Area	Requirement	Ecobat operating techniques / procedure / management system reference	GAP Analys practices an gaps will be
Waste pre- acceptance	<ol> <li>You must implement waste pre-acceptance procedures so that you know enough about a waste (including its composition) before it arrives at your facility. You need to do this to assess and confirm the waste is technically and legally suitable for your facility and processes.</li> <li>Your procedures must follow a risk-based approach, considering:         <ul> <li>the source and nature of the waste</li> <li>ths hazardous properties</li> <li>potential risks to process safety, occupational safety, and the environment (for example, from deflagrations and other emissions such as noise or particulates)</li> </ul> </li> <li>You must get the following information in writing when you receive a customer query:         <ul> <li>details of the waste producer including organisation name, address, and contact details</li> <li>the specific source of the waste - for example, ELV depollution site, general scrap metal transfer station, car manufacture, or metal from other types of manufacturing processes</li> <li>a description of the waste including its composition and quantity</li> <li>the list of Waste code (European Waste Classification, EWC, code)</li> <li>if the waste has an EWC code showing it is a non-hazardous mirror entry - you should request evidence of the assessment from the producer</li> <li>any hazardous properties or whether it contains any regulated chemicals, for example, POPs.</li> <li>confirmation from the producer that drums will be accompanied by a certificate of cleanliness.</li> </ul> </li> <li>You must also get confirmation that the waste is not radioactive source. If there is a risk of radioactive contamination you must get confirmation that the waste is not radioactive unless your facility is permitted to accept such waste.</li> <li>You must also get confirmation (for example, gas or aerosol canisters, haled ELVs or undepolluted ELVs)&lt;</li></ol>	<ol> <li>Waste pre-acceptance in place for Ecobat Solutions since 2014. Reviewed at least annually to improve performance, or information needed. Recently Lithium questionnaire introduced specifically for Lithium received for shredding.</li> <li>Pre-acceptance includes 5 step approval process, customer services, technical, operational / QHSE, driver and customs control on site. Information requested includes photographs, sources of material, history of material, composition of material to assess the potential risks to site, employees, public and the environment.</li> <li>All applicable points are covered within the lithium questionnaire and the Mixed NLA control form for pre-acceptance.</li> <li>Not applicable. No sources of material will currently be from a radioactive source, if this is identified during pre-acceptance, declaration will be requested and investigated further.</li> <li>Pre-acceptance is paramount for identifying and minimising the risk of fire with lithium batteries especially.</li> <li>This is the main collection for Ecobat therefore all procedures are specific to batteries, including and mainly Lithium batteries. Ecobat engineers are available to visit sits. Ecobat also works alongside OEMs.</li> <li>All pre-acceptance declarations and supporting documents are kept on IT server for the life of the facility.</li> <li>Each collection has a pre-acceptance in place.</li> <li>N/A as above.</li> </ol>	None

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es and BAT conclusions and how ill be addressed	

#### BAT Analysis of Ecobat Solutions Operations May 2023 – Updated September 2023

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	have enough storage and treatment capacity.		
Waste Acceptance	<ol> <li>You must implement waste acceptance procedures to check that the characteristics of the waste received matches the information you obtained during waste pre-acceptance. This is to confirm that the waste is as expected and that you can accept it.</li> <li>If the waste is not as expected, you must confirm that you can accept it as a non-conforming waste, or you must reject it. If you are rejecting hazardous waste you must follow the guidance on the procedure for rejecting hazardous waste.</li> <li>Procedures should be documented and auditable and must follow a risk-based approach, considering:         <ul> <li>the source, nature and age of the waste</li> <li>the waste's hazardous properties</li> <li>the waste's potential to contain POPs</li> <li>potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)</li> <li>knowledge about the previous waste holders</li> </ul> </li> <li>Some facilities receive waste on an ad hoc basis, which may occur with loads of metal waste. In those instances you can still do pre-acceptance checks before you accept the waste. For example, by exchanging information at the weighbridge before accepting the waste on site.</li> <ul> <li>You must assess the load to make sure it is technically (and legally) suitable for the plant. Your checks and assessment must be risk-based considering, for example, the:</li></ul></ol>	<ol> <li>Waste acceptance forms part of the pre- acceptance. The driver will inspect all material against approved documentation he has (pre- acceptance form), if any discrepancies collection to be aborted. On arrival to site, internal customs control inspects all material, along with off-loading supervisors during offloading processes.</li> <li>Non-conformance process is in place and dedicated quarantine area.</li> <li>All the items listed are recorded within the control form / lithium questionnaire during pre- acceptance.</li> <li>This is included within the technical review completed during waste pre-acceptance. If any questions, collection put on hold until information can be confirmed or engineer visits customer's site.</li> </ol>	None
	<ul> <li>Storage areas</li> <li>S. All relevant storage areas (quarantine, reception and general) and treatment processes in your facility must have the physical capacity needed for the waste you receive. You must not receive wastes if this capacity is not available. The amount of waste you receive must also comply with storage limits in your permit.</li> <li>The waste offloading, reception and quarantine areas must have impermeable surfaces with a sealed drainage system. This system must collect all surface water run off and channel it to a blind sump, unless you can lawfully discharge it in another way.</li> <li>You must clearly designate a materials reception area (or areas). Staff controlling the inspection, reception and validation of materials at the installation, must be trained in their respective roles.</li> <li>Waste acceptance</li> <li>You must weigh each load of waste on arrival to confirm the quantities against the accompanying paperwork, unless alternative reliable systems are available (for example, based upon volume). You must record the weight in the computerised waste tracking system.</li> <li>You must address this with the customer during waste acceptance. You must record any nonconformances. If you believe the incoming waste as acceptable for on-site storage or treatment, you must document this.</li> <li>You runst use clear criteria for rejecting non-conforming wastes. You must also have a written procedure for recording, reporting and tracking non-conforming wastes, including notifying the relevant customer or waste producer to prevent reoccurrence.</li> <li>Monitoring for radioactive substances</li> <li>You must have fixed radiation detectors on weighbridges to monitor waste delivered to the site for any radioactive substances or materials. These detectors must have both a visual and audible alarm. You must also have a hand held detector to investigate alarms generated by the fixed radiation detectors.</li> </ul>	<ul> <li>5. Capacity of storage areas is recorded on a weekly basis, this is monitored for incoming stock during the operational check during waste pre-acceptance.</li> <li>6. Offloading / loading, reception and quarantine areas are impermeable surfaces with sealed drainage.</li> <li>7. Customs control, no one can enter or leave site without checking in to customs control as the site is fenced. All personnel on site including administrators etc are trained in ADR awareness, level dependant on their job role.</li> <li>8. Each consignment is weighted on the vehicle using vehicle mounted FLT along with calibrated scales. In the event of check weights required (completed ad hoc) or the breakdown of scales, there are calibrated scales on site (including two weighbridges and 6 platforms scales).</li> <li>9. Customs controls role including validating all paperwork and reporting any non-conformances.</li> <li>10. Non-conformance process in place. Ecobat will accept the material and place in to quarantine area as to not send the material back</li> </ul>	

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#### BAT Analysis of Ecobat Solutions Operations

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	<ul> <li>International Atomic Energy Agency. These are specified in Annex IV of 'Recommendations on Monitoring and Response Procedures for Radioactive Scrap Metal', UNECE, 2006.</li> <li>13. You must maintain, calibrate and test the radiation monitoring equipment in accordance with the manufacturer's specification.</li> <li>14. You must have clear procedures for responding to radiation detector alarms.</li> <li>There is a standard rules permit available for radioactive material or radioactive waste that you receive unintentionally: <u>SR2017 No1: Unintentional receipt of radioactive materials and radioactive waste by the operator of any facility which uses a radiation detection system.</u></li> <li>Acceptance of drums and tanks</li> <li>15. You must make sure you only receive and accept drums or tanks: <ul> <li>that have a certificate of cleanliness</li> <li>with prior notice</li> <li>with hazard warning symbols obliterated</li> </ul> </li> </ul>	out unsafely / non-compliantly with our duty of care. 11. Not deemed necessary due to the material collected and rigidus pre-acceptance process. Also, each consignment is collected individually and in packages, no bulk loads received. 12. Not applicable. 13. Not applicable 14. Not applicable	
	<ul> <li>Acceptance of baled metal waste</li> <li>16. You must produce and follow a detailed procedure for accepting and inspecting baled material before accepting bales for processing. For example, batch acceptance, inspection and upstream auditing.</li> <li>17. You must carry out risk-based assessments for baled and other infeed materials. You must base your inspection and pre-processing procedures on these assessments before fragmentising. This may include, but not be limited to, different inspection frequencies for different customers, depending on risk.</li> <li>Quarantine storage</li> </ul>	15. Drums received on site and owned by Ecobat that are purchased new and used to store batteries in only.	
	<ul> <li>18. You must establish quarantine areas for materials that are prohibited, awaiting full inspection, or awaiting testing or removal.</li> <li>19. Quarantine storage must be for a maximum of 14 working days. For some limited and specific cases (for example gas cylinders and beer barrels) you can extend the quarantine storage time if the Environment Agency agrees.</li> <li>20. You must have written procedures for dealing with wastes held in quarantine, and a maximum storage volume.</li> <li>21. Quarantine storage must be separate from all other storage and clearly marked as a quarantine area.</li> <li>22. You must identify and isolate gas cylinders and other prohibited items to remove them from the waste stream. You must store gas cylinders in locked cages. Where possible, you must send prohibited</li> </ul>	<ul> <li>16. Not applicable</li> <li>17. Not applicable</li> <li>18. There are two quarantine areas on site (sacrificial building and storge cage).</li> <li>19. Procedure in place on weekly inspections and if material within areas quarantines it will</li> </ul>	
	items back to the appropriate owner.	be recorded, action taken and monitored the following week to ensure the process has continued. 20. Sacrificial building process in place. 21. Quarantine area is adequately marked in dedicated areas away from the main facility. 22. Non-conformance process in place along with dedicated storage area when found (cage as above).	
Waste Tracking	<ol> <li>You must use a computerised tracking system to hold up-to-date information about the available capacity of the waste quarantine, reception, general and bulk storage areas of your facility. This must also include treatment residues and end-of-waste product materials.</li> <li>Your waste tracking system must hold all the information generated during:         <ul> <li>pre-acceptance</li> <li>acceptance</li> <li>non-conformance or rejection</li> <li>storage</li> <li>repackaging</li> <li>treatment</li> <li>removal off site</li> </ul> </li> </ol>	<ol> <li>At Darlaston there are currently two computerised tracking system for wastes, these are David.net &amp; WASP.</li> <li>Information stored on P drive and readily available for all Ecobat personnel to share when requested.</li> </ol>	WMS (wa by US to r two syste adequate Site Opera Director o system fo with Peak

waste management system) being identified	December
o minimise the currently working between stems. SAP trialled for 6months and not ate for our operations. erations controller with guidance from or of operations investigating a suitable for our operations. Currently in discussion eak.	2023 to select a supplier for a bespoke system. March 2024 installation and

#### BAT Analysis of Ecobat Solutions Operations

	<ul> <li>You must make this information readily available.</li> <li>3. You must create records and update them to show deliveries, on-site treatment, and despatches. Your tracking system will also operate as a waste inventory and stock control system. It must include this information as a minimum: <ul> <li>the date the waste arrived on-site.</li> <li>the original producer's details (or unique identifier)</li> <li>a unique reference numbers.</li> <li>waste pre-acceptance and acceptance information</li> <li>the intended treatment or disposal route</li> <li>accurate records of the nature and quantity of wastes held on site, including all hazards (identifying the primary hazards)</li> <li>where the waste is physically located on site</li> </ul> </li> <li>4. The tracking system must be able to report: <ul> <li>the quantity of waste present on site at any one time</li> <li>a breakdown by type of the waste quantities you are storing pending treatment or transfer</li> <li>the quantity of end-of-waste product materials on site at any one time, and where applicable, details of any non-conformances and rejections</li> </ul> </li> <li>5. You must store back-up copies of computer records off site. Records must be readily accessible in an emergency.</li> <li>6. You must hold acceptance records for a minimum of 2 years after you have treated the waste or removed it off site. You may have to keep some records for longer if they are required for other purposes for example, bazardous waste constiment or tars</li> </ul>	<ul> <li>3. Currently split between the two systems as above.</li> <li>4. As above.</li> <li>5. INVU stores all scanned documentation. Weekly database back ups stored in a safe away from main facility.</li> <li>6. Consignment notes / WTN held on site for 5 years and on INVU computer system for the life.</li> </ul>	
Waste storage locations	<ol> <li>purposes, for example, hazardous waste consignment notes.</li> <li>You must store waste in locations that minimise the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment.</li> <li>You should design and operate your facility in a way that minimises waste handling.</li> <li>You must store shredder non-metallic fractions under cover.</li> <li>Where possible, you should locate storage areas away from watercourses and sensitive boundaries (for example, those close to public rights of way, housing or schools).</li> <li>You must store all waste within the security protected area of your facility to prevent unauthorised access and vandalism.</li> </ol>	<ul> <li>years and on INVU computer system for the life of the facility.</li> <li>1. Lean programmes instilled on site, reviews completed regularly to ensure emphasizing production process flow.</li> <li>2. During construction of unit 3 for new shredder an additional shutter door will be implemented.</li> <li>3. Storage building 2 &amp; 3 erected for this purpose</li> <li>4. Risk assessment completed, fully bunded site / buildings.</li> </ul>	2. Additiona waste handl implemente included in t
Waste storage duration and capacity	<ol> <li>You must clearly establish the maximum storage capacity of the site and the designated storage areas. You must not exceed these maximum capacities.</li> <li>You must define capacity in pile sizes as well as tonnage. You must regularly monitor the quantity of stored waste on the site and within the designated areas to check against the allowed maximum capacity. You must also monitor the quantities and pile sizes against those set out in your fire prevention plan.</li> <li>You must not accumulate waste. You must treat wastes, or remove them from the site, as soon as possible. Generally all wastes must be removed within a maximum of 6 months of receipt. If you have a shorter time period as a permit condition, you must comply with that condition for that waste.</li> <li>You must store all waste in a way that allows easy inspection. You must maintain safe access between piles of wastes. There must be pedestrian and vehicular access (for example shovel loader, crane, grab loader) at all times to the whole of the storage area.</li> <li>You must store and handle waste in a way that prevents pests and vermin, see our guidance on pest management plans. You must have specific measures and procedures in place to identify and manage any wastes that attract pests or vermin at your site.</li> </ol>	<ul> <li>5. Security provisions in place on site</li> <li>1.7000T across all of site on V008 approval. Each area is either within a racking system identifying storage limits or within storage bays (maximum 21 pallet spaces) per bay.</li> <li>2. No piles on site.</li> <li>3. Stock control procedure in place on site.</li> <li>4. Each storage area has mitigation controls in place, either concrete frames or separation spaces.</li> <li>5. Pest control programmes on site. All material stored within containers and sealed.</li> </ul>	

	running of system.
onal door to be implemented to minimise ndling. A shutter door is being nted between unit 4 & unit 3 and is in the agreed architects' plans.	October 2023

#### BAT Analysis of Ecobat Solutions Operations

	<ul> <li>6. You must inspect storage areas, containers and infrastructure daily. You must deal with any issues immediately. You must keep written records of the inspections. You must rectify and log any waste spillages.</li> <li>7. You must not carry out activities that represent a clear fire risk within any storage area unless they are clear of waste. Examples include: <ul> <li>grinding and cutting repairs within the storage area welding or brazing of metalwork within the storage area</li> <li>smoking</li> <li>parking of normal road vehicles except while unloading or loading</li> <li>recharging forklift truck or power tool batteries</li> </ul> </li> </ul>	<ul><li>6. Monthly check completed; daily visual check completed however not logged.</li><li>7. All work completed in designated work areas. Permit to work system in place.</li></ul>	6. Daily waste storage, containers, and infrastructure inspection record to be implemented by recently appointed Senior Site Supervisor.	December 2023
DSEAR	1. You should assess areas of the site where explosive atmospheres could occur (for example, ELV depollution bays). Where appropriate, you must classify these into hazardous zones, following the <u>Dangerous Substances and Explosive Atmospheres Regulation 2002 (DSEAR)</u> .	<ol> <li>DSEAR assessment completed on site including small scale shredder October 2022. 1 Potential area (small scale shredder) for a Zone 21. Signs implemented.</li> <li>On arrival of new machinery the DSEAR assessment will be reviewed.</li> </ol>		
Waste Battery Storage	<ol> <li>You must check for damage and the chemistry type of any batteries:         <ul> <li>produced through depollution activities on site</li> <li>accepted as discrete loads</li> </ul> </li> <li>You must do this before allocating them to the storage area.</li> <li>You must isolate damaged batteries from other batteries.</li> <li>You must store batteries in either appropriate weatherproof containers, or in appropriate containers within a building.</li> <li>You must store:         <ul> <li>lead acid batteries upright with terminals taped off or capped in acid proof containers to prevent leaks and short circuits</li> <li>nickel metal hydride (Ni-MH) batteries in a way that will prevent them being damaged</li> </ul> </li> <li>You must store Li-ion batteries from electric vehicles separately from other batteries. You must store them in a way that prevents them from:             <ul> <li>coming into contact with any liquids</li> <li>being damaged</li> <li>being amaged</li> <li>being exposed to high temperatures</li> </ul> </li> </ol>	<ol> <li>Assessment will be reviewed.</li> <li>Waste pre-acceptance procedures in place. Visual inspections completed, holding area in place prior to sorting / dismantling commencing.</li> <li>Damaged batteries identified and placed within sacrificial building / dedicated area.</li> <li>All containers on site are approved for use, either with a lid or plastic bag for weatherproofing.</li> <li>Storage procedures in placed for all battery chemistries including lead and nickel.</li> <li>Ni-Mh has dedicated storage on site away from other materials.</li> <li>Dedicated storage buildings on site, 1, 2 &amp; 3.</li> </ol>		
General Waste treatment	<ol> <li>Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise the waste treatment process to make sure you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it.</li> <li>The treated output material must meet your expectations and be suitable for its intended disposal or recovery route.</li> <li>You must identify and characterise emissions from the process and take appropriate measures to control them at source.</li> <li>You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using. This should include information about the characteristics of the waste you will treat and the waste treatment processes, including:</li> </ol>	<ol> <li>This is covered in 8.3 treatment operations for ABTO.</li> <li>Small scale shredder and sieving process will be used for this purpose to identify quality of output.</li> <li>Currently on-going through IC2 on the permit.</li> </ol>	3. On-going IC2 Additional monitoring will be completed on commissions the large-scale shredder (QTR 1 24)	October 2023 April 2024
	<ul> <li>simplified process flow sheets that show the origin of any emissions</li> <li>details of emission control and abatement techniques for emissions to air and water, including details of their performance</li> <li>diagrams of the main plant items where they have environmental relevance – for example, storage, tanks, treatment and abatement plant design</li> </ul>	4. Planned equipment and processes agreed to be reviewed on large scale shredder implementation.	4. On implementation of plant review to further identify treatment activities, additional abatement, and control equipment.	April 2024



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	<ul> <li>details of physical treatment processes, for example shredding, separation, compaction or washing</li> <li>details of any chemical treatment processes</li> <li>details of any predict treatment processes</li> <li>details of any operating and treatment processes</li> <li>details of any effluent treatment, including a description of any flocculants or coagulants used</li> <li>an equipment inventory, detailing plant type and design parameters – for example, time, temperature, pressure</li> <li>waste types undergoing the process</li> <li>the control system and how it incorporates environmental monitoring information</li> <li>process flow diagrams (schematics)</li> <li>venting and emergency relief provisions</li> <li>a summary of operating and maintenance procedures</li> <li>process instrumentation diagrams</li> <li>S. You must have up-to-date written details of the measures you will take during abnormal operating conditions to make sure you continue to comply with permit conditions. Abnormal operating conditions to make sure you continue to comply with permit conditions. Abnormal operating conditions to make sure you continue to comply with permit conditions. Abnormal operating conditions to make sure you continue to comply with permit conditions. Abnormal operating conditions to make sure you continue to appropriate treatment for the waste either directly at the site or at any subsequent treatment temporpriate treatment for the waste either directly at the site or at any subsequent treatment auguity in the:</li> <li>waste treatment emissions</li> <li>You should use the analysis to determine the appropriate treatment for make sure you correctly treat and either destroy or remove them. See also the section on POPs (5.3).</li> <li>The use of material flow analysis is risk-based and should consider:</li> <li>the hazardous properties of the waste</li> <li>the risks posed by the waste in terms of process safety</li> <li>occupational safe</li></ul>	<ul> <li>5. In the process of being implemented. Currently under review</li> <li>6. Will be completed upon plant commissioning.</li> <li>7. Detailed within risk assessment and trained out to employees.</li> </ul>	5. Impleme commissio
	a significant environmental impact		
Metal shredding plant and downstream process	<ol> <li>The metal shredding plant and downstream plant and processes must be specifically designed, commissioned and operated to be fit for purpose.</li> <li>The designs need to consider physical hazards and include an assessment of the environmental risks and emissions from the plant and processes. They also need to consider prevention and protective measures and process management, such as:         <ul> <li>working instructions</li> </ul> </li> </ol>	<ol> <li>Plant is specifically being designed for the shredding and separation of lithium batteries.</li> <li>Initial risk assessment completed, prior to installation Haz Op to be completed</li> </ol>	2. Haz Op t

lement agreed and approved process prior to issioning work being completed.	December 2023
plete material flow analysis on plant issioning	April 2024
Op to be completed	2. August 2023

### ecobat solutions

	Ividy 2025 – 0	pdated September 2023		
POPs	<ul> <li>staff training</li> <li>appropriate process control measures</li> <li>monitoring systems, alarms and interlocks</li> <li>plant maintenance</li> <li>checks</li> <li>audits</li> <li>emergency procedures</li> <li>If you treat small mixed WEEE or large domestic appliances you must comply with the requirements of Waste Electrical and Electronic Equipment (WEEE) guidance. We are producing further guidance on appropriate measures for permitted WEEE facilities.</li> <li>You must process shredder non-metallic fractions under cover. You may use a range of separation technologies to further segregate and purify shredded fractions. Examples include:         <ul> <li>air classification</li> <li>ail-metal separation</li> <li>density separation</li> <li>magnetic separation of non-ferrous metals</li> <li>manual separation</li> <li>density separation</li> <li>vibration tables either at the shredding facility or elsewhere</li> </ul> </li> <li>You must not use a waste code for a single material fraction, such as plastic, unless the process is specifically and code the waste. You should do this in accordance with the waste classification guidance.</li> <li>You must not use a waste code for a single material fraction, such as plastic, unless the process is specifically and code the waste. You should do this in accordance with the waste classification guidance.</li> <li>You must also fully characterise and classify process solutions and washings from density separation processes before determining suitable disposal options.</li> </ul> Some plastic components found in metal waste may contain flame retardants that are POPs. 1. You must assess fractions containing plastic (including process solutions and washings from density separation processes for POPs. 2. You must therefore asses plastic containing fractions at each stage in the treatment process to establish wheth	<ul> <li>3. Shredder is enclosed system and will be housed within unit 3 on site (under cover). Also separation will consist of density and magnetic separation.</li> <li>4. WM3 assessment to be implemented following commissions of plant.</li> <li>5. Agreed.</li> <li>6. Agreed.</li> </ul> This will be included during the WM3 assessment detailed above.	4. WM3 assessment	4. February 2024
Antimony Trioxide	<ul> <li>process solutions and washings from density separation processes</li> <li>solid fractions produced by any process</li> <li>Antimony trioxide has been widely used as a synergist with a range of BFRs. It is present in some plastics at concentrations which exceed the hazardous waste threshold. You must therefore consider antimony trioxide when you are classifying any plastic containing fraction.</li> </ul>	Non present within material handled by Ecobat.		

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	1Viay 2025 0	pdated September 2023		
Minimising diffuse emissions from the process	<ol> <li>You must minimise the release of diffuse emissions to air from activities which may create them, for example shredding or granulating. You must do this by:         <ul> <li>carrying out the activity using enclosed equipment or in a closed building</li> </ul> </li> </ol>	1.Plant will have enclosed equipment also within an enclosed building. Maintenance plant will be implemented (PPM), abatement system		
process	<ul> <li>call ying out the activity using enclosed equipment of in a closed building</li> <li>maintaining the enclosed equipment or building under an appropriate pressure</li> <li>collecting and directing the emission to an appropriate abatement system</li> <li>using a shredder system with water or foam injection into the mill</li> </ul>	(scrubber and baghouse) along with the system having water sprays in place.		
	<ul> <li>2. To track and control changes to processes, you must have a written procedure for proposing, considering and approving changes to both:</li> <li>technical developments</li> </ul>	2. Management of change procedure in place.		
	<ul> <li>procedural or quality changes to the plant and processes</li> <li>3. Where you expect an emission, you must enclose all treatment plants and only vent to air using an appropriate scrubbing and abatement system (subject to deflagration relief).</li> </ul>	3. All system will only vent to air using abatement system.		
Record keeping for all treatment residues	<ul> <li>You must record in the computerised waste tracking system:</li> <li>that a waste has been treated</li> <li>what the treatment residues are and their weight</li> <li>what end-of-waste products have been made and their weight</li> </ul>	Currently will be recorded within WASP. WMS being investigated to be implemented as identified in Waste Tracking section.		
Point source	1. You must contain the waste treatment plant (including shredders) to make sure you collect, extract	1. All shredders are enclosed and directed to the		
emissions to air	and direct all process emissions to an appropriate abatement system for treatment before release.	abatement (scrubber and baghouse)		
	2. You must identify the main chemical constituents of the site's point source emissions as part of the	2. Will be completed on commissioning of plant,	2. Identify sites inventory of emissions to air	February
	site's inventory of emissions to air. You must include the speciation of volatile organic compounds (VOCs)	also Germany data will be used in September to		2024
	if you have identified them in the emissions inventory and it is practicable to do so.	make an initial assessment 3. H1 to be completed following the above.		
	3. You must assess the fate and impact of the substances emitted to air, following the Environment Agency's <u>air emissions risk assessment methodology</u> .	5. HI to be completed following the above.		
	4. To reduce point source emissions to air (for example, dust, VOCs and odour) from waste treatment,	4. Fabric filters and wet scrubber will be in		
	you must use an appropriate combination of abatement techniques, including one or more of the following systems:	place.		
	cyclonic filtration			
	• fabric filters			
	wet scrubbing			
	high efficiency particulate (HEPA) filter			
	5. You must assess and design vent and stack locations and heights to make sure dispersion capability is adequate.	designed inline with EN15259 6.2 & 6.3.		
	6. Where monitoring is required, you must install suitable monitoring points. Monitoring points will be required to meet MCERTS standards. You can find further guidance in the Environment Agency's <u>M1</u> –Guidance on sampling requirements for monitoring stack emissions.	6. Will be reviewed following commissions of plant.	6. Review on commissioning	February 2024
	7. Your procedures must make sure you correctly install, operate, monitor and maintain abatement	7. Procedure to be implemented following	7. Implement procedure	December
	equipment. For example, this includes monitoring and maintaining:	design confirmation of equipment		2023
	appropriate flow and chemical concentration of scrubber liquor			
	the handling and disposal or regeneration of spent scrubber or filter medium			
Fugitive emissions to	1. You must use appropriate measures to prevent emissions of dust, mud and litter and odour. See our	1. Identified along with control measures within		
air (including Odour)	guidance on suggested appropriate measures to <u>control dust, mud and litter</u> and to <u>control odour</u> .	RA47 Environmental Risk Assessment		
	2. You must design, operate and maintain storage and treatment plant in a way that prevents fugitive	2. Plant designed with an enclosed process to		
	emissions to air, including dust, organic compounds and odour. Where that is not possible, you must	prevent emissions to air, dust, organic		
	minimise these emissions.	compounds, and odour. This will be reviewed		
	Storage and treatment plant includes associated equipment and infrastructure such as:	again on plant arrival to site		
	<ul> <li>shredders</li> <li>conveyors</li> </ul>			

### ecobat solutions

#### BAT Analysis of Ecobat Solutions Operations

May 2023 – Up	odated September 2023		
building fabric, including doors and windows			
pipework and ducting			
3. You must minimise the number of potential diffuse dust and particulates emission sources, using a	3. Conveyors belts covered including transfer		
combination of the following:	points, water spray throughout the shredding		
<ul> <li>limiting the drop height of material</li> </ul>	processes, venting pipework and ducting to the		
using wind barriers	abatement system to prevent fugitive emissions.		
<ul> <li>covering conveyor belts, including enclosure of transfer points</li> </ul>			
<ul> <li>fitting spray nozzles or rubber flaps to the inlet and outlet of the shredder mill</li> </ul>			
<ul> <li>using misting systems and wind barriers in areas with significant dust formation</li> </ul>			
<ul> <li>venting pipe work and ducting to an appropriate abatement system to prevent fugitive</li> </ul>			
emissions			
4. To make sure fugitive emissions are collected and directed to appropriate abatement, your treatment	4. High integrity seals will be in place and PPM		
plant must use high integrity components (for example, seals or gaskets).	to monitor and replace where needed.		
5. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures	5. All waste through plant will be lithium		
to identify and manage wastes that could cause, or are causing, fugitive emissions to air. Examples could	batteries using pre-acceptance and acceptance		
include gas cylinders, items concealed in baled waste, or poorly depolluted ELVs. When you identify any	checks. Material will go through testing,		
of these wastes you must:	discharging and disassembly prior to shredding.		
<ul> <li>take appropriate, risk assessed measures to prevent and control emissions</li> </ul>			
prioritise their treatment or transfer			
Storage of odorous or dusty wastes			
6. Where necessary, to prevent fugitive emissions to air from storing and handling odorous or dusty	6, 7 & 8 – all material will be stored within		
wastes, you should use a combination of the following measures (7 to 13).	sealed containers and within enclosed building		
7. You should store and handle the waste within an enclosed building including:	(either unit 3, or storage buildings 1,2 or 3).		
<ul> <li>light fractions of the shredder residue</li> </ul>			
<ul> <li>dust derived from sweeping the waste treatment and storage areas</li> </ul>			
dust derived from the abatement equipment			
8. You should use fully enclosed material transfer and storage systems and equipment, for example:			
conveyors			
hoppers			
containers			
tanks and skips			
9. You should keep enclosed buildings and equipment under adequate negative pressure with an	9. Extraction fans to be implemented during	9 / 10. Include with architects on specification of	July
appropriate abated air circulation and extraction system. Where possible, locate air extraction points	building re-construction	building	
close to potential emissions sources.	10. Fast acting shutter doors will be		
10. You should:	implemented during building re-construction		
<ul> <li>use fast-acting or 'airlock' doors that default closed</li> <li>domnon not onticl sources of diffuse dust amissions (such as the shredder inlet and outlet</li> </ul>			
<ul> <li>dampen potential sources of diffuse dust emissions (such as the shredder inlet and outlet, traffic areas and open handling processes) with water or fog</li> </ul>			
traffic areas and open handling processes) with water or fog 11. You must fully enclose and contain pre- and post-treatment shredder plant to prevent emissions.	11. Fully enclosed		
12. You must design and operate the shredder plant using appropriate process interlocks. The plant	12. Confirmation needed to ensure included on	12. Ensure specification included on BCA plant	July
should not operate unless it is enclosed and contained, for example, only working when the loading door			July
on the hopper is closed or sealed.	design.		
13. You must contain and extract dust emissions from the shredder plant to an appropriate abatement	13. Dust emissions will be extracted into		
system, for example HEPA air filtration.	emissions kit.		
14. Where ambient dust monitoring is required it must be carried out by MCERTS qualified staff.	14, 15. will be reviewed on installation of plant.		
15. You must use monitoring equipment that meets as a minimum the MCERTS Performance Standards			
for Indicative Amhient Particulate Monitors. You must calibrate the equipment following the	1		
for Indicative Ambient Particulate Monitors. You must calibrate the equipment following the manufacturer's recommendations and it must be canable of providing representative data that			
manufacturer's recommendations and it must be capable of providing representative data that			
	16. As above, will be reviewed and implemented		

#### BAT Analysis of Ecobat Solutions Operations

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Maintenance and cleaning 17. You must set up a leak detection and repair programme and use it to promptly identify and mitigate any fugitive emissions from treatment plant and associated infrastructure (for example, pipework, conveyors, tanks).	17, 18, 19, 21. This will be included in the PPM	17. Include in PPM	December 2023
<ul> <li>18. You must regularly inspect and clean all waste storage and treatment areas, equipment (including conveyor belts) and containers. You must contain any residues collected during cleaning.</li> <li>19. Your maintenance and cleaning schedules must make sure that tanks and plant are regularly cleaned to avoid large-scale decontamination activities.</li> <li>20. You must take measures to prevent the corrosion of plant and equipment (for example, conveyors or pipes). This includes: <ul> <li>selecting and using appropriate construction materials</li> </ul> </li> </ul>	20. Inspection of this will be included in PPM. Plant will be made from steel, and it is unlikely for corrosive substances to be in contact.		
<ul> <li>lining or coating equipment with corrosion inhibitors</li> <li>regularly inspecting and maintaining plant</li> <li>21. You must have an appropriate regular maintenance programme covering all buildings, plant and</li> </ul>			
equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases.	22 Minimum usago, coaled drainago system		
22. If you wash out drums or containers, you must design and operate the washing process and associated equipment in a way that prevents fugitive emissions to air. For example, you could carry out this activity in a contained or enclosed system.	22. Minimum usage, sealed drainage system.		
<ul> <li>Odorous wastes</li> <li>23. You must have procedures to minimise the amount of time odorous wastes spend in your storage and handling systems (for example, pipes, conveyors, hoppers, tanks). In particular, you must have provisions to manage waste during periods of peak volume.</li> <li>24. You must have measures to contain, collect and treat odorous emissions, including using contained buildings and plant or equipment with appropriate air extraction and abatement. We do not consider</li> </ul>	Odorous Wastes – Not applicable.		
<ul> <li>buildings and plant or equipment with appropriate air extraction and abatement. We do not consider masking agents to be appropriate measures to treat odorous emissions.</li> <li>25. You must monitor odour abatement systems to ensure optimum performance. For example, you should make sure that scrubber liquors are maintained at the correct pH and replenished or replaced at an appropriate frequency.</li> </ul>			
<ul><li>26. Contaminated waters have potential for odours. You must store them in covered or enclosed tanks that are vented to abatement systems, or store them in containers.</li><li>27. Where you expect odour pollution at sensitive receptors, or it has been substantiated, you must</li></ul>			
<ul> <li>periodically monitor odour emissions using European (EN) standards, for example either:</li> <li>dynamic olfactometry according to EN 13725 to determine the odour concentration</li> <li>EN 16841-1 or -2 to determine the odour exposure</li> </ul>			
If you use methods that are not covered by EN standards (for example, estimating odour impact), you should use ISO, national or other international standards to make sure you use data of an equivalent scientific quality. You must set out the monitoring frequency in the odour management plan. 28. Where you expect odour pollution at sensitive receptors, or it has been substantiated, you must also			
<ul> <li>set up, implement and regularly review an odour management plan. It must be part of your management system and include all the following elements: <ul> <li>actions and timelines to address any issues identified</li> </ul> </li> </ul>			
<ul> <li>a procedure for conducting odour monitoring</li> <li>a procedure for responding to identified odour incidents, for example, complaints</li> <li>an odour prevention and reduction programme designed to identify the sources, to characterise the contributions of the sources and to implement prevention and reduction measures</li> </ul>			
29. Where an odour management plan is required, you must develop and implement it following our <u>odour management guidance</u> . Deflagration Management	Deflagration Management – Not applicable.		

#### BAT Analysis of Ecobat Solutions Operations

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	<ul> <li>30. To prevent deflagrations and to reduce emissions where deflagrations have occurred, we may require a deflagration management plan. This should include: <ul> <li>a deflagration reduction programme designed to identify the source, and to implement measures to prevent deflagrations, for example, inspecting waste input and removing dangerous items such as gas cylinders and undepolluted ELVs</li> <li>a review of historical deflagration incidents and remedies and sharing deflagration knowledge</li> <li>a protocol for responding to deflagration incidents</li> </ul> </li> <li>31. You must also have one or both of the following: <ul> <li>pressure relief dampers, to relieve pressure waves from deflagrations that may otherwise cause damage and subsequent emissions</li> <li>pre-shredding – a low speed shredder installed upstream of the main shredder</li> </ul> </li> <li>32. Where there are a large number of deflagration incidents at a site, and other measures taken do not reduce the number, we may require you to install a pre-shredder.</li> </ul>		
Emissions of noise and vibration	<ol> <li>You should design the layout of the facility to locate potential sources of noise (including building exits and entrances) away from sensitive receptors and boundaries. You should locate buildings, walls, and embankments so they act as noise screens.</li> <li>You must use appropriate measures to control noise, including for example:         <ul> <li>adequately maintaining plant or equipment parts which may become more noisy as they deteriorate – for example, bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery</li> <li>closing doors and windows of enclosed areas and buildings</li> <li>avoiding noisy activities at night or early in the morning</li> <li>minimising drop heights and the movement of waste and containers</li> <li>using broadband (white noise) reversing alarms and enforcing the on-site speed limit</li> <li>using low-noise equipment, for example, drive motors, fans, compressors and pumps</li> <li>adequately training and supervising staff</li> <li>where possible, providing additional noise and vibration control equipment for specific noise sources – for example, noise reducers or attenuators, insulation, or sound-proof enclosures</li> <li>including pressure relief control on shredder plant enclosures to take account of possible deflagration incidents</li> </ul> </li> <li>Where you expect noise or vibration pollution at sensitive receptors, or it has been substantiated, you must create, use and regularly review a noise and vibration management plan. This must be part of your environmental management plan should also include a noise and vibration reduction programme designed to:         <ul> <li>a procedure for responding to identified noise and vibration events, for example, complaints</li> </ul> </li> <li>The noise and vibration management plan should also include a noise an</li></ol>	<ol> <li>Initial desktop noise assessment completed.</li> <li>Control measures included in risk assessment along with noise assessment above.</li> <li>Not Applicable</li> <li>Not Applicable</li> <li>Not Applicable</li> <li>Not Applicable</li> </ol>	1. On comm assessment.
Point source emissions to water and sewer	<ol> <li>You must identify the main chemical constituents of the site's point source emissions to water and sewer as part of the site's inventory of emissions.</li> <li>You must assess the fate and impact of the substances emitted to water and sewer following the Environment Agency's <u>risk assessment guidance</u>.</li> </ol>	<ol> <li>Current water discharge consent in place. Will be reviewed in line with commissioning.</li> <li>As above.</li> </ol>	

ommissioning complete full noise impact nent.	February 2024

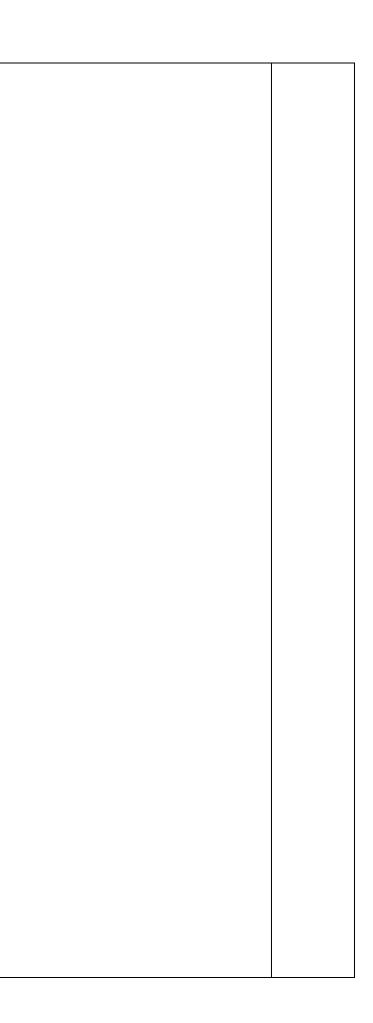
#### BAT Analysis of Ecobat Solutions Operations

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	3. Discharges to water or sewer must comply with the conditions of an environmental permit or trade	3. Discharge consent in place.	
	effluent consent. Relevant sources of waste water include (but are not limited to):		
	<ul> <li>water or condensate collected from treatment processes</li> </ul>		
	vehicle washing		
	vehicle oil and fuel leaks		
	washing of containers		
	<ul> <li>spills and leaks in waste storage areas</li> </ul>		
	<ul> <li>loading and unloading areas</li> </ul>		
	uncovered storage areas		
	4. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal,	4. PH adjustment and removal solids	
	you must use an appropriate combination of treatment techniques, including one or more of the		
	following:		
	<ul> <li>preliminary or primary treatment – for example, physical separation</li> </ul>		
	<ul> <li>physico-chemical treatment – for example, adsorption, precipitation, chemical oxidation or</li> </ul>		
	reduction		
	<ul> <li>solids removal – for example, coagulation, sedimentation, filtration or flotation</li> </ul>		
Fugitive emissions to	1. You must use appropriate measures to control potential fugitive emissions and make sure that they do	1. Included in risk assessment RA47.	
land and water	not cause pollution. See the guidance on emissions to water and leaks from containers.		
	2. You must have the following in all operational areas of the facility:	2. All operational areas in the facility are on an	
	an impermeable surface	impermeable surface, spill containment kerbs,	
	spill containment kerbs	sealed construction joints, sealed drainage	
	sealed construction joints	system.	
	a sealed drainage system	,	
	3. The sealed drainage system must contain all surface water run off and channel it to a blind sump	3. Effluent Treatment Plant on site and all water	
	unless you can lawfully discharge it.	captured	
	4. You must collect and treat separately each water stream generated at the facility. For example, surface	4. All water that falls on to operational site and	4. Investigate a
	run-off water or process water. You must base separation on pollutant content and the treatment	process water will be processed together	
	required. In particular, you must make sure you segregate uncontaminated water streams from those	currently. Surface water on non-operational	
	that require treatment.	areas separate.	
	5. You must use suitable drainage infrastructure to collect surface drainage from areas of the facility	5. Drainage survey completed on a regular basis,	
	where you store, handle and treat waste. Drainage must be effective to make sure waste is not stored or	storage tanks in place if water needs to be held.	
	treated in standing water.		
	6. Depending on the pollutant content, you must either:	6. Dependent on content the water will be	
	<ul> <li>recirculate what you have collected</li> </ul>	recirculated where possible or discharged	
	<ul> <li>discharge it in accordance with an environmental permit or trade discharge consent</li> </ul>	following discharge consent.	
	<ul> <li>send it for further treatment</li> </ul>		
	7. You must have design and maintenance provisions in place to detect and repair leaks. These must	7. Leak inspection and drainage survey	
	include regularly monitoring, inspecting and repairing equipment and minimising underground	completed on a regularly basis. Added in to PPM	
	equipment and infrastructure.		
	8. You should provide appropriate buffer storage capacity at your facility to store waste waters, taking	8. This is included in the site Fire Prevention	
	into account:	Plan to ensure correct capacity.	
	potential abnormal operating scenarios and incidents		
	<ul> <li>the nature of any polluting substances and their impact on the downstream waste water</li> </ul>		
	treatment plant and receiving environment		
	9. You must have appropriate measures in place to monitor, treat and reuse the water held in the buffer	9. Calibrated and regularly serviced ETP.	
	storage before discharging.		
	10. You must take measures to prevent emissions from washing and cleaning activities, including:	10. Liquid effluent and wash waters all within	
	<ul> <li>directing liquid effluent and wash waters to foul sewer or collecting them in a sealed system</li> </ul>	operational sealed drainage. Non-corrosive	
	for off-site disposal – you must not discharge them to surface or storm drains	wash used for container washing. Bunding on	
	<ul> <li>where possible, using biodegradable and non-corrosive washing and cleaning products</li> </ul>		
L	• where possible, using biodegradable and non-corrosive washing and cleaning products	1	

vestigate and gain clarification.	

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<ul> <li>storing all detergents, enuisifies and other cleaning agents in suitable bundle or containment facilities, within a lock dot storage area, or in a building away from systeme that drain to the surface water system.</li> <li>In Where relevant, you must knew measures to prevent pollution from the on-site storage, handling and storage trade and pollar dot of the surface water system.</li> <li>Where relevant, you must knew measures to prevent pollution for twinness.</li> <li>Splitreponse pain of information for twinness.</li> <li>You must pain and minimenes (paint), storage tradealistics for twinness.</li> <li>You must paint and storage tradealistics water system and subtrates surface paint of the sources of the surface sure void and with splitges immediately.</li> <li>You must make sure juiliges at contening davids, channess, guiley, water where a splitge could occur and make sure void splitge response plan indude information about how to recover, handle and correctly dispose of waster provided from splitge.</li> <li>For subsurface structures, you must the auradous subtance are involved, see the first of hazardines and donorways on site.</li> <li>For subsurface structures, you must index sure they are detected quickly if they do occur, particularly where hazardous subtances are involved, see the first of hazardous subtance are involved, see the first of hazardous subtance are involved, see the first of hazardous subtances are involved, see the first of hazardous in a storage response to minimaline leakage for pipes and mainter subtance programme for all subtanface structures, for example, pressure tests, leak tests, material hickness chacks or CCTV</li> <li>For surfacing and maintenance programme for impermeable surface and included in site survey.</li> <li>For surfacing and maintenance programme for impermeable surfaces and coordinates in the surface structures.</li> <li>Now must have an inspectin and maintenance programme for intermeable surfaces and correc</li></ul>	1viay 2023 – 0	pualeu september 2025
<ul> <li>wrater drains</li> <li>preparing cleaning or disinfection solutions in contained areas of the site and never in areas that drain to the surface wrater system</li> <li>11. Veter crelevant you must know measures to prevent pollution from the on-site storage, handling and use of oils and fuels. See the guidance on oil storage regulations for business.</li> <li>Spill response plan</li> <li>12. You must brookers and associater transing must make sure you add with spillages immediately.</li> <li>14. You must know how to use the materials, and or drain must for use when required.</li> <li>Designing and maintaining surfacing and subsurface structures</li> <li>15. You must show how to use the materials, and or drain must for use when required.</li> <li>Designing and maintaining surfacing and subsurface structures (or currently dispose of waste produced from a spillage.</li> <li>17. For subsrich all subsurface structures, you must:</li> <li>establish and record the routing of all its drains and subsurface pipework.</li> <li>eigening systems to minimise leakages from pips and make sure the <u>storage</u> vasels.</li> <li>establish and record the routing of all side drains and subsurface pipework.</li> <li>eigening you must design appropriate surfaces are involved, see the <u>stor</u> of hazardoos substances.</li> <li>surface thicknesses</li> <li>surface thorknesses</li> <li>surface to chemical atack.</li> <li>inspection and maintenance programme for impermeable surfaces and containment for drainal stor to use spillage could be abundle with the storage wasels.</li> <li>19. This is included in site survey.</li> <li>20. You must base and maintenance programme for impermeable surfaces and containment for drainal storage structures, for example, pressure tests, leak tests, material thickness check or CCTV</li> <li>21. Surpartice the land on drain test for use or all subsurface structures, for example, pressure tests, leak tests, material thickness checks or construction materials</li> <li>how no construction materials</li> <li></li></ul>		site for all chemicals additional to site sealed
<ul> <li>preparing cleaning or disinfection solutions in contained areas of the site and never in areas third in to the surve water system</li> <li>11. Where relevant, you must have measures to prevent pollution for the on-site storage, handling and use of olds and fuels. See the guidations for business.</li> <li>Spill response plan</li> <li>22. You must produce and inplement a spillage response plan and train staff to follow it and test it.</li> <li>13. You procedures and associated training must make sure you deal with spillages immediately.</li> <li>14. You must kee spill kits al classine spillage subcompare conduction make sure relevant staff furow how to use them. Make sure kits are replenished after use.</li> <li>15. You must trained spillage response plan includes information about how to recover, handle and maintaining surfacing and subsurface structures and unmake ground. You must make sure you gailage response plan includes information about how to recover, handle and correctly disposed water produced from a spillage.</li> <li>17. For subsurface structures, you must:         <ul> <li>estabilis and record the routing of al site drains and subsurface pipework.</li> <li>identify all sub-surface surge wasels</li> <li>estabilis and record inmismice leakages from pipes and make sure they are detected quickly if they do occur, particularly where harardous subsurface structures, for example, pressure tests, leak tests, material thichness checks or CCTV</li> </ul> <li>18. For subsurface structures in the surge of an about and reinface first incluses of the surger stems for all subsurface structures, for example, pressure tests, leak tests, material thichness checks or CCTV</li> <li>e. Tarkis and banding</li> <li>You must have an inspection and maintenance programme for impermeable surfaces and cancides in the survey.</li> <li>Portwest the and maintenance programme for impermeable surfaces and cancides in the survey in s</li></li></ul>		bunding.
the drain to the surface water system 1. Where relevant, you must have measures to grewnt pollution for thusiness. Split response plan 1.2. You must produce and implement a splilage response plan and train staff to follow it and test it. 1.3. You produce and associated training must make sure you doal with splilage sime mediately. 1.4. You must face splil kits at locations close to areas where a splilage could occur and make sure relevant staff know how to use them. Make sure is used and after use. 1.5. You must those how to use the mediately. 1.4. You must keep splil kits at locations close to areas where a splilage could occur and make sure relevant staff know how to use them. Make sure is used after use. 1.5. You must stop splilage response plan includes information about how to recover, handle 1.6. You must make sure you splilage response plan includes information about how to recover, handle 1.6. You must make sure you splilage response plan gave seels 1.7. For substrate structures, you must: 1.6. reduction approximate structures, you must: 1.6. reduction approximate surg and stop splilage. 1.7. For substrate, you must: 1.6. reduction approximate surg and stop substrates are involved, see the list of hazaroou substances 1.6. provide secondary containment or lakage detection for sub-surface pipework, sumps and 1.6. reduction approximate surfacing and containment or drainage facilities for all 1.6. reduction capacities 1.6. surface thichnesses 1.5. you must that an inspection and maintenance programme for all subsurface structures, for 1.6. surface thichnesses 1.5. you must have an inspection and maintenance programme for all subsurface structures, for 1.5. you must have an inspection and maintenance programme for impermeable surfaces and 1.6. reduction capacities 1.7. You must have an inspection and maintenance programme for impermeable surfaces and 1.7. You must have an inspection and maintenance programme for impermeable surfaces and 1.7. You must have an inspection and maint		
<ul> <li>11. Where relevant, you must have measures to prevent pollution for the on-site storage, handling and use of olis and fuels. See the guidance on all storage regulations for business.</li> <li>Spill response plan</li> <li>12. You must need associated training must males sure you deal with spillages immediately.</li> <li>14. You must kee spill his at locations close to arraw shore a spillage could occur and make sure its are reglemanted after use.</li> <li>15. You must take sourable absorbent materials, sand or drain must for use when required.</li> <li>Designing and maintaining stratforg and subsurface structures and manitable stratforg and subsurface structures in a maintaining stratforg and subsurface structures and an maintaining stratforg and subsurface structures.</li> <li>16. Four must have available absorbent materials, sand or drain must for use when required.</li> <li>Designing and maintaining stratforg and subsurface structures.</li> <li>16. Nou must make sure your spillage response plan includes information about how to recover, handle and or orcitly dispose of waster produced from a spillage.</li> <li>17. For subsurface structures you must.</li> <li>extabilis and record and maintenance programme for all subsurface pipework.</li> <li>identify all sub surface sumps and storage vessals.</li> <li>extabilis and record produced from a spillage.</li> <li>provide sccondary containment or leakage detection for sub-surface pipework, sumps and storage vessals.</li> <li>surface thicknessas</li> <li>surface thicknessas</li> <li>surface thicknessas</li> <li>surface thicknessas</li> <li>surgetion and maintenance programme for all subsurface structures for example, pressure tasts, leak test, material thickness checks or CCTV</li> <li>18. For surfacing, you must design appropriate surfacing and containment or drainage facilities for all or contained materials.</li> <li>construction materials</li> <li>permetability</li> <li>resistability</li> <li>resistability</li> <li>task and maintenance programme for imper</li></ul>		
<ul> <li>use of oils and fuels. See the <u>guidance on oil storage regulations for business</u>.</li> <li>Spill reports pain</li> <li>12. You must produce and implement a spillage response plan and train staft to follow it and test it.</li> <li>13. You procedures and associated training must make sure void ad with spillage immediately.</li> <li>14. You must stop spillages from entering drains, channels, guilles, watercourses and ummade ground.</li> <li>You must mise waniable absorbent materials and or drain masts for use when required.</li> <li>Deigning and maintaining surfacing and subsurface structures</li> <li>15. You must make sure void spillage roduced from a spillage.</li> <li>17. For subsurface structures, you must: <ul> <li>eatabilish and record the routing of all site drains and subsurface pipework.</li> <li>identify all sub-surface surges and make sure they are detected quickly if they do occur, particularly where hazardous substances are involved, see the list of hazardous substances are involved, see the list of hazardous substances is extended and reviewed.</li> <li>Add in to PPM</li> </ul> </li> <li>18. Completed and included in site survey.</li> <li>19. Thus is included in site survey.</li> <li>19. Four sursaria, you must design appropriate surfacing and containment or drainage facilities for all operability.</li> <li>collection capacities</li> <li>strength and reinforcement</li> <li>fails</li> <li>construction materials</li> <li>pervolumentaineance programme for impermeable surfaces and containment for lists.</li> <li>Tabl and bunding</li> <li>20. You must have an inspection and maintenance programme for impermeable surfaces and containment for lists.</li> <li>Tabl and bunding</li> <li>20. You must have an inspection and maintenance programme for impermeable surfaces and containment for lists.</li> <li>Tabl and bunding</li> <li>20. You must have an inspection and maintenance programme for impermeable surfaces and containment for lists.</li> <li>be impermeabile and resistant to the stored materials<td></td><td></td></li></ul>		
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<ul> <li>surface thicknesses</li> <li>strength and reinforcement</li> <li>falls</li> <li>construction materials</li> <li>permeability</li> <li>resistance to chemical attack</li> <li>inspection and maintenance programme for impermeable surfaces and</li> <li>containment facilities.</li> <li>Tanks and bunding</li> <li>20. You must have an inspection and maintenance programme for impermeable surfaces and</li> <li>containment facilities.</li> <li>Tanks and bunding</li> <li>20. You must bund all above-ground tanks containing liquids whose spillage could be harmful to the environment. Bunds must:         <ul> <li>be impermeable and resistant to the stored materials</li> <li>have no outlet (that is, no drains or taps) and drain to a blind collection point</li> <li>have no outlet (that is, no drains or taps) and trains or 25% of the total tankage, whichever is largest)</li> </ul> </li> <li>be designed to catch leaks from tanks or 25% of the total tankage, whichever is the larger</li> <li>have regular visual inspections – any contents must be pumped out or otherwise removed under manual control after checking for contamination</li> </ul>		
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under manual control after checking for contamination		
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<ul> <li>be fitted with a high-level probe and an alarm (as appropriate) if not frequently inspected</li> </ul>	-	
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#### BAT Analysis of Ecobat Solutions Operations

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Emissions to air	<ul> <li>have tanker connection points within the bund (where possible), otherwise provide adequate containment.</li> <li>have programmed engineering inspections – normally visual but extending to water testing if structural integrity is in doubt.</li> <li>be emptied of rainwater regularly to maintain their containment capacity.</li> <li>You can find further guidance in <u>Construction Industry Research and Information Association (CIRIA)</u> <u>Containment systems for the prevention of pollution (C736F)</u></li> <li>Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to air, such as the:         <ul> <li>average values and variability of flow and temperature</li> <li>average concentration and load values of relevant substances and their variability</li> <li>flammability, lower and higher explosive limits, and reactivity</li> <li>presence of other substances that may affect the waste gas treatment system or plant safety – for example, oxygen, nitrogen, water vapour, dust.</li> </ul> </li> <li>Monitoring locations must meet MCERTS standards. Monitoring must use MCERTS qualified accredited</li> </ul>	<ol> <li>will be added to emissions inventory as detailed above once implemented.</li> <li>Dependant on the above, this will be</li> </ol>	Add to the due date F
	methods and be done by MCERTs certified staff. You can find further guidance in the Environment	completed.	
	Agency's M1 – Guidance on sampling requirements for monitoring stack emissions		
Emissions limits and monitoring requirements	<ol> <li>You must apply the following emission limits and monitoring requirements for point source emissions to air.</li> <li>You must comply with any other emission limits or monitoring requirements set in your environmental permit. There may be situations where we set lower emission limits for the following substances listed.</li> </ol>	<ol> <li>Agreed</li> <li>Agreed. Permit compliance internal audit in place.</li> </ol>	
	<ul> <li>Dust emissions</li> <li>3. You must make sure dust monitoring is done every 6 months using method BS EN 13284-1.</li> <li>The emission limits are as follows. When using: <ul> <li>fabric filters – 5mg/m3</li> </ul> </li> </ul>	3. On emissions inventory will be added	Add to the due date F
	<ul> <li>other abatement techniques – a higher emission limit of 10mg/m3 may be appropriate.</li> <li>4. You must report results as the average value of 3 consecutive measurements of at least 30 minutes each. The 3 consecutive measurements must be representative of the dust and particulate emissions from the operations at the site.</li> <li>Other point source emissions to air</li> </ul>	4. Initial testing completed on small scale shredder (IC2), this will be completed again following commissioning	Emissions testing
	5. You must apply the following emission limits and monitoring requirements for point source emissions to air where they are relevant, based on your facility's emissions inventory and environmental risk	5. As above	
	assessment. 6. You must also comply with any other emission limits or monitoring requirements set in your environmental permit. BFRs You should:	6. Agreed.	
	<ul> <li>do annual monitoring</li> <li>report results as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> </ul>		
	<ul> <li>Dioxin-like polychlorinated biphenyls</li> <li>Where these are identified in your inventory of point source emissions to air you should:         <ul> <li>do annual monitoring following standard EN1948-4</li> <li>report results from one sampling period of at least 6-8 hours</li> </ul> </li> <li>Metals and metalloids except mercury</li> <li>Where these are identified in your inventory of point source emissions to air you should:</li> </ul>		
	<ul> <li>do annual monitoring following standard EN14385</li> <li>report results as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> </ul>		

e above (Point source emissions to air) February 2024	
e above (Point source emissions to air) February 2024	
s testing completed following emissions	April 2024

#### BAT Analysis of Ecobat Solutions Operations

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	<ul> <li>Polychlorinated dibenzo-p-dioxin/furan(s)</li> <li>Where these are identified in your inventory of point source emissions to air you should:         <ul> <li>do annual monitoring following standard EN1948-1 Parts1, 2 and 3</li> <li>report results from one sampling period of at least 6-8 hours</li> </ul> </li> <li>Total VOCs         <ul> <li>You should:                 <ul> <li>do 6-monthly monitoring following standard BS EN 12619</li> <li>report results as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li> <li>We are approximately as the average value of 3 consecutive representative measurements of at least 30 minutes each</li></ul></li></ul></li></ul>		
Emissions to water or sewer	<ul> <li>30 minutes each</li> <li>Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to water or sewer, such as:         <ul> <li>average values and variability of flow, pH, temperature, and conductivity</li> <li>average concentration and load values of relevant substances and their variability – for example, chemical oxygen demand (COD) and total organic carbon (TOC), nitrogen species, phosphorus, metals, priority substances or micro pollutants</li> <li>data on bio-eliminability – for example, biological oxygen demand (BOD), BOD to COD ratio, Zahn-Wellens test, biological inhibition potential, for example, inhibition of activated sludge</li> </ul> </li> <li>For relevant emissions to water or sever identified by the emissions inventory, you must monitor key process parameters (for example, waste water flow, pH, temperature, conductivity, or BOD) at key locations. For example, these could be at one of the following, the:         <ul> <li>inlet or outlet (or both) of the pre-treatment</li> <li>inlet or outlet (or both) of the pre-treatment</li> <li>point where the emission leaves the facility boundary</li> </ul> </li> <li>You must comply with any other emission limits or monitoring requirements set in your environmental permit. We may set lower emission limits for the parameters that follow.</li> <li>In addition to any other parameters specified by your permit, you must monitor the following emissions limit for HO is 10mg/l whether direct or indirect (to water body or to sewer)</li> <li>if you discharge directly to a water body, you must monitor TOC or COD – TOC is the preferred monitoring parameter</li> </ul> <li>Tooc</li> <li>You must comply with the following;         <ul> <li>monthly monitoring</li> <li>an emission limit of 180mg/l</li> </ul> </li> <li>You mu</li>	1. Current ETP in place with plan to upgraded software on it to include the items listed.         2. To be investigated         3. Agreed         4. Agreed.	1. Quote ta
	<ul> <li>the emission limit is 60mg/l</li> <li>5. If your waste water emissions inventory identified the following parameters are relevant, then you must monitor for them. You should monitor them monthly. There are various standards available for these parameters (for example, EN ISO 11885, EN ISO 17294-2, EN ISO 15586).</li> <li>These emission limits apply whether the discharge is to a water body or to the sewer: <ul> <li>arsenic (As) – emission limit 0.05mg/l</li> </ul> </li> </ul>		

to upgrade current ETP	June 2023
identified during the emissions inventory	

### BAT Analysis of Ecobat Solutions Operations

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	<ul> <li>cadmium (Cd) – emission limit 0.05mg/l</li> <li>chromium (Cr) – emission limit 0.15mg/l</li> <li>copper (Cu) – emission limit 0.5mg/l</li> <li>nickel (Ni) – emission limit 0.5mg/l</li> <li>lead (Pb) – emission limit 0.3mg/l</li> <li>zinc (Zn) – emission limit 2mg/l</li> <li>mercury (Hg) – emission limit is 5ug/l (SORT microgram) and the relevant standards are EN ISO 17852, EN ISO 12846)</li> <li>Perfluorooctanoic acid and perfluorooctanesulphonic acid</li> <li>You should monitor 6-monthly. There is no EN standard available for the monitoring and no emission limit has been set.</li> </ul>			
Energy Efficiency	<ol> <li>You must create and implement an energy efficiency plan at your facility. This must:         <ul> <li>define and calculate the specific energy consumption of the activity (or activities) you carry out and the waste streams you treat</li> <li>set annual key performance indicators – for example, specific energy consumption (expressed in kWh/tonne of waste processed)</li> <li>plan regular improvement targets and related actions</li> </ul> </li> <li>You must regularly review and update your energy efficiency plan as part of your facility's management system.</li> <li>You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment processes.</li> <li>You must regularly review and update your energy balance record as part of your facility's management system, alongside the energy efficiency plan.</li> <li>You must have operating, maintenance and housekeeping measures in place in relevant areas, for example, for:         <ul> <li>air conditioning, process refrigeration and cooling systems (leaks, seals, temperature control, evaporator or condenser maintenance)</li> <li>operating motors and drives</li> <li>compressed gas systems (leaks, traps, insulation)</li> <li>space heating and hot water systems</li> <li>lubrication to avoid high friction losses</li> <li>boiler operation and maintenance, for example, optimising excess air</li> <li>other maintenance relevant to the activities within the facility</li> </ul> </li> <li>Keeping the shredder infeed stable involve as the activities. These should include, for example:</li></ol>	<ol> <li>To be implemented</li> <li>Will be reviewed inline with management system on site.</li> <li>Will be implement on commissioning of plant</li> <li>Will be reviewed inline with management system on site.</li> <li>Contained with the PPM schedule for site.</li> <li>Contained with the ppm schedule for site.</li> </ol>	<ul> <li>As the plant is currently being manufactured and final layouts being agreed the current specific energy consumption of the activity being applied for is unknown. An estimated plan can be implemented however this will be inaccurate. When final plans are agreed and prior to commissioning of the plant, this will be implemented in line with our sustainability report, identifying KPI's and reduction targets and be in line with BAT requirements.</li> <li>6. The current process is controlled by motor control systems, VFDs (variable frequency drives) and instrumentation to regulate the power efficiency of the machines. Inert gas is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant is used in the context to a followed and the plant the plant is used in the context to a followed and the plant the pl</li></ul>	April 2024
	<ul> <li>insulation</li> <li>containment methods (such as seals and self-closing doors)</li> <li>avoiding unnecessary discharge of heated water or air (for example, by fitting simple control systems such as timers and sensors)</li> <li>7. You should implement additional energy efficiency measures at the facility as appropriate, following our guidance Energy efficiency standards for industrial plants to get environmental permits</li> </ul>	7. Following monitoring this will be reviewed, and any additional controls implemented.	<ul> <li>process to safely operate the plant that is monitored and controlled by instrumentation to regulate the quantity of inert gas needed within operating safety parameters.</li> <li>7. When final plans approved a full assessment will be completed with potential items implemented in line with BAT and assessed by the EA prior to commissioning.</li> </ul>	

### ecobat solutions

### BAT Analysis of Ecobat Solutions Operations

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Raw materials efficiency	<ol> <li>You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact.</li> <li>You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products.</li> <li>You must justify the continued use of any substance for which there is a less hazardous alternative.</li> <li>You must have quality assurance procedures in place to control the content of raw materials.</li> </ol>	<ol> <li>Listed in site inventory &amp; FPP</li> <li>Raw materials used for this process are electricity and polymer. Initial trail completed in Germany for polymer WT-Floc 814 CL that did not complete the task as necessary, and solids remained within the water. Therefore, other substances are currently being reviewed to be used, within this review will include assessment of less hazardous or polluting chemicals used.</li> </ol>	2. The othe reviewed to assessment used. Prior BAT assess techniques production
Water use efficiency	<ol> <li>You must make sure you optimise water consumption to:         <ul> <li>reduce the volume of waste water generated</li> <li>prevent or, where that is not practicable, reduce emissions to soil and water</li> </ul> </li> <li>You must take these measures:         <ul> <li>implement a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances)</li> <li>optimise the use of washing water (for example, dry cleaning instead of hosing down, using trigger control on all washing equipment)</li> <li>recirculate and reuse water streams within the plant or facility, if necessary after treatment</li> <li>reduce the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids) where relevant</li> <li>recuse in a closed circuit water injected into the mill</li> <li>collect run off water and damping water for dust suppression</li> </ul> </li> <li>You must regularly review your water use (a water efficiency audit), at least every 4 years.</li> <li>You must also:         <ul> <li>produce flow diagrams and water mass balances for your activities</li> <li>establish water efficiency objectives and identify constraints on reducing water use beyond a certain level (usually this will be site specific)</li> <li>identify the opportunities for maximising reuse and minimising use of water</li> <li>have a timetabled improvement plan for implementing additional water reduction measures</li> </ul> </li> <li>To reduce water use and associated emissions to water, you should apply these general principles in sequence:             <ul> <li>use water efficient techniques at source where possible</li> <li>reuse water within the process, by treating it first if necessary – if not practicable, use it in another part of the processo</li></ul></li></ol>	<ol> <li>Recirculate the water where possible. Following commissioning usage will be measured and monitoring completed. Water saving plan with be established where required.</li> <li>Agreed,</li> <li>Will be implemented.</li> <li>Control measures implemented following general principles</li> <li>Will be assessed during step 1</li> <li>Will be assessed during step 1-3</li> <li>Agreed.</li> <li>Will be added to the above assessment</li> <li>Fresh water consumption will be recorded</li> </ol>	1. Monitor

ther substances are currently being I to be used, within this review will include ent of less hazardous or polluting chemicals or to the plant becoming operational this ssment will be updated in line with BAT es and approved by the EA prior to on occurring.	2. April 2024
or and record wastewater usage.	December 2023
ant is currently being manufactured and buts being agreed the current specific w consumption / use of the activity being or is unknown. An estimated plan can be nted however this will be inaccurate. hal plans are agreed and prior to ioning of the plant, this will be nted in line with our sustainability policy within our sustainability report, ng efficiency objectives and constraints on water usage and be in line with BAT hents.	December 2023
	December 2023

#### BAT Analysis of Ecobat Solutions Operations

Waste minimisation, recover and disposal	<ol> <li>You must have and implement a residues management plan that:         <ul> <li>minimises the generation of residues arising from waste treatment</li> <li>optimises the reuse, regeneration, recycling or energy recovery of residues, including packaging</li> <li>makes sure you properly dispose of residues where recovery is technically or economically impractical</li> </ul> </li> <li>Where you must dispose of waste, you must do a detailed assessment identifying the best environmental options for waste disposal.</li> <li>You must regularly review your options for recovering and disposing of waste produced at the facility. You must do this as part of the management system to make sure you are still using the best environmental options and promoting the recovery of waste.</li> </ol>	<ol> <li>Residues management plan to be completed. Residues from the treatment will go back through the process for further treatment.</li> <li>the waste hierarchy will be followed at all times.</li> <li>As above, will be followed and reviewed on a regular basis.</li> </ol>
Management System	<ul> <li>management commitment, including from senior managers <ul> <li>an environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance</li> <li>You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment.</li> <li>You implement environmental performance procedures, paying particular attention to: <ul> <li>staff structure and relevant responsibilities</li> <li>staff recruitment, training, awareness and competence</li> <li>communication (for example, of performance measures and targets)</li> <li>employee involvement</li> <li>documentation</li> <li>effective process control</li> <li>maintenance programmes</li> <li>the management of change (including legislative changes and waste classification changes)</li> <li>emergency preparedness and response</li> <li>making sure you comply with environmental legislation</li> </ul> </li> <li>You check environmental performance and take corrective action paying particular attention to: <ul> <li>monitoring and measurement</li> <li>learning from incidents, near misses and mistakes, including those of other organisations</li> <li>records maintenance</li> <li>independent (where practicable) internal or external auditing of the management system to confirm it has been properly implemented and maintained</li> </ul> </li> <li>Senior managers review the management system to check it is still suitable, adequate and effective. <ul> <li>You consider the risks a changing climate poses to your operations. You have appropriate plans in place </li></ul> </li> <li>to assess and manage future risks.</li> <li>You comside the risks a changing climate poses to your operations. You have appropriate plans in place </li> <li>to assess and manage future risks.</li> <li>You compare your site's performance against relevant sector guidance and standards on a regular basis, known as sectoral benchmarking.</li> <li>You have and mainta</li></ul></li></ul>	ISO 14001 approved including extension of scope.

#### BAT Analysis of Ecobat Solutions Operations

Staff Competence	<ol> <li>Your site must be operated at all times by an adequate number of staff with <u>appropriate qualifications</u> and <u>competence</u>.</li> <li>The design, installation and maintenance of infrastructure, plant and equipment must be carried out by competent people.</li> <li>You must have appropriately qualified managers for your waste activity who are either:         <ul> <li>qualified under a <u>technical competence scheme</u></li> <li>operating under a government approved technical competence scheme</li> </ul> </li> <li>Non-supervisory staff must be reliable and technically skilled. Their skills may be based on experience and relevant training.</li> </ol>	<ol> <li>At least 3 COTC holders. If shift patterns change or extends than 12 hours days additional COTC holders will be required.</li> <li>All contractors are monitored and audited.</li> <li>As in point 1</li> <li>Training matrix in place.</li> </ol>	
Accident Management Plan	<ul> <li>1. As part of your management system you must have a <u>plan for dealing with any incidents or</u> <u>accidents</u> that could result in pollution.</li> <li>2. The accident management plan must identify and assess the risks the facility poses to human health and the environment.</li> <li>Areas to consider may include: <ul> <li>waste types and the risks that they pose</li> <li>robust waste acceptance procedures (see section 3) to avoid receiving unwanted items, such as gas cylinders, undepolluted end-of-life vehicles (ELVs) and radioactive items</li> <li>failure of abatement system</li> <li>failure of plant and equipment (for example over-pressure of vessels and pipework, blocked drains)</li> <li>failure of containment (for example, bund failure, or drainage sumps overfilling)</li> <li>damaged Li-ion batteries</li> <li>failure to contain firefighting water</li> <li>making the wrong connections in drains or other systems</li> <li>checking the composition of an effluent before emission</li> <li>vandalism and arson</li> <li>extreme weather conditions for example flooding or very high winds</li> </ul> </li> </ul>	<ol> <li>Emergency plan in place including pollution control.</li> <li>Update to emergency plan to be implemented</li> </ol>	2. Update
	<ul> <li>3. You must assess the risk of accidents and their possible consequences. Risk is the combination of the likelihood that a hazard will occur and the severity of the impact resulting from that hazard. Having identified the hazards, you can assess the risks by addressing 6 questions: <ul> <li>how likely is it that the accident will happen?</li> <li>what may be emitted and how much?</li> <li>where will the emission go – what are the pathways and receptors?</li> <li>what are the consequences?</li> <li>what is the overall significance of the risk?</li> </ul> </li> <li>4. In particular, you do to prevent or reduce the risk?</li> <li>arson or vandalism</li> <li>self-combustion, for example within the finer fractions of the shredder residue or within swarf piles</li> <li>plant or equipment failure and electrical faults</li> <li>naked lights and discarded smoking materials</li> <li>hot works (for example welding or cutting), industrial heaters and hot exhausts</li> <li>reactions between incompatible materials</li> <li>neighbouring site activities</li> <li>sparks from loading buckets</li> <li>hot loads deposited at the site</li> <li>damaged Li-ion batteries in waste electronic and electrical equipment (WEEE) and light iron, heavy melting steel piles and waste from household waste recycling centres</li> </ul>	<ul><li>3. This will be included in the Haz Op as identified in the points above.</li><li>4. As above</li></ul>	

ate emergency plan	2. December 2023

#### BAT Analysis of Ecobat Solutions Operations

	<ul> <li>batteries left connected in ELVs which can short circuit</li> </ul>		
	<ul> <li>batteries (storage, processing and handling)</li> </ul>		
	ELV depollution activities (if carried out on your site)		
	deflagrations within the shredder and pre-shredders		
	This list is not exhaustive and you must have a fire prevention plan that identifies the risks at your site		
	and meets the requirements of our fire prevention plan guidance.		
	The depth and type of accident risk assessment you do will depend on the characteristics of the plant and		
	its location. The main factors to take into account are the:		
	<ul> <li>scale and nature of the accident hazard presented by the plant and its activities</li> </ul>		
	<ul> <li>risks to areas of population and the environment (the receptors)</li> <li>nature of the plant and complexity of the activities and how difficult it is to deside and justified</li> </ul>		
	<ul> <li>nature of the plant and complexity of the activities and how difficult it is to decide and justify</li> </ul>		
	adequate risk control techniques		
	5. Through your accident management plan, you must also identify the roles and responsibilities of the		
	staff involved in managing accidents. You must provide them with clear guidance on how to manage each	5. Will be updated following Haz Op	5. Update as
	accident scenario.		
	6. You must appoint one facility employee as an emergency co-ordinator who will take lead responsibility		
	for implementing the plan. You must train your employees so they can perform their duties effectively	6. As above point 2/4	
	and safely and know how to respond to an emergency.		
	7. You must also:		
	<ul> <li>establish how you will communicate with relevant authorities, emergency services and</li> </ul>	7. As above points	
	neighbours (as appropriate) both before, during and after an accident		
	<ul> <li>have appropriate emergency procedures, including for safe plant shutdown and site</li> </ul>		
	evacuation		
	have post-accident procedures that include assessing the harm that may have been caused by		
	an accident and the remediation actions you will take		
	<ul> <li>test the plan by carrying out emergency drills and exercises</li> </ul>		
Accident Prevention	You must take the following measures, where appropriate, to prevent events that may lead to an		
Measures	accident.		
	Waste acceptance and pre acceptance procedures		
	1. You must have clear and detailed procedures for pre-acceptance and acceptance of waste and for	1.As detailed in step 1. Procedures in place and	
	rejected and quarantined wastes.	adequately monitored.	
	2. These should be produced and maintained as set out in the waste pre-acceptance, acceptance and	2. Agreed.	
	tracking appropriate measures section.		
	Segregating waste		
	3. You must keep apart incompatible wastes. Examples could include but are not limited to:	3. Detailed above in acceptance procedures, all	
	<ul> <li>storing lead acid batteries separately to nickel metal hydride batteries</li> <li>segregating flammable gas guilders in cages away from everyon guilders</li> </ul>	in line.	
	<ul> <li>segregating flammable gas cylinders in cages away from oxygen cylinders</li> </ul>		
	Preventing accidental emissions		
	4. You must make sure you contain the following (where appropriate) or route to the effluent system	4. All operational site sealed drainage leading to	
	(where necessary):	ETP	
	process waters		
	site drainage waters		
	emergency firefighting water		
	oil or chemical contaminated waters		
	<ul><li>oil or chemical contaminated waters</li><li>spillages of oils and chemicals</li></ul>		
	<ul> <li>oil or chemical contaminated waters</li> <li>spillages of oils and chemicals</li> <li>5. You must be able to contain surges and storm water flows. You must provide enough buffer storage</li> </ul>	5. included in FPP, weighbridge, storage tanks	
	<ul> <li>oil or chemical contaminated waters</li> <li>spillages of oils and chemicals</li> <li>5. You must be able to contain surges and storm water flows. You must provide enough buffer storage capacity to make sure you can achieve this. You can define this capacity using a risk-based approach, for</li> </ul>	5. included in FPP, weighbridge, storage tanks available to flood where needed.	
	<ul> <li>oil or chemical contaminated waters</li> <li>spillages of oils and chemicals</li> <li>5. You must be able to contain surges and storm water flows. You must provide enough buffer storage</li> </ul>		
	<ul> <li>oil or chemical contaminated waters</li> <li>spillages of oils and chemicals</li> <li>5. You must be able to contain surges and storm water flows. You must provide enough buffer storage capacity to make sure you can achieve this. You can define this capacity using a risk-based approach, for</li> </ul>		

te as point 2	5. December 2023

#### BAT Analysis of Ecobat Solutions Operations May 2023 – Updated September 2023

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sensitivity of the receiving environment		
6. You can only discharge waste water from this buffer storage after you have taken appropriate	6. Discharge point within ETP V notch only.	
measures, to control, treat or reuse the water.		
7. You must have spill contingency procedures to minimise the risk of an accidental emission of raw	7. Spill procedures in place as noted during	
materials, products and waste materials, and to prevent their entry into water.	previous section.	
8. Your emergency firefighting water collection system must take account of additional firefighting water		
flows or firefighting foams. You may need emergency storage lagoons to prevent contaminated	8. Included in FPP	
firefighting water reaching a receiving water body. This should be considered as part of your fire		
prevention plan.		
9. You must consider and, if appropriate, plan for the possibility that you need to contain or abate accidental emissions from:	0. Will be added in to emissions inventory and	
overflows	9. Will be added in to emissions inventory and emergency plan	
<ul> <li>overnows</li> <li>vents</li> </ul>		
<ul> <li>safety relief valves</li> </ul>		
<ul> <li>bursting discs</li> </ul>		
If this is not advisable on safety grounds, you must focus on reducing the probability of the emission.		
Security measures		
10. You must have security measures in place to prevent:		
entry by vandals and intruders	10. Full site monitored 24hourly, fencing, CCTV,	
<ul> <li>damage to equipment</li> </ul>	intruder detection, locked site.	
<ul> <li>theft</li> </ul>		
• fly-tipping		
• arson		
11. Facilities must use an appropriate combination of the following measures:		
• security guards	11. All of the items listed in place on site.	
total enclosure (usually with fences)		
controlled entry points		
adequate lighting		
warning signs		
• 24-hour surveillance, such as CCTV		
Fire prevention		
12. There are 3 fire prevention objectives. You must:		
<ul> <li>minimise the likelihood of a fire happening</li> </ul>	12. FPP in place.	
<ul> <li>aim for a fire to be extinguished within 4 hours</li> </ul>		
<ul> <li>minimise the spread of fire within the site and to neighbouring sites</li> </ul>		
13. You must have a fire prevention plan that meets the requirements of <u>our guidance</u> .	13. In Place	
Other accident prevention measures		
14. You must maintain plant control in an emergency using one or a combination of the following		
measures:	14. Interlocks will be in place. Emergency plan to	
• alarms	be updated.	
<ul> <li>process trips and interlocks</li> </ul>		
manual interventions		
15. You must:		
make sure all the measurement and control devices you would need in an emergency are easy	15. Added into specification of plant layout on	15. Sent to c
to access and operate in an emergency situation	site and sent to architectures.	Will be appr
<ul> <li>maintain the plant so it is in a good state of repair through a preventive maintenance</li> </ul>		manufacture
programme and a control and testing programme		
<ul> <li>use techniques such as suitable barriers to prevent moving vehicles damaging equipment</li> </ul>		
<ul> <li>have procedures in place to avoid incidents due to poor communication between operating staff during shift sharpess, on following prointenenges on other anging spin swork.</li> </ul>		
staff during shift changes, or following maintenance or other engineering work		

to one creative to include specification. oproved on plan review prior to ture.	July 2023

#### BAT Analysis of Ecobat Solutions Operations

<ul> <li>where relevant, use equipment and protective systems designed for use in potentially explosive atmospheres</li> <li>Record keeping and procedures</li> <li>16. You must:         <ul> <li>keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections</li> <li>carry out investigations into accidents, incidents, near misses and abnormal events and record the steps taken to prevent their recourrence</li> <li>maintain an inventory of substances, which are present (or likely to be) and which could have environment if they escape — many apparently innocuous substances (for example, AdBu) can damage the environment if they escape</li> <li>have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with</li> <li>make sure that any documents that may be needed in the event of an incident are accessible</li> </ul> </li> <li>Contingency plan and procedures plan and operating procedures to make certain you comply with all your permit conditions and operating procedures to make sure that you:</li></ul>	
Record keeping and procedures       16. You must:       16. Management systems in place for recording of all and included on internal auditing schedule.         • keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections       16. Management systems in place for recording of all and included on internal auditing schedule.         • carry out investigations into accidents, incidents, near misses and abnormal events and record the steps taken to prevent their reoccurrence       if all and included on internal auditing schedule.         • maintain an inventory of substances, which are present (or likely to be) and which could have environmental consequences if they escape       if all and included on internal auditing schedule.         • have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with       if all and included on internal auditing schedule.         • make sure that any documents that may be needed in the event of an incident are accessible       if all and included on internal auditing schedule.         Procedures       • Nou must have and implement a contingency plan and management procedures to make certain you comply with all your permit conditions and operating procedures to make sure that you:       • On te xceed storage limits in your permit and you continue to apply appropriate measures for storing and handing waste       1. Updated to include         • stop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted storage capacity       as far as possible, know	
16. You must: <ul> <li>keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections</li> <li>carry out investigations into accidents, incidents, near misses, and abnormal events and record the steps taken to prevent their reoccurrence</li> <li>maintain an inventory of substances, which are present (or likely to be) and which could have environmental consequences if they escape</li> <li>have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with</li> <li>make sure that any documents that may be needed in the event of an incident are accessible</li> </ul> <li>Contingency plan and procedures for checking roument procedures to make sure that you:         <ul> <li>do not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste</li> <li>stop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted storage capacity</li> <li>as far as possible, know in advance about any planned shutdowns at waste management facilities where you send waste</li> <li>Your contingency plan must include plans and procedures for circumstances where you cannot send your wastes to other sites due to their planned or unplanned shutdown.</li> </ul> </li>	
<ul> <li>keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, abnormal events, and the findings of maintenance inspections</li> <li>carry out investigations into accidents, incidents, near misses and abnormal events and record the steps taken to prevent their reoccurrence</li> <li>maintain an inventory of substances, which are present (or likely to be) and which could have environmental consequences if they escape</li> <li>have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with</li> <li>make sure that any documents that may be needed in the event of an incident are accessible</li> <li>Contingency plan and procedures and implement a contingency plan and management procedures to make certain you comply with all your permit conditions and operating procedures during maintenance or shutdown at your site.</li> <li>Your contingency plan must also contain provisions and procedures to make sure that you:         <ul> <li>do not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste</li> <li>stop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted storage capacity</li> <li>as far as possible, know in advance about any planned shutdown.</li> </ul> </li> </ul>	
abnormal events, and the findings of maintenance inspections       abnormal events, and the findings of maintenance inspections         carry out investigations into accidents, incidents, near misses and abnormal events and record the steps taken to prevent their reoccurrence       maintain an inventory of substances, which are present (or likely to be) and which could have environmental consequences if they escape — many apparently innocuous substances (for example, AdBlu) can damage the environment if they escape       have procedures for checking raw materials and wastes to make sure they are compatible with other substances they may accidentally come into contact with       1. Contingency plan and procedures to make sure they are accessible         Contingency plan and procedures       1. You must have and implement a contingency plan and management procedures to make certain you comply with all your permit conditions and operating procedures during maintenance or shutdown at your site.       1. Contingency plan to be updated to include large scale shredder         2. Your contingency plan must also contain provisions and procedures to make sure that you:       0 not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste       1. Sop accepting waste unless you have a clearly defined method of recovery or disposal and enough permitted storage capacity       as far as possible, know in advance about any planned shutdowns at waste management facilities where you send waste       3. Your contingency plan must include plans and procedures for circumstances where you cannot send your wastes to other sites due to their planned or unplanned shutdown.	
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your wastes to other sites due to their planned or unplanned shutdown.	
4. If you produce an end-of-waste material at your facility, your contingency planning must consider	
issues with storage capacity for end-of-waste products. Iron, steel, aluminium and copper produced in	
accordance with the end-of-waste regulations remain waste and subject to waste controls until they are	
passed to the next holder.	
You must make your customers aware of your contingency plan, and of the circumstances in which you	
would stop accepting waste from them.	
5. You must consider whether the sites or companies you rely on in your contingency plan:	
can take the waste at short notice	
<ul> <li>are authorised to do so in the quantities and types likely to be needed – in addition to</li> </ul>	
carrying out their existing activities	
6. Where circumstances mean you could exceed your permitted storage limits or compromise your	
storage procedures, you must look for alternative disposal or recovery options. You must not discount	
alternative disposal or recovery options on the basis of extra cost or geographical distance.	
7. You must not include unauthorised capacity in your contingency plan. If your contingency plan includes	
using temporary storage for additional waste on your site, then you must:	
make sure your site is authorised for this storage	
have the appropriate infrastructure in place	
8. Your management procedures and contingency plan must also:	
<ul> <li>identify known or predictable malfunctions associated with your technology and the</li> </ul>	
procedures, spare parts, tools and expertise needed to deal with them	
<ul> <li>include a record of spare parts held, especially critical spares – or state where you can get</li> </ul>	
them from and how long it would take to receive them	
<ul> <li>have a defined procedure to identify, review and prioritise items of plant which need</li> </ul>	
preventative maintenance	

Contingency plan	August 2023

#### BAT Analysis of Ecobat Solutions Operations

	May 2020 0			
	<ul> <li>include all equipment or plant whose failure could directly or indirectly affect the environment or human health</li> <li>identify 'non-productive' or redundant items such as tanks, pipework, retaining walls, bunds, reusable waste containers, ducts, filters and security systems</li> <li>make sure you have the spare parts, tools, and competent staff needed before you start maintenance</li> <li>9. Your management system must include procedures for auditing your performance against all these contingency measures and for reporting the audit results to the site manager.</li> </ul>			
Plan decommissioning	<ol> <li>You must consider the decommissioning of the plant at the design stage and make suitable plans to minimise risks during later decommissioning.</li> <li>For existing plant, identify potential decommissioning risks and take steps to address these. You should make changes and design improvements as and when plant is upgraded, or when construction and development works are carried out at your site.</li> <li>Examples of design improvements could include avoiding using underground tanks and pipework. If it is not economically possible to replace them, you must protect them by secondary containment or a suitable monitoring programme.</li> <li>You must have, and maintain, a decommissioning plan to demonstrate that:         <ul> <li>plant will be decommissioned without causing pollution</li> <li>the site will be returned to a satisfactory condition</li> </ul> </li> <li>Your decommissioning plan should include details on:         <ul> <li>whether you will remove or flush out pipelines and vessels (where appropriate) and how you will empty them of any potentially harmful contents</li> <li>site plans showing the location of all underground pipes and vessels</li> <li>how asbestos or other potentially harmful materials will be removed, unless we have agreed it is reasonable to leave such liabilities to future owners</li> <li>methods for dismantling buildings and other structures, and for protecting surface water and groundwater during construction or demolition at your site</li> <li>any soil testing needed to check for any pollution report</li> <li>the measures proposed, once activities have definitively stopped, to avoid any pollution risk and to return the site of operation to a satisfactory state when you cease activities, as defined by the initial site condition report</li> <li>the measures relating to the design and construction of the plant)</li> <li>clearing d</li></ul></li></ol>	1. Decommissioning of the plant plan to minimise risk will be requested from manufacturers.	1. Request information from US to implement decommissioning plan.	July 2023



Area	Requirement	Ecobat operating techniques / procedure / management system reference	GAP Analysis of Ecobat's current practices and BAT conclusions and how gaps will be addressed	By When
Management System	1. You must have and follow an up-to-date written management system. It must incorporate the	ISO 14001 in place.		
	following features.			
	You have:			
	<ul> <li>management commitment, including from senior managers</li> </ul>			
	<ul> <li>an environmental policy that is approved by senior managers and includes the continuous</li> </ul>			
	improvement of the facility's environmental performance			
	2. You plan and establish the resources, procedures, objectives and targets needed for environmental			
	performance alongside your financial planning and investment.			
	3.You implement your environmental performance procedures, paying particular attention to:			
	<ul> <li>staff structure and relevant responsibilities</li> </ul>			
	<ul> <li>staff recruitment, training, awareness and competence</li> </ul>			
	<ul> <li>communication (for example, of performance measures and targets)</li> </ul>			
	employee involvement			
	documentation and records			
	effective process control			
	maintenance programmes			
	<ul> <li>the management of change (including legislative changes and waste classification changes)</li> </ul>			
	<ul> <li>emergency preparedness and response</li> </ul>			
	<ul> <li>making sure you comply with environmental legislation</li> </ul>			
	4.You check environmental performance and take corrective action paying particular attention to:			
	monitoring and measurement			
	<ul> <li>learning from incidents, near misses and mistakes, including those of other organisations</li> </ul>			
	records maintenance			
	independent (where practicable) internal or external auditing of the management system and			
	operations to confirm it has been properly implemented and maintained			
	5. Senior managers review the management system at least annually to check it is still suitable, adequate			
	and effective.			
	6.You review the development of cleaner and more efficient technologies and their applicability to site			
	operations.			
	7. When designing new plant, you make sure that you assess the environmental impacts from the plant's			
	operating life and eventual decommissioning.			
	8.You consider the risks a <u>changing climate</u> poses to your operations. You have appropriate plans in place			
	to assess and manage future risks.			
	9.You compare your site's performance against relevant sector guidance and standards on a regular			
	basis, known as sectoral benchmarking.			
	10.You have and maintain the following documentation:			
	inventory of emissions to air and water     residues management plan			
	residues management plan			
	accident management plan			
	<ul> <li>site infrastructure plan</li> <li>site condition report</li> </ul>			

### BAT Analysis of Ecobat Solutions Operations

	<u>fire prevention plan</u>		
	If required, you have and maintain the following documentation:		
	odour management plan		
	<ul> <li>noise and vibration management plan</li> </ul>		
	dust management plan		
	pest management plan		
	climate change risk assessment		
Staff Competence	Covered in the above BAT. No GAPS identified.		
Accident	Will be included in updated emergency plan in line with metal in shredders BAT assessment above.		
Management Plan			
Accident Preventative	Covered in the above BAT. No GAPS identified.		
Measures			
Contingency plan and	Covered in the above BAT. No GAPS identified.		
procedures			
Plant	Covered in the above BAT. No GAPS identified.		
Decommissioning	As above.		
Waste pre-	Covered in the above BAT. No GAPS identified.		
acceptance			
Waste Acceptance	Covered in the above BAT. No GAPS identified.		
Waste Tracking	Covered in the above BAT. No GAPS identified.		
Waste Storage	Covered in the above BAT. No GAPS identified.		
Preparing WEEE for	Not applicable to Ecobat Solutions Operations		
reuse			
General waste	Not applicable to Ecobat Solutions Operations		
treatment			
Treatment of WEEE	Not applicable to Ecobat Solutions Operations		
Containing BFRs and			
POPs			
		1	1
Process Monitoring	1. At least once a year, for every WEEE stream you treat, you must carry out a mass balance exercise to		
	determine and record the mass of each individual output fraction derived from a given mass of input		
	material. The batch size must be large enough to make sure you can assess a representative sample of		
	typical input materials.		
	2. You should compare each set of results with previous results to monitor the performance of your site		
	and to ensure it is performing optimally.		
	3. Where process monitoring requires chemical analysis to be carried out on waste fractions and residues		
	produced by your treatment process, this must be carried out by an independent accredited laboratory,		
	using recognised accredited methods where they are available.		
	4. You must have, and be able to provide, a full description of the material testing and analysis		
	procedures and methods used, which provide details of the calibration methods and reference standards		
	used.		
	5. You must choose the sample containers and packaging used for storing and transporting according to		
	the nature and requirements of the materials they will contain. For example, chemical properties,		
	pressure and gas tightness.		
	6. You must clearly label sample containers with at least the name of the treatment facility, a description		
	of the waste material or residue contained, the waste stream it was produced from and the date of		
	sampling.		

#### BAT Analysis of Ecobat Solutions Operations

Image: set of a state state that any required sample is one that takes account of the full variation and any participant of use. A regressible is one that takes account of the full variation and any participant of use. The state state and state is a score of the state state state is a state in the state state of the state and state state state is a state in the state state of the state state of the state state of the state of the state and state state state is a state in the state of the state of part restatement plant des s or meet any of the state and state in the state of the state and state in the state of the st			pualeu September 2025	1
discharge lamps       Image: Control of Cathode ray tube (CRT)       Not applicable to Ecobat Solutions Operations         equipment       Image: Control of FPD equipment       Not applicable to Ecobat Solutions Operations         Treatment of FPD equipment       Not applicable to Ecobat Solutions Operations       Image: Control of Co		<ul> <li>someone technically competent to do so. A representative sample is one that takes account of the full variation and any partitioning of the material.</li> <li>8. Samples must be stored in a dark, cool place and dispatched to the laboratory for analysis as soon as possible, preferably within 24 hours of being taken.</li> <li>9. You must carry out sampling under normal operating conditions unless otherwise stated.</li> <li>10. If process monitoring shows that the performance of your treatment plant does not meet any of the standards stated in this guidance, you must send a report to the Environment Agency, summarising:         <ul> <li>the actions you will take to improve performance in order to achieve the standards given, including any additional sampling and testing</li> <li>the dates you will complete these actions by, including the dates for any additional sampling and testing</li> <li>the dates you should sample waste fractions and residues in line with relevant guidance, for example:</li> <li>WM3 Waste classification – Guidance on the classification and assessment of waste – <u>Appendix D</u></li> <li>EN 14899 Characterization of waste – Sampling of waste materials – Framework for the preparation and application of a Sampling under various conditions</li> <li>CEN/TR 15310 1 Characterization of waste – Waste Collection – Part 2: Guide on the selection and application of criteria for sampling under various conditions</li> <li>CEN/TR 15310 3 Characterization of waste – Waste Collection – Part 3: Guide on procedures for sub sampling in the field</li> <li>CEN/TR 15310 4 Characterization of waste – Waste Collection – Part 4: Guide to the packaging procedures for storage, conservation, transportation and delivery of samples</li> <li>CEN/TR 15310 5 Characterization of waste – Sampling of waste – Part 5: Guide on the process of developing a sampling plan. Other guidance on waste sampling a</li></ul></li></ul>		
Treatment of cathode ray tube (CRT) equipment       Not applicable to Ecobat Solutions Operations         Treatment of FPD equipment       Not applicable to Ecobat Solutions Operations         Treatment of SMW       Not applicable to Ecobat Solutions Operations         Treatment of IT, telecommunication's &business equipment       Not applicable to Ecobat Solutions Operations         Treatment of LDA       Not applicable to Ecobat Solutions Operations         Treatment of LDA       Not applicable to Ecobat Solutions Operations         Treatment of photovoltaic panels       Not applicable to Ecobat Solutions Operations         Post-shredding treatments       1. You may use a range of separation technologies to further segregate and purify shredded fractions of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.		Not applicable to Ecobat Solutions Operations		1
Treatment of FPD equipment       Not applicable to Ecobat Solutions Operations         Treatment of SMW       Not applicable to Ecobat Solutions Operations         Treatment of IT, telecommunication's &business equipment       Not applicable to Ecobat Solutions Operations         Treatment of LDA       Not applicable to Ecobat Solutions Operations         Treatment of photovoltaic panels       Not applicable to Ecobat Solutions Operations         Post-shredding treatments       1. You may use a range of separation technologies to further segregate and purify shredded fractions of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.	Treatment of cathode ray tube (CRT)	Not applicable to Ecobat Solutions Operations		
Treatment of IT,       Not applicable to Ecobat Solutions Operations         telecommunication's       &business equipment         Treatment of LDA       Not applicable to Ecobat Solutions Operations         Treatment of photovoltaic panels       Not applicable to Ecobat Solutions Operations         Post-shredding treatments       1. You may use a range of separation technologies to further segregate and purify shredded fractions of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.	Treatment of FPD	Not applicable to Ecobat Solutions Operations		
telecommunication's       An of applicable to Ecobat Solutions Operations         Treatment of LDA       Not applicable to Ecobat Solutions Operations         Treatment of photovoltaic panels       Not applicable to Ecobat Solutions Operations         Post-shredding treatments       1. You may use a range of separation technologies to further segregate and purify shredded fractions of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.	Treatment of SMW	Not applicable to Ecobat Solutions Operations		
Treatment of photovoltaic panels       Not applicable to Ecobat Solutions Operations         Post-shredding treatments       1. You may use a range of separation technologies to further segregate and purify shredded fractions of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.	telecommunication's &business equipment			
photovoltaic panels       I. You may use a range of separation technologies to further segregate and purify shredded fractions         Post-shredding treatments       0f WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.       Image: Constant of the shredding facility or elsewhere.	Treatment of LDA	Not applicable to Ecobat Solutions Operations		
treatments of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.		Not applicable to Ecobat Solutions Operations		
	•	of WEEE. For example, eddy-current separators, electrostatic separators, and density separation, either at the shredding facility or elsewhere.		

#### BAT Analysis of Ecobat Solutions Operations

<ul> <li>here materials originate from WEEE that was POPs waste, fractions of plastic containing brominated e retardants must be managed as POPs waste.</li> <li>here materials originate from WEEE that was not POPs waste, fractions of plastic containing initiated flame retardants must be assessed to determine if they are POPs waste.</li> <li>u must fully characterise and classify (including for POPs) process solutions and washings from ity separation processes before determining suitable disposal options. Where these originate from reatment of POPs waste, any POPs must be destroyed.</li> <li>u must only use waste codes for single material outputs, for example plastic, where the treatment wed is aimed at producing a pure material fraction. Contamination by other materials must be gible.</li> <li>bess monitoring for the separation of BFR containing plastic</li> <li>u must monitor at least once every 3 months how much BFR containing plastic is present in any on destined for recycling.</li> <li>u must record in the waste tracking system: <ul> <li>that the WEEE has been treated or consigned to another WEEE treatment facility</li> <li>what WEEE has been prepared for reuse or has been consigned to a preparing for reuse operator</li> <li>what the treatment residues, treated components and fractions are</li> </ul> </li> <li>red in the above BAT. No GAPS identified.</li> <li>red in the above BAT. No GAPS identified.</li> </ul>			
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red in the above BAT. No GAPS identified.			
dition to the above techniques listed under shredding metal waste, is the below: u must carry out emissions monitoring when the plant is operating at or near to full treatment city. Information regarding the plant treatment processing rate and air flow rate at the time of toring must be recorded and submitted with the monitoring results. u must monitor point source emissions to air from your treatment plant for the following substances the monitoring standards stated. You must monitor at the frequencies stated and meet the fied emission limits unless your permit states alternative requirements. <b>nelled emissions to air from all mechanical treatment of WEEE</b> itoring standard – EN 13284-1. uency – every 6 months. sion limit – 5mg/m <sup>3</sup> (where it is inappropriate to fit a fabric filter due to the potential effects of gration on the filter, the limit is 10mg/m <sup>3</sup> ). C itoring standard – EN 12619. uency – every 6 months. dition, the following monitoring is required from all mechanical treatment of WEEE when the scance concerned is identified as relevant based on your facility's emissions inventory. <i>n-like PCBs</i>	<ul> <li>3. Included in the planned emissions monitoring</li> <li>4. At a minimum the below will be tested for on initial testing. Other substances may be identified and added during permitting process.</li> </ul>		
u must city. Inf toring u must the m fied en <b>nelled</b> itoring uency - sion lin gratior toring uency - dition, cance c	t carry out emissions monitoring when the plant is operating at or near to full treatment formation regarding the plant treatment processing rate and air flow rate at the time of must be recorded and submitted with the monitoring results. t monitor point source emissions to air from your treatment plant for the following substances nonitoring standards stated. You must monitor at the frequencies stated and meet the mission limits unless your permit states alternative requirements. I emissions to air from all mechanical treatment of WEEE standard – EN 13284-1. – every 6 months. mit – 5mg/m <sup>3</sup> (where it is inappropriate to fit a fabric filter due to the potential effects of n on the filter, the limit is 10mg/m <sup>3</sup> ). standard – EN 12619. – every 6 months. the following monitoring is required from all mechanical treatment of WEEE when the concerned is identified as relevant based on your facility's emissions inventory. <i>PCBs</i> standard – EN 1948-1, -2 and -4.	<ul> <li>t carry out emissions monitoring when the plant is operating at or near to full treatment formation regarding the plant treatment processing rate and air flow rate at the time of must be recorded and submitted with the monitoring results.</li> <li>t monitor point source emissions to air from your treatment plant for the following substances honitoring standards stated. You must monitor at the frequencies stated and meet the mission limits unless your permit states alternative requirements.</li> <li>l emissions to air from all mechanical treatment of WEEE</li> <li>standard – EN 13284-1.</li> <li>every 6 months.</li> <li>mit – 5mg/m<sup>3</sup> (where it is inappropriate to fit a fabric filter due to the potential effects of n on the filter, the limit is 10mg/m<sup>3</sup>).</li> <li>standard – EN 12619.</li> <li>every 6 months.</li> <li>the following monitoring is required from all mechanical treatment of WEEE when the concerned is identified as relevant based on your facility's emissions inventory.</li> <li><i>PCBs</i></li> <li>standard – EN 1948-1, -2 and -4.</li> </ul>	t carry out emissions monitoring when the plant is operating at or near to full treatment formation regarding the plant treatment processing rate and air flow rate at the time of must be recorded and submitted with the monitoring results. It monitor point source emissions to air from your treatment plant for the following substances to inition source emissions to air from your treatment of WEEE standard – EN 13284-1. – every 6 months. mit – 5mg/m <sup>3</sup> (where it is inappropriate to fit a fabric filter due to the potential effects of n on the filter, the limit is 10mg/m <sup>3</sup> ). standard – EN 12619. – every 6 months. the following monitoring is required from all mechanical treatment of WEEE when the soncerned is identified as relevant based on your facility's emissions inventory. PCBs

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	PCDD/F		
	Monitoring standard – EN 1948-1, -2 and -3.		
	Frequency – every 12 months.		
	BFRs		
	Frequency – every 12 months.		
	Metals and metalloids excluding mercury		
	Monitoring standard – EN 14385.		
	Frequency – every 12 months.		
	Channelled emissions to air from the treatment of WEEE containing mercury		
	Total mercury		
	Monitoring standard – EN 13211.		
	Frequency – every 3 months.		
	Emission limit – 7μg/m <sup>3</sup> .		
	Periodic monitoring results should normally consist of the average value of 3 consecutive measurements		
	of at least 30 minutes each. For some parameters, due to analytical limitations, a longer sampling period		
	may be required.		
	Monitoring frequencies may be reduced if the emission levels are proven to be sufficiently stable over		
	time.		
Point source	Covered in the above BAT. No GAPS identified.		
emissions to water or			
sewer			
Energy Efficiency	Covered in the above BAT. No GAPS identified.		
Raw Materials	Covered in the above BAT. No GAPS identified.		
Water Use	Covered in the above BAT. No GAPS identified.		
Waste minimisation,	Covered in the above BAT. No GAPS identified.		
recovery and disposal			

Chemical waste: a	ppropriate measures for permitted facilities.			
Area	Requirement	Ecobat operating techniques / procedure / management system reference	GAP Analysis of Ecobat's current practices and BAT conclusions and how gaps will be addressed	By When?
Management System	Covered in the above BAT. No GAPS identified.			
Staff Competence	Covered in the above BAT. No GAPS identified.			
Accident Management Plan	Will be included in updated emergency plan in line with metal in shredders BAT assessment above.			
Accident Preventative Measures	Covered in the above BAT. No GAPS identified.			
Contingency plan and procedures	Covered in the above BAT. No GAPS identified.			
Plant Decommissioning	Covered in the above BAT. No GAPS identified.			
Waste pre- acceptance	Covered in the above BAT. No GAPS identified			
Waste acceptance	Covered in the above BAT. No GAPS identified			

#### BAT Analysis of Ecobat Solutions Operations

Waste tracking	Covered in the above BAT. No GAPS identified	•
Waste Storage	1. You must store waste in locations that minimise the handling of waste. Waste handling must be carried	1. minimised handling of waste. Lead on site,
	out by competent staff using appropriate equipment.	introduction of new building so material is not
	2. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for	handled more than necessary.
	example, those close to public rights of way, housing or schools). You must store all waste within the	2.In place as detailed in above BAT analysis.
	secure area of your facility to prevent unauthorised access and vandalism.	,
	3. Where relevant, you must conform to <u>HSE standards</u> and in particular to:	3. HSG71, HGS67 complied with and regularly
	HSG51 Storage of flammable liquids in containers	audited against.
	<ul> <li>HSG71 Chemical warehousing: storage of packaged dangerous substances</li> </ul>	5
	<ul> <li>HSG76 Warehousing and storage: a guide to health and safety</li> </ul>	
	HSG140 Safe use and handling of flammable liquids	
	<ul> <li>HSG176 Storage of flammable liquids in tanks</li> </ul>	
	<u>CS21 Storage and handling of organic peroxides</u>	
	4. You must clearly document the maximum storage capacity of your site and the designated storage	4 - 8. Inline as above BAT analysis
	areas. You must not exceed these maximum capacities. You should define capacity in terms of, for	
	example, maximum tank or vessel capacities, tonnage and numbers of skips, pallets or containers. You	
	must regularly monitor the quantity of stored waste on site and designated areas and check against the	
	allowed maximum capacities.	
	5. You must clearly mark hazardous waste storage areas and provide signs showing the maximum	
	quantity and hazardous properties of wastes that can be stored there.	
	6. Storage area drainage infrastructure must:	
	contain all possible contaminated run-off	
	<ul> <li>prevent incompatible wastes coming into contact with each other</li> </ul>	
	make sure that fire cannot spread	
	7. Secondary and tertiary containment systems must conform to CIRIA guidance <u>C736 Containment</u>	
	systems for the prevention of pollution.	
	8. You must store containerised wastes that are sensitive to air, light, heat, moisture or extreme ambient	
	temperatures under cover protected from such ambient conditions. Covered areas must have good	
	<ul> <li>ventilation. This applies to any such container:</li> <li>held in general storage, reception storage (pending acceptance) or quarantine</li> </ul>	
	<ul> <li>being emptied, repackaged or otherwise managed</li> </ul>	
	For example, waste held in fibre or cardboard primary or secondary packaging should be stored under	
	cover in a dry area and not exposed to rain or moisture. It must be kept off floors to prevent damage by	
	damp.	
	9. You must store wastes in sealed metal containers under cover if they have the potential for self-	9. Wastes on site not deemed self-heating
	heating or self-reactivity. You must monitor the containers for heat build-up. Such wastes include rags	
	and filter materials contaminated with metal swarf, low boiling point oils or low flash point solvents.	
	10. Wherever practicable you should store all other wastes under cover. Covered areas must have good	10. Where practical this is completed utilising
	ventilation. This applies to any such container:	additional storage buildings on site.
	<ul> <li>held in general storage, reception storage (pending acceptance) or quarantine</li> </ul>	
	<ul> <li>being emptied, repackaged or otherwise managed</li> </ul>	
	Under cover storage provides better protection for containers than open air storage and minimises the	
	generation of contaminated water. Covered storage also:	
	<ul> <li>lowers temperature fluctuations that can cause pressure build up in containers</li> </ul>	
	<ul> <li>reduces the degradation of containers through weathering</li> </ul>	
	11. You must not store hazardous waste in open-topped containers. Empty open-topped containers	11. All drums of materials will be lidded and
	should be kept in a building or undercover to prevent rainwater ingress.	sealed.
	12. You must not store or hold wastes on site in vehicles or vehicle trailers unless you are receiving them	12. Within site working plan, in place currently.
	or preparing them for imminent transfer (meaning that you will remove them from site within 24 hours,	
	or 72 hours if over a weekend).	

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UTIONS	May 2023 – Updated September 2023	
13. You should pay particular attention to avoid the build-up of static electricity we handling flammable wastes and materials. You should use leak detection systems example VOC alarms) and automatic fire suppression equipment based on a reco	and alarms (for ded risk assessment.	
14. You must provide adequate bunding of all storage areas, and containment an water run-off.	treatment of any 14. Full site bunding and ETP.	
<ul> <li>15. You must not accumulate waste. You must treat wastes, or remove them from possible. Generally you should do this within one month of receipt but all wastes within 6 months of receipt. This applies even when the waste might be used as a shorter time period is given in a permit condition you must comply with the perm a waste is stored for longer than allowed you must inform the Environment Agen 16. All stored containers must keep the labelling they had at acceptance. If the la longer legible you should replace the label with that same information.</li> <li>17. You must handle and store containers so that the label is easily visible and co 18. You should keep solid waste dry and avoid the dilution of hazardous waste.</li> <li>19. You must keep incompatible wastes segregated so that they cannot come interest.</li> </ul>	GAPS identified. GAPS identified. GAPS identified.	no
another. You must store flammable wastes apart from other wastes to prevent fi them and other materials. You must use sealed drainage systems to prevent leak		
contaminating other wastes. 21. There must be pedestrian and vehicular access (for example, forklift) at all tin area so that you can retrieve containers without removing others that may be blo than removing those in the same row.		
22. You must store all waste containers in a way that allows easy inspection. You access, with a gap of at least 0.7m between rows of bulk containers or palletised 23. You must move drums and other mobile containers between different location removal off site) following written procedures. You must then amend your waster	vastes. s (or loaded for 23. Written procedures in place, tracking s	ystem
record these changes. 24. You must stack bags and boxes of waste no more than 1m high on a pallet. You	analysis.	24. Add
more than 2 high. 25. You must stack containers specifically designed for stacking, and no more tha 26. You must store all other containers on pallets. You must not stack these palle except for empty containers which can be stacked 3 high.		25. Ado
27. Stacked bags, boxes and containers must be stable. They must be secured with or shrink-wrap, if required. The packages must not extend beyond (over-hang) the shrink-wrap used must be clear or transparent so that you can identify waste typ leaks or spillages and incorrectly stacked containers. You must be careful not to or during stacking.	sides of the pallet. Any residue will be in drums / nags s, damaged containers,	ies),
<ul> <li>28. All waste containers must remain fit for purpose. You must check any contain may be stored on) daily and record non-conformances. Non-compliant container made safe. You must immediately and appropriately manage any unsound, poorl containers (for example, by relabelling, over drumming and transferring the cont must risk assess, approve and record the use of containers, tanks and vessels: <ul> <li>beyond their specified design life</li> </ul> </li> </ul>	and pallets must be labelled or unlabelled	orded
<ul> <li>where you use them for a purpose, or substances, other than the one</li> <li>29. You must not handle waste or its packaging in a way that might damage its in</li> <li>appropriate to destroy a waste or its packaging, for example by shredding. You m</li> <li>walk on or throw waste or waste packages.</li> </ul>	egrity, unless it is 29. In place currently as above inspection.	
30. You should, where applicable and based on a recorded risk assessment, make tanks containing organic liquid waste with a flashpoint less than 21°C. This can be using nitrogen gas.		SS

Add restrictions into procedure and train out.

Add into procedure

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	31. You must store asbestos waste double bagged or wrapped, in sealed, closed and locked containers.	31 No asbestos material on site	
	You must not store asbestos waste loose. You must not put asbestos wastes into bays or transfer it		
	between different skips or containers. You must not use mechanical equipment, for example loading		
	shovels, chutes and conveyors to move asbestos waste.		
	32. You must not stack wheeled containers on top of one another. Do not stack empty wheeled	32. No stacking of wheeled containers on site.	
	containers into one another more than 2.2m high.		
	33. All containers that need them should have a lid or bung, and the lid or bung must be closed except	33. Inspection process in place	
	when the container is being sampled, having waste added into it or having waste removed from it.		
	34. You must not stack skips containing waste. Skips containing hazardous waste must be enclosed when	34. No skips used.	
	not being loaded or unloaded. You should store loose bulk hazardous wastes under cover.		
	35. You can use racking systems to store waste but you must consider segregation, ability to inspect,	35. Racking system uses and HSG76 applied by.	
	separation and fire suppression measures. Racking systems must be designed and constructed in		
	accordance with HSG76 Warehousing and storage.		
	36. You must:	36. Full site bunded. Additional bunding where	
	• contain wash waters within an impermeable area and either discharge them to foul sewer or	appropriate and ETP on site.	
	dispose of them appropriately off site.		
	<ul> <li>prevent run-off into external areas or to surface water drains</li> </ul>		
	37. You must manage waste in a way that prevents pests or vermin. You must have specific measures and	37. Containerized. Regular pest inspections.	
	procedures in place to deal with wastes that are identified as causing pests or vermin.	<u> </u>	
	38. You must inspect storage areas, containers and infrastructure daily. You must deal with any issues	38. Added in to a new audit as action detailed in	
	immediately. You must keep written records of the inspections. You must rectify and log any spillages of	above BAT analysis.	
	waste.		
	39. You must train forklift drivers in the handling of palletised goods, to minimise forklift truck damage to	39. Drained in FLT & ADR awareness	
	the integrity of containers and infrastructure.		
	40. You must not carry out activities that represent a clear fire risk within any storage area. Examples	40. FPP in place.	
	include:		
	• grinding		
	welding or brazing of metalwork		
	• smoking		
	<ul> <li>parking normal road vehicles, except while unloading or loading</li> </ul>		
	<ul> <li>recharging batteries</li> </ul>		
Bulk Storage	None on site.		
Transfer of waste into	Not applicable to our operations		
and from tankers			
Aerosol Storage	71. You must store aerosol canisters under cover in secure, well-ventilated containers, and within caged	Dedicated roofed cage in place in quarantined	
, leroson otorage	storage areas. You must also store them in a well-vented place that is not subject to extreme	area.	
	temperatures or direct sunlight. You must not store canisters in open containers to prevent the risk of		
	them spreading fires by 'missiling' or 'ejection'.		
	72. You must segregate aerosol canisters from other flammable wastes and potential sources of ignition.		
	Preferably put them in a separate building or use a fire-resistant enclosure or fire wall. You must not hold	As above	
	any combustible material within the storage area, other than the canister's packaging, containers, and		
	the pallets on which they stand.		
	73. You must provide suitable containment measures (for example drip trays) for aerosol canisters held in		
	containers which cannot collect and hold free liquids released from the canisters. Or you should transfer		
	them to secure containers that are able to hold free liquid.		
	74. During storage, lids on containers holding aerosol canisters must remain securely closed at all times		
	when not being filled, emptied, or internally inspected. When not in use, the doors or hatches of cages		
	must remain closed and locked.		
	75. You must not overfill containers used to store conjeters. Querfilling can result in conjeters being		

75. You must not overfill containers used to store canisters. Overfilling can result in canisters being

actuated and discharging their contents, either:



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	iviay 2023 – Up	bdated September 2023	
	<ul> <li>under the weight of the canisters above them</li> </ul>		
	when the container lid is closed		
	when containers are stacked		
	76. Cages used to store aerosol canister containers must be robust, fire resistant and of an appropriate		
	mesh size (based upon the size of the canisters being stored). This is to constrain the canisters and		
	prevent any ejection. Where the cage is not constructed with a mesh roof, the mesh wall panels must		
	extend into the roof space of the storage area to make sure that the structure is completely enclosed.		
	77. You should store aluminium canisters separately from steel canisters (especially rusting canisters).		
	This will:		
	<ul> <li>prevent thermite sparks during storage, handling, and treatment.</li> </ul>		
	<ul> <li>allow the different metals to be more easily recovered.</li> </ul>		
Sorting, repackaging,	Identified in above BAT analysis. No GAP identified.		
and bulking			
Laboratory smalls	Do not handle laboratory smalls.		
General Waste	Identified in above BAT analysis. No GAP identified.		
Treatment			
Aerosol Cannister	No aerosol treatment completed on site.		
Treatment	Identified in above BAT analysis. GAP of wasp system to be updated.		
Record keeping for all			
treatment residues.			
Emissions to air	Covered in the above BAT. No GAPS identified.		
Fugitive emissions to	Covered in the above BAT. No GAPS identified.		
air			
Point source	Covered in the above BAT. No GAPS identified.		
emissions to water			
and sewer			
Fugitive emissions to	Covered in the above BAT. No GAPS identified.		
land and water			
Emissions to air	Covered in the above BAT. No GAPS identified.		
Point source	Covered in the above BAT. No GAPS identified.		
emissions to water or			
sewer			
Energy Efficiency	Covered in the above BAT. No GAPS identified.		
Raw Materials	Covered in the above BAT. No GAPS identified.		
Water Use	Covered in the above BAT. No GAPS identified.		
Waste minimisation,	Covered in the above BAT. No GAPS identified.		
recovery and disposal			
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