classed as an area where land and property has a chance of flooding between 1-3.3%. Additionally, land to the west of the application site (situated within Parc Tredelerch) is assigned a "Low" Surface Water Risk which is classified as an area where land and property has a less than <0.1% probability of flooding.

5.6 Control of Leaks and Spillages

5.6.1 Any spills or leaks from stored wastes will be managed by the sites drainage system. Where appropriate, temporary bunds can be deployed to contain a spillage until appropriate action can be implemented to remove the liquid. Fuel for use by the operators site plant will be kept in an approved storage tank (which will be appropriately engineered, e.g. self-bunded/double skinned), within the site entrance infrastructure area.

5.6.2 Every working day, visual inspections of concrete surfaces for signs of ponding, overflowing onto exposed surfaces or ineffective drainage will be conducted. Facility operatives will report any such incidents to the Site Operations Manager. Should the concrete surfaces show signs of ineffective drainage, no further use will be permitted until repairs to concrete or drainage systems are undertaken.

- 5.6.3 Every working day, Storage tanks, drums and bunded areas will be inspected whilst the facility is operational. In the event of a spillage, facility operatives will inform the Site Operations Manager who is responsible for assessing the situation and deciding on the most appropriate actions to be undertaken.
- 5.6.4 All necessary measures will be taken to contain any spillage or discharge by means of suitable material and equipment. The actions undertaken will depend on the size of the spillage, the location of the spillage in relation to sensitive receptors and the nature of the spilled material.
- 5.6.5 Where spillages of dry wastes occur, these will be cleared by either manual or mechanical means, for example handpicking, sweeping, or shovelling, dependant on the size and location of the spillage.
- 5.6.6 Minor spillages of liquid will be contained using spillage kits or any suitable readily available absorbent material. This material will be disposed of in a manner appropriate to the type of material absorbed.
- 5.6.7 If a major spillage of liquid occurs the following actions will be undertaken, where appropriate:
- Report the occurrence to the Site Operations Manager immediately;
 - Trained facility operatives will take immediate action to try and contain the leak where it is safe to do so;
 - If it is safe to do so, the cause of the spill or leak will be isolated and/or moved to a bunded area;
 - If the liquid spillage is large, inert material such as clay or sandbags will be used to make a temporary containment bund to prevent pollution of any surface water, land or groundwater. The Site Operations Manager or designated person will contact NRW to discuss best practicable disposal options;
 - For leaks and spills that occur within the unloading area the isolation chamber will be activated to prevent polluting materials entering the wider surface water drainage network;
 - Access to the immediate area should be restricted until a disposal/clean up solution is implemented;
 - If the spillage cannot be contained using approved methods, senior management will be contacted immediately, and specialist advice and help will be sought; and
 - If a vehicle is identified as leaking, wherever practicable, it will be stored on an impermeable pavement within a bunded area, where the spillage can be contained until such time as a repair is affected.
- 5.6.8 Natural Resources Wales will also be informed immediately of major spillages, >200ltrs, having due regard to first take appropriate measures to deal with any emergency in hand.
- 5.6.9 The locations of spillage kits and other emergency equipment will be detailed within the Site Emergency Plan.
- 5.7 Investigation of Accidents and Incidents**
- 5.7.1 For any accident, incident or dangerous occurrence, an Incident and Accident Report will be completed by the Site Operations Manager or nominated deputy. All relevant details of the accident, incident or dangerous occurrence will be recorded, together with any additional statement, photographs, logs or records that may assist in the full investigation of the accident, incident or dangerous occurrence.

- 5.7.2 After an Environmental Incident and Emergency has been made safe, an investigation will be conducted, if necessary, by the Site Operations Manager and other Company Personnel as appropriate.

5.8 BAT Assessment

- 5.8.1 The procedures for accidents and abnormal operations comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 21** below:

Table 20: Indicative BAT Requirements for Accidents and Abnormal Operations

Indicative BAT requirements for accidents and abnormal operations	To be undertaken at the Installation	Comments
A formal structured accident management plan should be in place which covers the following aspects:	✓	Operations with accord with the requirements of SGN5.06
<p>A - Identification of the hazards to the environment posed by the installation using a methodology akin to a HAZOP study. Areas to consider should include, but should not be limited to, the following:-</p> <ul style="list-style-type: none"> • arrangements for the receipt, and checking of incoming wastes, including rejection and quarantine • arrangements for the storage, segregation and separation of differing waste types • procedures for the internal transfer, including "bulking-up", of waste materials • transfer of substances (e.g. filling or emptying of vessels); • overfilling of vessels; • emissions from plant or equipment (e.g. leakage from joints, over-pressurisation of vessels, blocked drains); • failure of containment (e.g. physical failure or overfilling of bunds or drainage sumps); • failure to contain firewaters; • wrong connections made in drains or other systems; • incompatible substances allowed to come into contact; • unexpected reactions or runaway reactions; • release of an effluent before adequate checking of its composition; • failure of main services (e.g. power) • operator error) • vandalism. 	✓	<p>Refer to Appendix 5 & Appendix 6</p> <p>An Environmental Accident Management Plan is maintained at the site.</p> <p>Conforms with BAT 21</p>
<p>B - assessment of the risks. The hazards having been identified, the process of assessing the risks should address six basic questions:</p> <ul style="list-style-type: none"> • how likely is the particular event to occur (source frequency)? • what substances are released and how much of each (risk evaluation of the event)? • where do the released substances end up (emission prediction - what are the pathways and receptors)? • what are the consequences (consequence assessment – what are the effects on the receptors)? • what are the overall risks (determination of overall risk and its significance to the environment)? • what can prevent or reduce the risk (risk management – measures to prevent accidents 	✓	<p>Refer to Appendix 5 & Appendix 6</p> <p>An Environmental Accident Management Plan is maintained at the site.</p> <p>Conforms with BAT 21 (and BAT 1)</p>

Indicative BAT requirements for accidents and abnormal operations	To be undertaken at the Installation	Comments
and/or reduce their environmental consequences)?		
<p>The depth and type of assessment will depend on the characteristics of the installation and its location. The main factors to take into account are:</p> <ul style="list-style-type: none"> • the scale and nature of the accident hazard presented by the installation and the activities • the risks to areas of population and the environment (receptors) • the nature of the installation and complexity of the activities and the relative difficulty in deciding and justifying the adequacy of the risk-control techniques 	✓	
<p>C - identification of the techniques necessary to reduce the risks. The following techniques are relevant to most installations:</p> <ul style="list-style-type: none"> • there should be an up-to-date inventory of substances, present or likely to be present, which could have environmental consequences if they escape. This should include apparently innocuous substances that can be environmentally damaging if they escape (for example, a tanker of milk spilled into a watercourse can destroy its ecosystem). The Permit will require the Regulator to be notified of any significant changes to the inventory. • there should be an up-to-date site plan showing the precise location of wastes having specific hazard characteristics (e.g. oxidising, flammable, dangerous when wet etc.) with clear identification of the perimeters of the various designated storage areas and their maximum storage capacity. • procedures should be in place for checking and handling raw materials and wastes to ensure compatibility with other substances with which they may accidentally come into contact. • storage arrangements for raw materials, products and wastes should be designed and operated to minimise risks to the environment. • physical protection should be in place where appropriate (e.g. barriers to prevent damage to equipment from the movement of vehicles). • there should be appropriate secondary containment (e.g. bunds, catchpots, building containment). • techniques and procedures should be in place to prevent overfilling of tanks - liquid or powder - (e.g. level measurement displayed both locally and at the central control point, independent high-level alarms, high-level cut-off, and batch metering). • where the installation is situated in a floodplain, consideration should be given to techniques which will minimise the risk of the flooding causing a pollution incident or making one worse. • security systems to prevent unauthorised access should be provided where appropriate. • there should be formal systems for the logging and recording of all incidents, near-misses, abnormal events, changes to procedures and significant findings of maintenance inspections. • there should be procedures for responding to and learning from incidents, near-misses, etc. • the roles and responsibilities of personnel involved in incident management should be formally specified. • clear guidance should be available on how each accident scenario might best be managed (e.g. 	✓	<p>Refer to Appendix 5 & Appendix 6</p> <p>An Environmental Accident Management Plan is maintained at the site.</p> <p>Conforms with BAT 21 (and BAT 1)</p>

Indicative BAT requirements for accidents and abnormal operations	To be undertaken at the Installation	Comments
<p>containment or dispersion, to extinguish fires or to let them burn).</p> <ul style="list-style-type: none"> • procedures should be in place to avoid incidents occurring as a result of poor communications between staff at shift change or during maintenance or other engineering work. • safe shutdown procedures should be in place. • communication channels with emergency services and other relevant authorities should be established, and available for use in the event of an incident. Procedures should include the assessment of harm following an incident and the steps needed to redress this • appropriate control techniques should be in place to limit the consequences of an accident, such as; fire walls, firebreaks isolation of drains, provision of oil spillage equipment, alerting of relevant authorities and evacuation procedures. • personnel training requirements should be identified and training provided. • the systems for the prevention of fugitive emissions are generally relevant and in addition, for drainage systems: <ul style="list-style-type: none"> • procedures should be in place to ensure that the composition of the contents of a bund sump, or sump connected to a drainage system, are checked before treatment or disposal; • drainage sumps should be equipped with a high-level alarm or with a sensor • there should be a system in place to ensure that sump levels are kept to a minimum at all times; • high-level alarms and similar back-up instruments should not be used as the primary method of level control. • spill contingency procedures should be in place to minimise accidental release of raw materials, products and waste materials and then to prevent their entry into water. • process waters, potentially contaminated site drainage waters, emergency firewater, chemically-contaminated waters and spillages of chemicals should be contained and, where necessary, routed to the effluent system and treated before emission to controlled waters or sewer. Sufficient storage should be provided to ensure that this can be achieved. Any emergency firewater collection system should take account of the additional firewater flows and fire-fighting foams, and emergency storage lagoons may be needed to prevent contaminated firewater reaching controlled waters • Spillage prevention controls must be in place during the transfer of substances (for example, transfer of bulk liquid waste from tanker to storage vessels) • bulking up of liquid wastes from small containers into larger ones • unloading/movement of drums and containers • accumulations of liquids in bunds, sumps, etc., should be dealt with promptly • such accumulations requiring removal should be analysed to ensure the correct disposal route, for example, pH, COD, heavy metals and other known contaminants from the spillage 		

6.0 EMISSIONS MONITORING

6.1 Introduction

- 6.1.1 A Fugitive Risk Assessment matrix for the operation has been prepared in accordance with Natural Resources Wales guidance and is presented in **Appendix 5**. The matrix identifies potential hazards associated with waste transfer facility, the likelihood and consequence of a fugitive emissions release relating to hazards, and the risk management measures that will be put in place to ensure that risks are acceptable.
- 6.1.2 The undertaking of environmental monitoring will be performed to a defined written procedure in accordance with the appropriate NRW guidance document to ensure consistency of monitoring and sampling for laboratory testing.
- 6.1.3 Based upon the proposed site operations, emissions inventory, and environmental risk assessment, it not anticipated that any emissions limits and monitoring requirements will be specified in the Environmental Permit (mirroring the Environmental Permit conditions of the existing Curran Embankment Site).
- 6.1.4 It is important to highlight that although it is anticipated that no emissions limits and monitoring requirements will be specified in the Environmental Permit, the operator will undertake visual and olfactory monitoring (as appropriate) as part daily Operational and Maintenance Checks.

6.2 Point Source Emissions to Air

- 6.2.1 The proposed operations at the facility do not give rise to any substantial point source emissions to air. As previously discussed, the accepted waste arrives onsite packaged and/or contained within a sealed container with waste treatment activities undertaken within a building, thereby minimising emissions to air. The only point source emissions as a result of the proposed waste transfer station will be from mobile materials handling plant.
- 6.2.2 All plant items will be subject to regular maintenance schedules to ensure that the items operate in accordance with manufacturer's instructions, and that any potential subsequent exhaust emissions to air are minimised and in any event within published limits.
- 6.2.3 In any event, wind speed and direction will be monitored at an appropriate location at the facility. This may assist in investigation of complaints should they arise.

6.3 Fugitive Emissions to Air

- 6.3.1 It is anticipated that part of the potential emissions to air from the facility will comprise fugitive emissions resulting from the transfer and treatment of wastes. The actual waste treatment is undertaken within a walled and covered structure, thereby minimising emissions to air. A Fugitive Emissions Risk Assessment has been conducted and is included in **Appendix 5**. It is proposed to conduct monitoring of the following parameters:
- Dusts - Visual inspections of the site (storage and treatment processing areas and access routes) and boundary on a daily basis as part of the Operation and Maintenance Checks to ensure that significant dust emissions are not emitted from the on-site waste recycling activities. Any dust emissions noted will result in the actions outlined in **Section 3.4**. The resultant actions will be recorded in the Site Diary.

- Litter - Visual inspections of the site and boundary on a daily basis to ensure that significant litter emissions are not emitted from the on-site activities. Any litter emissions noted will result in the actions described in **Section 3.4** being taken. The resultant actions will be recorded in the Site Diary.

6.4 Emissions to Water

- 6.4.1 As previously discussed in **Section 3.3**, all surface water collected from the ancillary areas of the site will be directed towards a engineered drainage network and directed through oil interceptors to a designated discharge point from where it is discharged to public surface water sewer at a maximum rate of 5L/s.
- 6.4.2 In addition to the dedicated drainage system and discharge point, an attenuation storage tank with a maximum capacity of 420m³ will be installed along the western boundary of the proposed site. This storage tank will comprise of double skinned construction and will be fitted with both high level and leak detection alarms. The primary aim of this storage tank will be to provide redundancy to the surface water management system during a storm event when potential inputs to the surface water drainage system exceeds the outflow rate. The capacity of the storage tank was determined following MicroDrainage modelling which examined a 1 in 100-year storm event (+30% for climate change). The modelling indicated that under these conditions the storage tank would provide storage for up to a 720-minute storm, this would allow time for site staff to arrange for a tanker to remove collected site drainage.
- 6.4.3 The external drainage network is also provided with a dedicated isolation chamber and 9m³ storage tank in the event that a leak or spill occurs within the unloading area. Should a leak or spill occur in this area the drainage network can be isolated and remediated with no impact on the rest of the drainage network. This storage tank will comprise of double skinned construction and will be fitted with both high level and leak detection alarm.
- 6.4.4 Additionally, each storage bay at the proposed facility will be fitted with a dedicated drainage system which will collect any generated liquids and isolate these with a storage sump. The storage sumps for each storage bay will be installed underneath the front of the storage bay. These storage sumps will be accessible from the surface via grid coverings to facilitate the visual inspection of liquid levels by site staff.
- 6.4.5 As such there will be no emissions to water derived from waste storage or processing areas.
- 6.4.6 All bulking of flammable materials will be carried out in a process bay. As these bays are well ventilated it is unlikely any vapours would enter the drainage system. Furthermore, the proposed storage bay tanks will be covered by an open grating and are located at the front of the storage bay (a well-ventilated area). Consequently, is it considered that the proposed bay drainage infrastructure is sufficient to mitigate the potential risk of vapour build up.
- 6.4.7 Additionally, the drainage system for each storage/process bay is self-contained with surface drainage falling into a sealed sump, which is not connected to any external drains or drains for adjacent storage bays, so there is no risk of vapours in drains providing potential emission off site.

6.5 Emissions to Sewer

- 6.5.1 Foul waters generated at the site welfare facilities will be discharged (under appropriate consent) to foul sewer.

6.6 Noise

- 6.6.1 Despite the conclusion of the NIA undertaken by BWB Consulting that noise emissions generated from the operation of the proposed will have a negligible impact on nearby receptors during operations (which will be restricted to the daytime period). Noise will still be monitored as part of the daily Operation and Maintenance Checks.
- 6.6.2 It is appreciated that residential properties are located in the vicinity of the site, however, due to the nature of proposed site operations; bulking and transfer of specified waste codes, and the associated pieces of plant utilised to achieve this, it is considered that the generation potential for significant vibrations will be minimal. Accordingly, it is considered that a further detailed vibration assessment is not required.
- 6.6.3 Noise monitoring will comprise of auditory monitoring that will be undertaken as part of the daily Operation and Maintenance Checks. Any noise emissions noted will be recorded and investigated result in the implementation of the of appropriate noise management processes detailed in **Section 3.7**. Additionally, any noise levels will be monitored by number of complaints received in relation to noise. These complaints will be fully investigated, with any actions taken will be recorded in the Site Diary.
- 6.6.4 Additionally, all facility personnel will be responsible for reporting any noise problems detected on site as soon as reasonably possible to the Site Operations Manager or nominated deputy.
- 6.6.5 In light of the restricted operational hours to daytime hours only; during which time they have to been assessed to have a low probability of adverse impact it is considered that a standalone Noise Management Plan is not required for this facility (BAT 17). Nonetheless, appropriate measures are already implemented to further reduce the risk; conforming with BAT 18.

6.7 Odour

- 6.7.1 In addition to the process controls described in **Section 3.6**, pre-acceptance, waste acceptance and site inspection checks and procedures will also be used to identify and manage wastes that could cause or are causing fugitive emissions to air.
- 6.7.2 When such wastes are identified, appropriate risk assessed measures will be undertaken to prevent and control emissions and prioritise their treatment or transfer.
- 6.7.3 Additionally, all facility personnel will be responsible for reporting any odour detected on site as soon as reasonably possible to the Site Operations Manager or nominated deputy.

6.8 Mud and Debris

- 6.8.1 The deposit of mud and debris is not expected to be an issue that will arise as part of the proposed operation. Internal service areas and roads will mainly comprise of compacted hardstanding which will be maintained to prevent rutting and ponding, whilst all other service roads around the site entrance, will be hard surfaced (concrete or tarmac) therefore minimising the opportunity of mud and debris being tracked onto public networks.

6.8.2 All site areas and public highway networks immediately outside the facility's boundary will be subjected to general housekeeping and materials transit measures, including the use of the onsite wheel washing facilities.

6.8.3 Notwithstanding the low likelihood of the spread of mud and debris, a daily inspection of the private and public highway will be undertaken by the Site Operations Manager or other trained personnel as directed by the Site Operations Manager at times when the facility is open to receiving or despatching wastes. Details of the inspections and any remedial measures taken will be recorded.

6.9 Control of Leaks and Spillages

6.9.1 Every working day, visual inspections of the operational and processing surfaces will be conducted. In the event of a spillage, facility operatives will inform the Site Operations Manager or chemist who is responsible for assessing the situation and deciding on the most appropriate actions to be undertaken.

6.9.2 All necessary measures will be taken to contain any spillage or discharge by means of suitable material and equipment. The actions undertaken will depend on the size of the spillage, the location of the spillage in relation to sensitive receptors and the nature of the spilled material.

6.9.3 If a major spillage of liquid occurs, the relevant actions will be undertaken e.g. isolation of spill, restricted access to area of spillage etc.

6.9.4 Natural Resources Wales will also be informed immediately of major spillages, having due regard to first take appropriate measures to deal with any emergency in hand.

6.10 BAT Assessment of Environmental Monitoring

6.10.1 The procedures for environmental monitoring comply with indicative BAT requirements in Sector Guidance Note S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 22** below:

Table 21: Indicative BAT Requirements for Environmental Monitoring

Indicative BAT requirements for environmental monitoring	To be undertaken at the Installation	Comments
Emissions Monitoring		
Monitoring should generally be undertaken during all phases of operation (i.e. pre-operational, start-up, normal operation and decommissioning) unless the Regulator agrees that it is inappropriate.	✓	Proposed monitoring requirements to continue through pre-operational and full operational stages of the waste transfer station activity There are no emissions to the water associated with the operation of the STF. All surface waters/leachates draining from the facility are directed to the onsite process water tank and tankered offsite for disposal. Conforms with BAT 7
Emissions Monitoring (beyond site boundary)		
The Operator should consider the need for environmental monitoring to assess the effects of emissions to controlled water, groundwater, air or land, or emissions of noise or odour.	✓	

Indicative BAT requirements for environmental monitoring	To be undertaken at the Installation	Comments
<p>Environmental monitoring may be required, for example, when:</p> <ul style="list-style-type: none"> • there are vulnerable receptors; • the emissions are a significant contributor to an Environmental Quality Standard (EQS) that may be at risk; • the Operator is looking for departures from standards based on lack of effect on the environment; • to validate modelling work. 	✓	
<p>The need should be considered for:</p> <ul style="list-style-type: none"> • groundwater, where it should be designed to characterise both quality and flow and take into account short- and long-term variations in both. Monitoring will need to take place both up-gradient and down-gradient of the site • surface water, where consideration will be needed for sampling, analysis and reporting for upstream and downstream quality of the controlled water • air, including odour • land contamination, including vegetation, and agricultural products • assessment of health impacts • noise 	✓	<p>All wastes are stored and processed on impermeable surfaces. Water run-off from within storage/processing areas all managed as potentially contaminated water and routed to the individual storage tanks. The waters are stored at the process water tank prior to discharge to a suitably licensed facility.</p> <p>Conforms with BAT 19</p>
<p>Where environmental monitoring is needed, the following should be considered in drawing up proposals:</p> <ul style="list-style-type: none"> • determinands to be monitored, standard reference methods, sampling protocols • monitoring strategy, selection of monitoring points, optimisation of monitoring approach • determination of background levels contributed by other sources • uncertainty for the employed methodologies and the resultant overall uncertainty of measurement • quality assurance (QA) and quality control (QC) protocols, equipment calibration and maintenance, sample storage and chain of custody/audit trail • reporting procedures, data storage, interpretation and review of results, reporting format for the provision of information for the Regulation 	✓	Conforms with BAT 3
<p>Monitoring of emissions to air:</p> <ul style="list-style-type: none"> • Otherwise daily visual monitoring to air for smoke, dust, litter, plumes and daily olfactory odour monitoring, with more extensive monitoring if nuisance is occurring or appears likely. 	✓	<p>Undertaken as part of Daily Operation and Maintenance Checks (Appendix 9)</p> <p>Conforms with BAT 10,</p>

6.11 Resource/Process Variables

- 6.11.1 The proposed bulking, blending and re-packaging waste treatment processes for both the Hazardous and Non-Hazardous treatment activities require that accepted waste follows a clearly defined process prior to treatment and subsequent onward transfer. Additionally, the directly associated activity consisting of re-conditioning of IBCs and drums will be undertaken on site.
- 6.11.2 It is proposed that these activities will adhere to the SOPs presented in **Appendix 12** and which are currently utilised at the Cardiff Waste Management Resource Centre. To ensure that the most efficient treatment processes are undertaken at the proposed Lamby Way Transfer Station, the SOPs will be subject to periodic reviews to ensure Best Practice is maintained. Any reviews to the SOP documents will be recorded and the revised version of the SOP document will be circulated to all relevant members of staff and will replace the previous version in both digital (and physical) record stores.
- 6.11.3 The proposed treatment processes also include the potential usage of resources (namely electricity, fuel and water) accordingly procedures for monitoring resource variables comply with indicative BAT requirements for monitoring of resource variables in Sector Guidance Note IPPC S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 23** below:

Table 22: Indicative BAT Requirements for Monitoring of Resource Variables

Indicative BAT requirements for monitoring of resource variables	To be undertaken at the Installation	Comments
Monitoring of raw materials i.e. greases.	✓	Will be assessed on an annual basis Conforms with BAT 11
Monitoring of resource use i.e. water.	✓	Will be assessed on a quarterly basis Conforms with BAT 11
Monitoring of energy use i.e. electricity, fuel	✓	Will be assessed on an annual basis Conforms with BAT 11
Monitoring of generation of residues and wastewater	✓	Will be assessed on an annual basis Conforms with BAT 11

6.12 Waste Emissions

6.12.1 Wastes will be monitored for the following parameters prior to offsite transfer/disposal:

- Physical and chemical composition of waste;
- The hazardous characteristics, to allow for characterisation using WM3 Guidance; and
- Handling precautions.

6.12.2 As indicated in *SOP 12 - Transportation of Wastes* presented in **Appendix 12**, all wastes will undergo an assessment by Biffa's technical assessment team prior to being transported. The team will assess each waste against the relevant legislation, recommend appropriate segregation and mode of transport, packaging and packaging methods and ensure that labels, consignment notes, transfer notes and transport documentation are compiled.

6.12.3 The procedures for monitoring emissions of waste comply with indicative BAT requirements for emissions monitoring (monitoring and reporting of waste emissions) in Sector Guidance Note IPPC S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as shown in **Table 24** below.

Table 23: Indicative BAT Requirements for Emissions Monitoring

Indicative BAT requirements for emissions monitoring	To be undertaken at the Installation	Comments
Duty of Care testing undertaken where required for all outgoing waste materials, including the monitoring and recording of the physical and chemical composition of the waste, its hazardous characteristics and handling precautions and substances with which it cannot be mixed.	✓	Conforms with BAT 2 (including BAT 2d)
An assessment made of hazardous characteristics.	✓	Conforms with BAT 2
Regular waste audits undertaken to ensure consistency in waste emissions monitoring.	✓	Conforms with BAT 2

6.12.4 In accordance with BAT 4 and as specified in *SOP 12*, all wastes leaving the site will be loaded onto appropriate vehicles which are fit for purpose and meet statutory requirements. All vehicles will be inspected, examined and maintained in accordance with statutory requirements.

6.12.5 Biffa will appoint a dangerous goods safety advisor (DGSA) and train sufficient persons to act as DGSAs to enable full compliance with the legislation.

6.12.6 The appointed DGSA will ensure that an annual report is compiled detailing the Company's involvement with carrying dangerous goods, ensure that a security plan and appropriate emergency procedures are in place for the transportation of high consequence dangerous goods. The Company will appoint an individual from the senior management team to be responsible for transport security.

6.12.7 The appointed DGSA will investigate all reportable incidents and prohibition notices and compile a written report.

6.12.8 When new vehicles are to be purchased the appointed DGSA will be consulted.

6.13 Relevant Objectives on the Waste Management Licensing Regulations

6.13.1 In relation to Installation activities involving the disposal or recovery of waste, the operator is required to demonstrate how the relevant objectives as set out in Schedule 4 of the Waste Management Licensing Regulations 1994 have been addressed.

6.13.2 The 'relevant objectives', contained in paragraph 4, Schedule 4 of the Waste Management Licensing Regulations 1994 (SI 1994/1056), are as follows:

- Ensuring the waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment and in particular without:
 - *risk to water, air, soil, plants or animals, or*
 - *causing nuisance through noise or odours, or*
 - *adversely affecting the countryside or places of special interest;*
- Implementing, so far as material, any plan made under the plan-making provisions.

Risks to Human Health and Air

6.13.3 Emissions to air are not considered to be of major significance in relation to the potential to adversely affect human health. The proposed management techniques and mitigation measures employed as detailed within this document and relevant risk assessments indicates that fugitive emissions to air do not present a risk to human health.

Risks to Water

6.13.4 There is no point source or significant fugitive emissions to groundwater or soil from the Installation.

6.13.5 The environmental Fugitive Emissions Risk Assessment contained in **Appendix 5** indicates that the potential environmental impact of aqueous releases from the Installation is likely to be low.

Risks to Plants and Animals

6.13.6 The comments in the sections above indicate that potential impacts of releases from the Installation on plants and animals are likely to be low.

Nuisance from Noise and Odours

6.13.7 Potential emissions of noise and proposed mitigation are addressed in the fugitive emissions risk assessment. The assessment concluded that noise levels are below the measured background noise levels for the sensitive receptors surrounding the site during the proposed operational hours (daytime hours).

6.13.8 Odour has also been considered within the fugitive emissions risk assessment and management plan, **Appendix 5**, this identified that whilst some of the wastes stored awaiting processing are of the type/composition that could lead to them being a source of odour emissions arising from the Facility, the manner in which they are stored means that the opportunity for the release of odour emissions is significantly limited.

6.13.9 The proposed treatment techniques are also of a nature that are unlikely to lead to the release of odorous emissions owing that such operations are conducted inside a building and that treated waste is immediately re-packaged following treatment, namely blending and bulking.

6.13.10 Operational and management procedures that will control the emission of odours are described in the original Environmental Permit application and in the above Supporting Statement.

Effects on the Countryside or Places of Special Interest

6.13.11 The Habitats Regulations requires that any new plan or project considers that risks to European designated statutory habitats sites within the UK. For Habitats to be relevant, they must meet certain criteria in relation to the proposed facility. These criteria vary depending on the type or waste facility, as given below:

- For waste facilities which are not a landfill, the initial screening distance is if the facility boundary is within 1km of a designated habitat;
- For landfill facilities which could attract gulls or member of the crow family, the initial screening distance is if the facility boundary is within 5km of a designated habitat; or
- For all other landfill sites, the initial screening distance is if the facility boundary is within 2km of a designated habitat.

6.13.12 The development will consist of a non-landfill type waste facility therefore it is considered prudent to consider any European designated habitat located within 1km of the site boundary.

6.13.13 A review of publicly available information and the data presented in the Phase 1 Geo-Environmental Risk Assessment undertaken for the proposed site, the proposed Lamby Way Waste Transfer Station is located within 1km of four Sites of Special Scientific Interest (SSSIs); namely the Gwent Levels (Biological Designation), Rumney Quarry (Geological Designation), Rumney River Section (Geological Designation) and the Severn Estuary (Biological Designation).

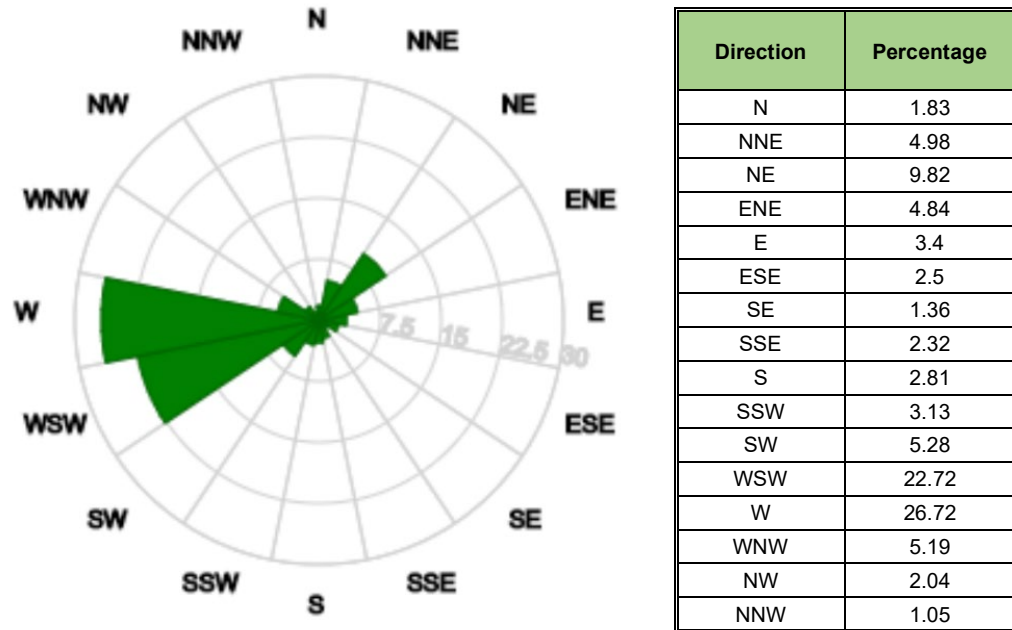
6.13.14 The Gwent Levels SSSI is located the south and the east of the proposed transfer station whilst the Rumney Quarry and Rumney River Section SSSIs are located to the northwest of the proposed site.

6.13.15 In addition to its designation as a SSSI, the Severn Estuary is also designated as a Ramsar Site, a Special Area of Conservation (SAC) and a Special Protection Area (SPA), located c.1km to the south and east-southeast of the proposed site boundary. These designations have been applied to the Severn Estuary due the area supporting habitat types and species listed in Annexes I and II of the Habitats Directive.

6.13.16 No other statutory sites are located within 1km of the proposed site.

- 6.13.17 In addition to the abovementioned statutory sites, the site is also located within 1km of five sites with non-statutory Sites of Importance for Nature Conservation (SINC) designation; Lamby Way SINC, Lamby North SINC, Rhymney Grassland East SINC, Lamby Salt Marsh SINC and River Rhymney SINC. The sites have been designated due to the presence of the following priority habitats:
- Lamby Way SINC:
 - *Lowland meadow, purple moor-grass and rush pasture;*
 - Lamby North SINC:
 - *Coastal saltmarsh;*
 - Rhymney Grassland East SINC:
 - *Lowland meadow and lowland calcareous meadow;*
 - Lamby Salt Marsh SINC:
 - *Coastal saltmarsh;*
 - River Rhymney SINC:
 - *River.*
- 6.13.18 Accordingly, to ensure that the risks posed to these receptors were fully assessed, these receptors were included in the both the Fugitive Risk Assessment and Management Plan (**Doc. Ref.: BF5023/06/FRA**) and Accident Risk Assessment and Management Plan (**Doc. Ref.: BF5023/06/ARA**).
- 6.13.19 Due to their designations as Geological SSSI it is considered that the activities at the proposed Waste Transfer Station will not result in any adverse impact on to SSSI designation.
- 6.13.20 The risk assessments identified that due to the proposed impermeable surfacing, sealed drainage systems and the impermeable nature of the Tidal Flat deposits underlying the site that the risk of hydrogeology pollution from the proposed site activities is minimal.
- 6.13.21 A review of the dominant wind direction for the local area derived from the nearest meteorological station to the site, Station EGFF (Cardiff-Wales Airport) was undertaken to identify the predominant direction any fugitive emissions would travel in the unlikely event of their emission.
- 6.13.22 Station EGFF (Cardiff-Wales Airport) is located c.19km southwest of the proposed site. The weather station is deemed the most appropriate for use in order to characterise the site due to its proximity and its environmental setting. Wind patterns at Cardiff-Wales Airport are likely to be similar to those experienced at the site.
- 6.13.23 Data from the RenSMART wind data archive, for a 10-year period between 2000 and 2010 for Cardiff-Wales Airport station has been utilised in order to typify the meteorological conditions likely at proposed Waste Transfer Station. The wind rose, as shown by **Figure 2** shows the percentage of wind vector that could be generated in each of the 16 points of a compass.

Figure 2: Wind Rose for Cardiff-Wales Airport Station (Cardiff-Wales Airport) between 2000 and 2010



- 6.13.24 The wind rose indicates that the predominant wind directions are from the west and west-southwest. Therefore, it is considered that the experienced at the proposed site wind will be principally be blowing eastwards.
- 6.13.25 In light of the above, it is considered that the position of the Severn Estuary SSSI/SPA/SAC/Ramsar Site, the Rumney Quarry SSSI and the Rumney River Section SSSI are not downwind of the prevailing wind direction for the site and therefore the risk of these receptors being exposed to windblown fugitive emissions is severely limited.
- 6.13.26 The Gwent Levels SSSI is the only identified SSSI receptor within 1km and located downwind of the proposed site. Despite the positioning of this receptor relative to the proposed site, it is considered that the risk posed to the integrity of the Gwent Levels SSSI by the proposed transfer station activities is negligible. This assessment is due to the emissions control measures to be employed which will prevent the release of emissions from activities associated with the proposed site.
- 6.13.27 In light of the standalone fugitive and accident risk assessments it is considered that not only does the site not pose a risk to both the receptors immediately adjacent to the proposed site and receptors located further beyond the proposed site boundary.

7.0 CLOSURE

7.1 Design Measures

- 7.1.1 Design of the facility and operational procedures are intended to prevent any deterioration of the site during the operational period. Records of any incidents or spillages will be examined upon closure to identify and focus any requirements for site investigation. A final site report will be prepared and submitted in conjunction with an application to surrender the Environmental Permit for the facility.
- 7.1.2 The facility's design promotes re-use for other similar industrial operations or where necessary decommissioning. Engineered containment measures at the site are/will be constructed with or will be sited upon concrete of appropriate specification to prevent deterioration. All remaining raw and waste materials at the site will be removed and disposed of or recovered or re-used where appropriate, with regard to prevailing practices at the time of decommissioning.
- 7.1.3 All potentially polluting waste activities will be undertaken on an appropriately engineered surface with a sealed drainage system. This will prevent potentially polluting direct discharges to land or water.
- 7.1.4 The operational nature and design will aid the decommissioning/relocation process. All waste storage and processing areas are undertaken on a substantial engineered surface, which can be removed and treated if/as required. All remaining raw and waste materials at the site will be removed and disposed of or relocated to another designated site within the locality, in the event of the process of permit surrender being initiated.
- 7.1.5 Items of plant will be removed and reused, reconditioned or recycled as appropriate.
- 7.1.6 The procedures for the closure of the operational site comply with indicative BAT requirements for Closure as set out in Sector Guidance Note IPPC S5.06, the BRef for Waste Treatment Document and BAT Conclusion Document (2018/1147) as in **Table 25** shown below:

Table 24: Indicative BAT Requirements for Closure

Indicative BAT requirements for Closure	To be undertaken at the Installation	Comments
Operations during the course of the Environmental Permit will not lead to any deterioration of the site condition	✓	
Care and consideration should be given at the design and build stage of the development to ensure the risks from decommissioning are minimised	✓	
A site closure plan should be maintained to demonstrate that, in its current state, the installation can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state.	✓	