Sidegate Lane Battery Processing Facility

Best Available Techniques and Operating Techniques Assessment

SUEZ Recycling and Recovery UK

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1.0 Introduction

SLR Consulting Ltd (SLR) has been commissioned by SUEZ Recycling and Recovery UK Ltd (SUEZ) to prepare a Best Available Techniques and Operating Techniques (BATOT) document in support of an Environmental Permit variation application for the introduction of a battery recycling facility at their Sidegate Lane site. The proposal relates to the existing Sidegate Lane Open Windrow Composting and Waste Transfer Station Facility (hereafter referred to as "the site"), which is currently regulated under bespoke Environmental Permit reference EPR/XP3092NX, held by SUEZ Recycling and Recovery UK Ltd. Under the existing permit, the site is authorised to operate both an Open Windrow Composting (OWC) facility and a Waste Transfer Station (TS). However, while the permit allows for OWC operations, this activity is not currently undertaken at the site. At present, the site operates solely as a Waste Transfer Station.

This BATOT document has been developed to support the proposed addition of a battery recycling operation to the site's existing permitted activities. It outlines the technical and management measures that will be implemented to ensure compliance with the relevant Best Available Techniques (BAT) conclusions for waste treatment, as set out in the BAT Reference Document (BREF), and in accordance with the requirements of the Environmental Permitting (England and Wales) Regulations 2016 (as amended) and associated Environment Agency Appropriate Measures guidance. The purpose of this document is to demonstrate how the proposed battery recycling activities will be operated to prevent or, where that is not practicable, reduce emissions and impacts on the environment through the application of appropriate design, operational control, and management techniques.

As part of the battery recycling operation, lithium-ion batteries and lithium-ion battery materials will be stored and treated on site. Lithium-ion battery 'materials' include lithium-ion battery scrap materials sourced from battery manufacturing and pre-shredded lithium-ion batteries from other permitted waste operations. The treatment operation will consist of battery discharge, dismantling, shredding, and subsequent separation and sorting of shredded materials to send for further recovery. Lithium-ion batteries may also be accepted for bulking and transfer only. Batteries of other chemistries and fluorescent tubes will be accepted for storage and transfer only.

To facilitate the proposed activity, the existing waste operations permit will be varied to a bespoke installation permit. The variation will include the addition of the following installation activities, as defined in Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2016 (as amended):

- Section 5.3 Part A(1)(a)(ii): Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
- Section 5.6 Part A(1)(a): Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes, pending any of the activities listed in Sections 5.1, 5.2, or 5.3.

Directly Associated Activities (e.g. treatment of metal waste in a shredder) will also support the site operations.

Activities classified as Installations are required to comply with the principles of Best Available Techniques (BAT). The core principle of BAT is to ensure that the techniques selected to protect the environment achieve an appropriate balance between the environmental benefits provided and the associated implementation costs. Furthermore, it must be demonstrated that the activity as a whole does not cause significant pollution, which is established through an assessment of the environmental impact of emissions from the entire operation.

This BATOT report is an integrated document which describes both the operating techniques that will be implemented at the facility to ensure compliance with the conditions of the EP and also demonstrates compliance with BAT where applicable.

1.1 Site Location

The site is located on Sidegate Lane in Wellingborough, Northamptonshire, at National Grid Reference SP 91464 70336. It lies approximately 3.5 km northeast of Wellingborough town centre.

The site is situated adjacent to the closed Sidegate Lane Landfill and is surrounded predominantly by agricultural land, interspersed with occasional industrial buildings. The nearest residential receptor is Ryebury Farm, located approximately 200 metres west of the site boundary and around 250 metres from the proposed site building.

The nearest designated ecological receptor is Finedon Top Lodge Quarry, a Site of Special Scientific Interest (SSSI) and Local Wildlife Site, situated approximately 990 metres east-southeast of the site. The Upper Nene Valley Gravel Pits SSSI, SAC and Ramsar is located 1,950m southeast of the site. There are no further European Sites within 10km or SSSIs within a 2km radius of the site boundary.

The site location is illustrated on Drawing Sgl-LITH-LAY-0625-01.

1.2 Summary of Proposed Operations

The lithium-ion battery treatment operation will consist of battery discharge, dismantling, shredding, and subsequent separation and sorting of shredded materials to send for further recovery. The targeted treatment outputs include battery cell materials including black mass, copper and aluminium. Residual outputs include hard plastic, aluminium, copper and cables from dismantling, and case metal and plastics, and compacted plastics from mechanical treatment. The treatment plant has been designed and commissioned for the mechanical treatment of lithium-ion batteries.

The entire treatment plant benefits from a comprehensive dust extraction management system comprising two separate, purpose-built Local Exhaust Ventilation (LEV) systems. These systems extract air directly from the processes, resulting in two point-source emissions to air. The first LEV system serves the shredder and includes a baghouse filter and dust collection unit rated for explosive atmospheres (ATEX), in addition to external carbon filters designed to absorb Volatile Organic Compounds (VOCs) The second LEV system is connected to the sorting plant and features a baghouse filter located inside the building. The captured contents from this system are retained for further treatment to recover valuable outputs.

Both LEV systems are designed to effectively minimise the emission of fine particulates. All treatment processes are interlocked with the LEV systems and can only operate when the extraction systems are fully functional. The existing infrastructure will be utilised for the battery processing operation. The yard outside the building will used for the handling and loading of batteries and battery materials. All manual and mechanical treatment will be undertaken within the existing site building, which is equipped with roller-shutter doors. The yard in the north area of the site will be used for the storage of waste in designated containers as well as for the electrochemical discharge of batteries in a covered area adjacent to the surface water lagoon. All areas benefit from impermeable surfacing to prevent to prevent the release of liquids into the underlying land and/or groundwater and is constructed to direct uncontaminated rainfall runoff to the appropriate drainage system.

1.3 Key Technical Standards

The key technical standards that will be followed for the site are:

- Best Available Techniques Reference (BREF) Document for Waste Treatment, European IPPC Bureau JRC, published 2018;
- Treating metal waste in shredders: appropriate measures for permitted facilities, gov.uk, 20 October 2021;
- Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities, gov.uk, 13 July 2022;
- Chemical waste: appropriate measures for permitted facilities, gov.uk, 18 November 2020;
- Waste batteries – appropriate measures for permitted facilities (Early pre-consultation draft);
- Risk assessments for your environmental permit, last updated 3 January 2025, Environment Agency, gov.uk;
- Control and monitor emissions for your environmental permit, last updated 11 June 2025, Environment Agency, gov.uk;
- Energy efficiency standards for industrial plants to get environmental permits, gov.uk (July 2019); and
- Fire Prevention Plans: Environmental Permits, gov.uk (January 2021); and3 April 2023 August 2021, Environment Agency, gov.uk

1.4 Process Flow Diagram

The process flow diagram is shown in Figure 1-1below.

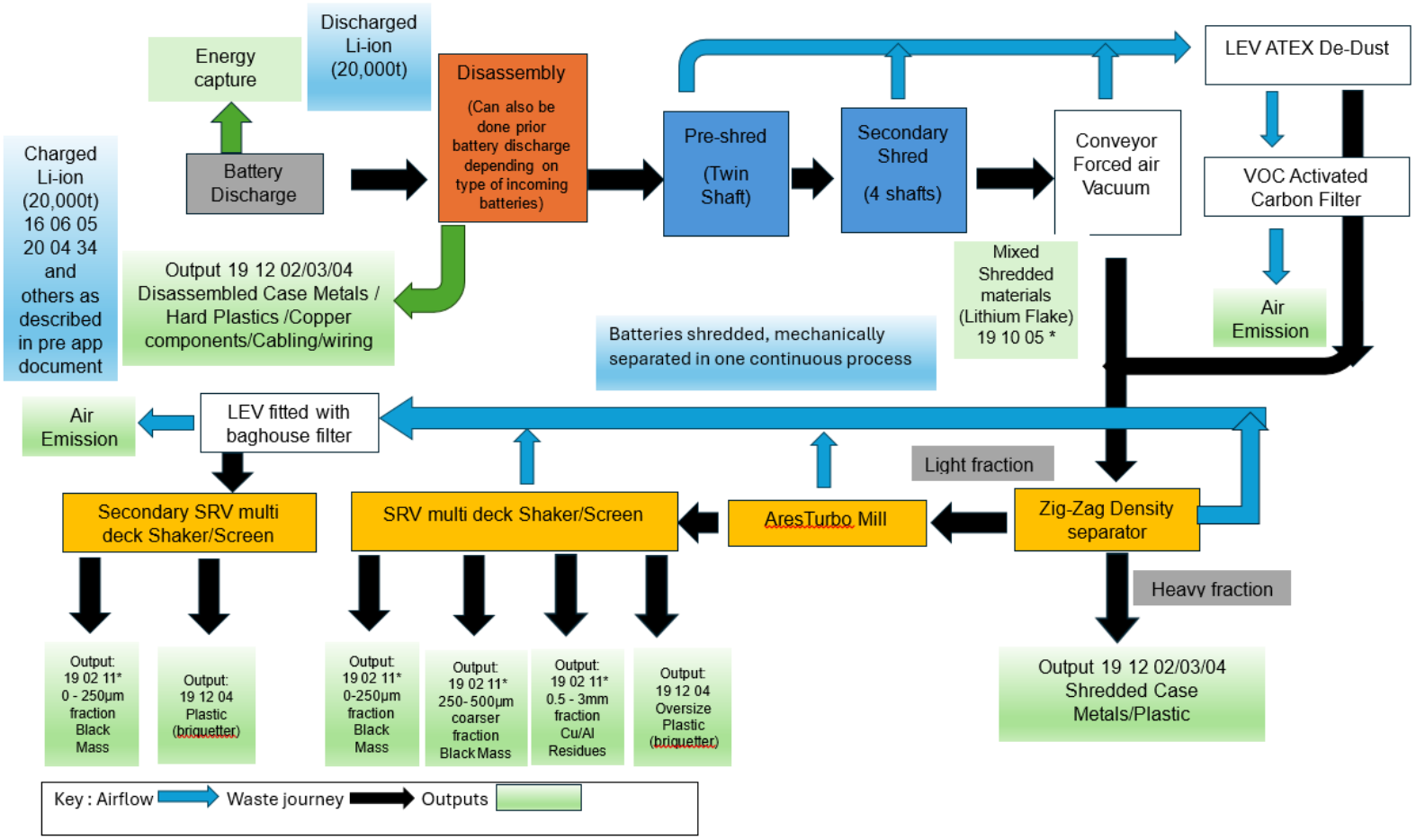

Figure 1-1 Process Flow Diagram

2.0 Management of the activities

2.1 Management Systems

SUEZ will operate the site using its Environment Management System accredited to ISO14001.

The management system ensures that:

- The risks that the activities pose to the environment are identified;
- The measures that are required to minimise the risks are identified;
- The activities are managed in accordance with the management system;
- Performance against the management system is audited at regular intervals; and
- The EP is complied with.

The management system will be reviewed at least once every four years or in response to significant changes to the activities, accidents or non-compliance. The management system will be supplemented by this BATOT document which outlines the proposed operating techniques at the site and demonstrates conformance with the requirements of EA guidance.

2.2 Environmental Policy, Objectives and Targets

Details of the company's environmental policy including environmental targets and objectives and improvement programme will be contained within the management system.

2.3 Management Techniques

2.3.1 Operational Control, Preventative and Calibration

Compliance with operating procedures will ensure effective control of site operations.

As part of the environmental management system, procedures will be established covering the following general topics:

- Management and training;
- Environmental protection and risk assessment;
- Equipment registers and calibration;
- Defects, non-conformance and complaints; and
- Operations control and equipment maintenance.

A maintenance programme for all equipment will be implemented at the site. This will follow the inspection and maintenance schedule recommended by the equipment manufacturer(s). The maintenance programme will be reviewed annually to ensure any necessary changes are implemented.

Also held on site will be any operation and maintenance manuals as provided by the equipment manufacturer(s).

Where necessary, all monitoring and process control equipment will be calibrated in accordance with manufacturers' recommendations.

2.3.2 Monitoring, Measuring and Reviewing Environmental Performance

A formalised management structure will review environmental performance and ensure any necessary actions are taken.

The Site Manager will review the facility's environmental performance on a regular basis to ensure policy commitments are met, that policy remains relevant, and to ensure that actions to improve environmental performance are identified. Records of environmental performance will be maintained within an appropriate filing system at the Site Managers' allocated office (or appropriate alternative), or on an electronic system.

2.3.3 Staffing, Competence and Training

The Site Manager will be responsible for ensuring that training levels for operational staff are adequate, relevant and up to date.

All staff will be under the supervision of a technically competent manager/supervisor.

Staff employed on site will benefit from training, which will ensure their professional and technical development continues. There will be a commitment for staff at all levels to continual improvement, prevention of pollution and compliance with legislation. The training will ensure that staff are aware of:

- Skills and competencies required for each job;
- Regulatory implications of the permit for the site and activities;
- Potential environmental effects from operations under normal and abnormal circumstances;
- Prevention of accidental emissions and actions to be taken in response to accidents;
- Control of point source and fugitive emissions to air;
- Control of odour;
- Raw material and waste handling, waste minimisation, recovery and/or disposal;
- Noise;
- Environmental monitoring; and
- Health and safety.

The management system and BATOT document will be available for site personnel to access at all times. Furthermore, refresher training will be provided on site policies annually. This will reduce accidents and minimise the impact of the installation on the environment, by ensuring the site operates correctly.

Training records will be maintained by the Site Manager and held in the Site office.

2.3.4 Communication and reporting of actual or potential non-compliances and complaints

If actual or potential non-compliances occur on site, these will be recorded in the Site Diary and communicated to the Site Manager. The Site Manager will investigate each event and identify a solution to remedy it and prevent it from reoccurring. If the non-compliance event is sustained, the operations may be stopped until a solution can be found, to minimise harm to the environment.

The remedial actions taken in response to the non-compliance may include:

- Obtaining additional information on the nature and extent of the non-compliance;
- Discussing and testing alternative solutions;
- Modifying procedures and responsibilities;
- Seeking approval for additional resources and training;

- Contacting suppliers and contractors to seek alterations to the way they operate; and
- Informing the environment agency (EA).

Members of the public can file complaints by contacting the site. All complaints received by the Site Manager will be recorded in the Site Diary and investigated, with a follow up response communicated to the complainant within 10 working days.

2.3.5 Auditing

The site will benefit from regular auditing to ensure that it is compliant with the conditions of its permit, namely record keeping, monitoring and emission levels. The audit will be carried out by the Site Manager, or another Technically Competent Person, to ensure that all activities on site are in accordance with the conditions of the EP. The outcome of the audit will be reviewed and tracked to identify any frequent non-compliances.

2.3.6 Corrective action to analyse faults and prevent recurrence

The Site Manager will deal with all environmental complaints and other incidents of non-conformance. These include:

- System failure discovered at internal audit;
- Incidents, accidents, and emergencies; and
- Other operational system failures.

Environmental non-compliances, including remedial action taken and any changes to operation made to avoid re-occurrence will be recorded. Complaints will be reported to and investigated by the Site Manager and remedial measures implemented as required. Changes to prevent future complaints will be proposed and implemented where appropriate. Written records of non-conformances, complaints and other incidents will be maintained in the Site Log in which the date, time and nature of the event, together with the results of investigations and remedial action taken, will be recorded.

2.3.7 Reviewing and reporting environmental performance

Senior management will review environmental performance annually and take actions to ensure that policy commitments are met and that policy remains relevant.

2.3.8 Managing documentation and records

The Site Manager will be responsible for ensuring commitments to site audits and reviews and for ensuring that documents relevant to the EP are issued, revised and maintained in a consistent fashion.

An appropriate filing system will be maintained to ensure that all records relating to environmental monitoring, maintenance, reviews and audits are adequately maintained and updated. All records will be held within the site office.

2.4 Accident Management Plan

SUEZ recognise the importance of the prevention of accidents that may have environmental consequences and that it is crucial to limit those consequences.

An Accident Prevention and Management Plan (APMP) (1.4 Accident Prevention & Management Plan, June 2025) will be implemented and maintained at the site to ensure the staff are fully prepared for such incidents. All accidents shall be reported and recorded in a timely manner and shall be investigated as soon as practicable, which may include an Incident Review Panel, dependent on the severity of the incident.

Investigation findings shall be recorded and preventative measures, where identified, shall be implemented as soon as practicable. Actions to minimise the potential causes and consequences of accidents are included in the APMP.

2.4.1 Hazard Identification

The following hazards have been identified in the Environmental Risk Assessment (ERA) (1.3 Environmental Risk Assessment, June 2025):

- Odour from storage of waste and treatment outputs;
- Odour from the storage of waste on site during contingencies such as mechanical breakdown;
- Odour arising from the treatment of waste;
- Noise and vibration from site mobile plant and vehicles delivering waste to the site;
- Noise and vibration from physical waste treatment processes;
- Dust and particulates from waste during deposit, storage and loading operations;
- Dust and particulates from physical waste treatment processes;
- Contaminated rainwater from contact with wastes;
- Storage of salt solution for electrochemical discharge;
- Storage of oil, fuel or hydraulic fluid;
- Scavenging birds or animals attracted to site and carrying waste off site;
- Flies and vermin breeding in waste; and
- Litter, debris and mud on the public highway.

For information on how these risks will be mitigated at the facility, please refer to the ERA.

3.0 Operations

3.1 Process Design

The process has been designed to treat end-of-life lithium-ion batteries as well as waste battery materials from the manufacturing of lithium-ion batteries. Small volumes of other battery types are also accepted for storage and transfer only, including Ni-Cd batteries, mercury-containing batteries, alkaline batteries, and fluorescent tubes. Hazardous wastes permitted on site will include hazardous batteries, battery materials and outputs from battery treatment.

3.2 Feedstock and Capacity

The site will undertake lithium-ion battery recycling with a capacity of 20,000 tonnes per annum. The site may store over 50 tonnes of Hazardous batteries, lithium-ion battery materials and battery treatment outputs at any one time. The daily treatment capacity for this activity for Non Hazardous Waste will be below 75 tonnes per day. The daily treatment capacity for this activity for Hazardous Waste may exceed 10 tonnes per day .

Waste accepted for treatment is listed in Table 3-1 Waste listed for transfer only is listed in Table 3-2.

Persistent Organic Pollutants (POPs) are not expected to be present within the waste types accepted, stored, and treated on site.

Table 3-1 Waste Accepted for Treatment

EWC Code	EWC Code Description
16 01 21*	Hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14 (limited to li-ion packs, modules, cells, dry cells, anode foils, cathode foils)
16 01 22	Components not otherwise specified (limited to lithium-ion Batteries or component parts)
16 03 03*	Inorganic wastes containing hazardous substances (limited to li-ion packs, modules, cells, dry cells, anode foils, cathode foils)
16 03 04	Inorganic wastes other than those mentioned in 16 03 03 (limited to li-ion packs, modules, cells, dry cells, anode foils, cathode foils)
16 06 05	Other batteries and accumulators (Limited to Lithium-ion Batteries or components parts)
19 10 05*	Other fractions containing dangerous substances (code used as battery shred).
19 10 06	Other fractions other than those mentioned in 19 10 05 (code used as battery shred).
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances (code used as battery shred).
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (code used as battery shred).
20 01 33*	Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries (limited to lithium-ion Batteries or components parts)
20 01 34	batteries and accumulators other than those mentioned in 20 01 33 (limited to Lithium-ion Batteries or components parts)
20 01 35*	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (limited to equipment containing Lithium-ion Batteries or components parts)
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 (limited to equipment containing Lithium-ion Batteries or components parts)

Table 3-2 Wastes Accepted for Transfer only

EWC Code	EWC Code Description
16 06 01*	lead batteries
16 06 02*	Ni-Cd batteries
16 06 03*	mercury-containing batteries
16 06 04	alkaline batteries (except 16 06 03)
20 01 21	Fluorescent tubes and other mercury containing wastes

Note: List includes permitted waste types for battery treatment activity only For full list of wastes, see Environmental Permit (reference: EPR/XP3092NX).

3.3 Operating Hours

The process will operate Monday to Friday 07:00 to 17:00.

Waste will be accepted Monday to Friday 07:00 to 15:30.

3.4 Process Availability

The plant will be designed to a target availability of >85%.

4.0 Detailed Process Description

4.1 Waste Battery, Reception & Storage

Waste acceptance, rejection and dispatch procedures are detailed in IMS - Duty of Care. Procedures associated with hazardous waste are detailed in IMS – Hazardous Waste.

Waste accepted at the site will include mainly lithium-ion industrial battery packs and lithium-ion battery materials from their manufacture. However, batteries of different chemistries will also be accepted for bulking up for further transport to third party recyclers. Batteries may also be accepted for re-use.

A battery risk assessment form is completed as part of the initial sales enquiry process. Where required, SUEZ undertake further checks, obtain additional information and undertake an inspection prior to transport to site. The sales enquiry process will determine if lithium-ion batteries accepted at the site will be suitable for reuse, or whether they will be treated.

Lithium-ion, lithium metal and lead acid batteries are classed as a Dangerous Good and will be consigned and moved in accordance with ADR 2025 (Alternative Dispute Resolution or Agreement concerning the International Carriage of Dangerous Goods by Road) (e.g. UN3480 Lithium ion Batteries, UN3481 Lithium ion Batteries Contained in Equipment, UN3090 Lithium Metal Batteries, UN3091 Lithium Metal Batteries Contained in Equipment, UN2794 Batteries Wet, Filled with Acid).

Lithium-ion batteries and lithium-ion battery materials from manufacture arriving on site will be packed in UN approved cases. Pre-shredded material will arrive in UN approved packaging e.g. closed flexible intermediate bulk containers (FIBCs). All batteries and materials will be logged and tracked from acceptance through to which treatment output container they are stored in for onward recovery.

The vehicles arriving on site containing waste will be directed (via signage) around the site and kept separate from other site traffic.

All waste will be weighed on receipt via the weighbridge (or more sensitive scales where batteries arrive in small volumes). Vehicles will normally be unloaded in the external yard. All loads will be visually inspected on site as the waste is offloaded from the delivering vehicle.

Upon arrival at the site, lithium-ion batteries are visually checked to ensure they are as described during pre-acceptance checks and scanned with a handheld thermal imaging camera.

4.1.1 Unloading Waste

Battery packs that pass waste acceptance and thermal imaging checks (i.e. in the expected condition and do not exceed ambient temperature) are unloaded into temperature-controlled ISO containers using a forklift truck. All other battery waste is unloaded using a forklift truck into the appropriate container or waste storage area.

All areas internal and external to the site which are used by visiting traffic are constructed from impermeable concrete surface.

Visiting drivers are required to inspect their vehicles before exiting the transfer station to ensure there is no debris on the body/container doors/openings, wheels, nuts or other parts of the vehicle.

Daily inspections of the site building and external areas are undertaken to check for leaks and spillages to ensure that any leaks and spillages identified are contained within the site.

4.1.2 Batteries of Concern

Batteries accepted at the site may not arrive in the anticipated condition and may need to be subject to alternative unloading procedures. These batteries of concern are subject to a dynamic risk assessment in line with the site's Standard Operating Procedures (SOPs).

Where safe, batteries of concern can be immediately discharged with regenerative power discharge equipment within the container located outside the building.

Where safe to handle, batteries that cannot be discharged with regenerative discharge equipment (e.g. damaged and defective batteries) will be quarantined before being sent to the electrochemical discharge area for submersion in a salt solution.

There is also an emergency quench tank in close proximity to the site building for immediate emersion.

Batteries not safe to handle will be subject to dynamic risk assessment in accordance with the site's SOPs, which could include actions like deploying appropriate fire extinguishers, covering with a fire blanket if safe to do so, or evacuation of the affected area. The emergency services will be called as appropriate and where necessary, procedures in the Fire Prevention Plan will be followed.

4.1.3 Battery Storage

Once acceptance checks have been completed, lithium-ion batteries will be stored on site in dedicated containers. Lithium-ion batteries will be stored separately from all other battery types on site in temperature-controlled ISO containers equipped with a fire detection system which is capable of being flooded with water should thermal runway occur. The ISO containers will be separated by 6 meters to act as a fire break. Containers will be vented and fitted with temperature control units that will maintain a safe temperature for battery storage. Manual thermal imaging checks will be undertaken twice a day.

Battery materials will also be stored in ISO containers.

Batteries of other chemistries (i.e. lead batteries, Ni-Cd batteries, mercury-containing batteries, alkaline batteries) and fluorescent tubes will be stored in dedicated sealed containers.

Batteries and battery materials are stored with the aim of ensuring that different types of waste are stored separately to ensure they can be reused or recovered more easily, and transfer notes can be completed correctly. All wastes delivered and accepted to the site are directed to specific areas for storage (or treatment prior to storage). There will be no mixing of different waste types.

All wastes on site are stored safely and securely using suitable buildings and/or containers. Where wastes are stored in containers they are labelled correctly and covers are utilised where possible to prevent litter and rainfall infiltration and the potential for contaminated surface water run-off.

Batteries, battery materials and treatment outputs are stored in line with the controls as set out in the site Waste Storage Plan. Site layout plan detailing the location of the waste storage areas on site is included in the Site Infrastructure plans (Sgl-LITH-LAY-0625-01).

No waste types are stored on site for longer than 6 months.

The key control at site to ensure wastes are stored for the minimum timescales is the use of digital quick response (QR) codes to log and track all lithium-ion batteries from acceptance to dispatch. Materials are handled and removed from site in order of receipt ensuring they do not exceed their maximum storage times.

Daily inspections are undertaken at the waste storage areas. Inspections will include checks for any leaks and spillages and an assessment of pests, odour, dust, litter and noise.

4.1.4 Waste Treatment

Treatment on site is limited to the manual and mechanical treatment of lithium-ion batteries and lithium-ion battery materials only.

4.1.5 Re-Use

Battery packs which have been identified as suitable for re-use during pre-acceptance discussions will be repackaged and sent for onward re-use.

Modules identified for re-use are repacked in accordance with ADR 2025 requirements and stored in temperature-controlled ISO containers prior to being shipped to European partners under approved Trans Frontier Shipment Licences.

Modules subsequently identified as not suitable for re-use following acceptance at the site may be diverted to treatment in agreement with the customer or will be otherwise returned to the customer.

4.1.6 Quarantine

Staff will carry out inspection of the batteries on delivery. Batteries that have been identified as unsafe to discharge with regenerative discharge equipment (e.g. damaged and defective batteries) will be quarantined. The site benefits from a dedicated quarantine area in the yard outside the site building, comprising a bay enclosed on 3 sides by legio blocks. Quarantined waste will be kept segregated from all other waste. The site also benefits from a large yard area that can be utilised for the establishment of temporary quarantine areas, as needed. Quarantined lithium-ion batteries will be subject to the electrochemical discharge process, where they will be submerged in a salt solution in covered open IBCs stored on bunded pallets. Discharge by submersion takes up to 4 weeks, dependant on battery pack size and state of charge. A 1200l quench tank is also present in close proximity to the site building e.g. in case of batteries requiring immediate emersion. Records will be kept of any rejected or quarantined waste. Any non-conforming waste accepted on site will also be quarantined and removed from site as soon as possible, within 24 hours of receipt.

4.2 Discharging of Batteries

Batteries which have been identified as suitable for recycling and treatment will be discharged. Visual and temperature checks are undertaken on each battery pack before being discharged.

If there are no issues identified during visual and temperature checks, batteries are discharged using a regenerative power supply in the designated ISO container. When the discharge is complete, the unit is checked for compliance by one of the trained and authorised technicians who fits a jumper lead between the positive and negative terminals on each battery to cause a short-circuit and stop any potential chemical recharge (voltage creep).

Lithium-ion batteries which are not suitable for discharge by bidirectional power supply will be subject to electrochemical discharge by submersion in a salt solution. Batteries are placed into open IBCs containing solution, which are stored undercover on bunded pallets.

Discharge by submersion takes up to 4 weeks, dependent on battery pack size and state of charge.

Batteries identified as defective during waste acceptance will be quarantined before being sent for electrochemical discharge by submersion. There is also an emergency quench tank in close proximity to the site building for immediate emersion.

4.3 Battery Pack Dismantling

Fully discharged battery packs will be moved into the workshop in the main building where they are dismantled by trained, competent and authorised technicians in accordance with the site's SOPs.

Discharged batteries are dismantled manually to a modular level at designated disassembly stations within the site building.

Casing materials including hard plastics, copper bus bars and cabling are sorted into separate containers. The resulting battery modules are sent for further treatment by shredding.

4.4 Battery Shredding

Once discharged and dismantled batteries are kept for a short observation period and then shredded or placed in the temperature controlled ISO containers pending treatment.

All batteries discharged and dismantled on site will be subject to treatment by shredding. Lithium-ion battery materials from manufacturing processes will also be shredded. Pre-shredded lithium-ion batteries will be inputted directly to the sorting and separation stage.

The shredding of lithium-ion batteries and lithium-ion battery materials takes place inside the site building within an area benefitting from sealed drainage using a fixed shredding plant specifically designed and commissioned for the mechanical treatment of lithium-ion batteries. lithium-ion batteries and lithium-ion battery materials enter the shredding plant via a gravity conveyor belt. No personnel are located next to the shredder plant when in operation.

The shredder is fitted with dust extraction management including a purpose-built Local Exhaust Ventilation (LEV) system with abatement provided by a baghouse filter and carbon filters.

4.5 Sorting and Separation

Immediately following shredding, the outputs from the shredding process will be separated into different fractions using a zig-zag density separator, turbo mill and SRV shaker/ screen. At this stage in the process, pre-shredded lithium-ion batteries may also be introduced to the process via a conveyor which by-passes the shredder.

The zig-zag density separator separates the output of the shredder into a heavy fraction and light fraction. The heavy fraction mainly comprises case metal and plastic, which is collected for storage and transfer only and not subject to further treatment. The light fraction comprises battery cell materials including the anode and cathode black mass, which is diverted directly to the turbo mill.

The turbo mill delaminates anode and cathode foils and refines the battery cell materials into a finer particle size, allowing their separation from remaining larger particles comprising mainly light plastics.

The outputs of the turbo mill are directed to the SRV shaker/ screen, which removes the remaining larger particles (>3mm plastics) which are compacted using a press in a briquetter. The finer particles are graded into a 0 - 250µm fraction consisting of black mass, a 250 - 500µm fraction consisting of a courser black mass grade and a 500µm - 3mm fraction consisting of copper and aluminium residues.

All parts of the sorting and separation plant benefit from dust extraction management utilising a second LEV system. The LEV system is fitted with a baghouse filter. Material captured by the baghouse (e.g. black mass and light plastics) is collected, then directed to and recovered using a smaller secondary SRV screen, sorting into a 0 - 250µm fraction consisting of black mass, and light plastics which are compacted into the briquetter.

All equipment will be checked and serviced in line with routine maintenance procedures and the manufacturers recommendations.

4.6 Dust Management

Battery treatment activities with the potential to generate dust are undertaken within the site's building, preventing the escape of fugitive emissions of dust.

The whole treatment plant benefits from dust extraction management comprising two separate purpose-built LEV systems which negatively extract air from the processes.

The first LEV serves the shredder, for which dust abatement is provided by baghouse filter and collection unit in addition to carbon filters, which are situated outside of the building.

The second LEV system serves the sorting plant and utilises a baghouse filter situated inside the building, the contents of which are captured for further treatment to collect valuable outputs.

Both systems effectively minimise the emission of fine particles. Treatment can only take place when the LEV extraction systems are operational.

Regular sweeping of internal and external areas is carried out to prevent build-up of dust on site surfaces.

Wastes and treatment outputs with the potential to generate dust are stored in appropriate enclosed containers preventing any emissions.

In the unlikely event excessive levels of dust are identified external to the site building, then the use of water mist sprays or manual watering with a hose will be used as necessary.

4.7 Process Effluent

The operation does not generate process effluent.

4.8 Storage of Waste Outputs Pending Transfer

The site infrastructure plan (Sgl-LITH-LAY-0625-01) details the location of the waste storage areas, outputs storage and containers on site.

Aluminium battery trays from disassembly are stored in the northern yard in 40 yard ROROs.

Other outputs from dismantling (hard plastics, copper bus bars and cabling) are stored in separate containers inside the main building. Once full, these are covered and moved to the northern external yard.

Outputs from the zig-zag density separator (case metal and plastics) will be collected and stored in separate flexible intermediate bulk containers (FIBCs). Once full, these will be stored within an ISO container in the northern external yard.

Outputs from the SRV shaker/ screen (i.e. black mass, and copper and aluminium) will be collected and stored in UN approved packaging. Compacted plastic will be captured and in an FIBC under the treatment plant. Once full, these will be stored within an ISO container in the northern external yard.

The projected outputs from the process are summarised in Table 4-1 along with Onward Management.

Table 4-1 Solid Waste Generation

Material	Composition	Output (tpa)	Onward Management
Black mass	40%	8,000	Output to hydrometallurgical treatment
Aluminium	25%	5,000	Scrap metal recycling
Copper	10%	2,000	Scrap metal recycling
Plastic	6%	1,200	Energy from Waste
Hard Plastic	2.5%	500	Plastic recycling
Other Materials	16.5%	3,300	Scrap metal recycling
Total		20,000	

4.9 Utilities

The proposed fixed plant at the site is expected to consume approximately 35MWh of energy annually (Based on plant rated at 170 kWh). The total annual energy consumption for the entire site is approximately 41.6MWh of energy annually (Based on energy rated at site of 200 kWh).

There are minimal amounts of water used as part of the process. 6000 litres of water is stored in a 12,000 litre capacity quench tank. 5000 litres of water is stored in 10 x 1000 litre topless IBC's for electrochemical discharge.

Water is used as the fire-fighting agent in the shredding stage. This is programmed to 2.5 second bursts of spray at a time on trigger. The system is fed from a pressurised 400ltr tank. It is expected the water use from this will be minimal.

5.0 Assessment of BAT & Appropriate Measures

The following section provides an assessment of the pollution prevention and control techniques proposed for the facility against the Best Available Techniques conclusions (BATc) and appropriate measures relevant to the activities to be carried out. This includes:

- Best Available Techniques Reference (BREF) Document for Waste Treatment;
- Treating metal waste in shredders: appropriate measures for permitted facilities;
- Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities; and
- Chemical waste: appropriate measures for permitted facilities;
- Waste batteries – appropriate measures for permitted facilities (Early pre-consultation draft)

5.1 Waste Treatment BREF

Indicative BAT for these activities in set out in the revised Waste Treatment BREF (the BREF).[1]

This section assesses the techniques proposed for the site against the relevant BAT Conclusions (BATc) within the BREF, which include the following:

- General requirements (BAT 1 – BAT 24); and
- Mechanical Treatment of Waste (BAT 25 – BAT 32); and
- Physico-Chemical Treatment of Waste (BAT 40 – BAT 41)

Appendix A BATc for Waste Management provides a description of the techniques proposed at the site and how these meet the requirements of each of the BAT conclusions listed above.

5.2 Treating Waste in Metal Shredder

The EA published appropriate measures guidance for permitted activities that are relevant to regulated facilities with an environmental permit to treat metal waste in shredders.[2]

This section assesses the techniques proposed for the site against the relevant appropriate measures within the guidance document, which include the following:

- *General management (appropriate measures 2.1 – 2.6);*
- *Waste pre-acceptance, acceptance and tracking (appropriate measures 3.1 – 3.3);*
- *Waste storage, segregation and handling (appropriate measures 4.1 – 4.4);*
- *Waste treatment (appropriate measures 5.1 – 5.6);*
- *Emissions control (appropriate measures 6.1 – 6.5);*
- *Emissions monitoring and limits (appropriate measures 7.1 – 7.3); and*
- *Process efficiency (appropriate measures 8.1 – 8.4)*

Appendix B demonstrates how pollution prevention and control techniques proposed for the facility will meet relevant appropriate measures in the technical guidance document.

5.3 WEEE Treatment

The EA published appropriate measures guidance for permitted activities that are relevant to regulated facilities with an environmental permit to treat or transfer all types of WEEE.[3] The EA uses the term ‘appropriate measures’ to cover best available techniques (BAT) for waste installations facilities, best available treatment recovery and recycling techniques (BATRRT) for the treatment of WEEE and ‘proper treatment’ as referred to by the WEEE Directive.

There is a large degree of overlap between the appropriate measures for facilities to treat metal waste in shredders and those relevant to treat or transfer all types of WEEE. Therefore, this section assesses the techniques proposed for the site against the relevant

[1] EC Joint Research Centre Best Available Techniques (BAT) Reference Document for Waste Treatment, 2018, EUR 29362 EN

[2] https://www.gov.uk/guidance/treating-metal-waste-in-shredders-appropriate-measures-for-permitted-facilities

[3] Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities - Guidance - GOV.UK (www.gov.uk)

appropriate measures within the WEEE technical guidance document that are in addition to those listed in Appendix B (metal waste in shredders), and only include the following:

- *Waste storage (4.1 general waste storage);*
- *Waste treatment (5.2 general waste treatment, 5.4 process monitoring and 5.12 post shredding treatment); and*
- *Emissions control (only 6.4 point source emissions to water and sewer).*

Appendix C Appropriate Measures for WEEE Treatment demonstrates how pollution prevention and control techniques proposed for the facility will meet the above relevant appropriate measures in the technical guidance document.

5.4 Chemical Waste

The EA published appropriate measures guidance for permitted activities that are relevant to regulated facilities with an environmental permit to treat or transfer chemical waste.[4]

There is a large degree of overlap between the appropriate measures for facilities to treat metal waste in shredders and those relevant to treat or transfer chemical waste. Therefore, this section assesses the techniques proposed for the site against the relevant appropriate measures within the chemical waste technical guidance document that are in addition to those listed in Appendix B (metal waste in shredders) and Appendix C (WEEE treatment), and only include the following:

- *Waste storage, segregation and handling (1 to 40);*
- *Waste treatment (5.1 general waste treatment); and*
- *Emissions control 6.2 fugitive emissions to air (including odour) and 6.4 point source emissions to water*

Appendix D Appropriate Measures for Chemical Waste demonstrates how pollution prevention and control techniques proposed for the facility will meet the above relevant appropriate measures in the technical guidance document

5.5 Waste Batteries

This early pre-consultation draft explains the standards (appropriate measures) that are relevant to operators of regulated facilities with an environmental permit to treat or transfer waste batteries, including battery packs, modules and cells, and similar wastes from battery manufacturers (for example, dry or wet battery cells).

There is a large degree of overlap with the previously mentioned appropriate measures such as general management, waste pre-acceptance, acceptance and tracking and waste storage, segregation and handling. Therefore, this section assesses the techniques proposed for the site against the relevant appropriate measures within the Waste Batteries technical guidance document that are in addition to those listed in Appendix B (metal waste in shredders), Appendix C Appropriate Measures for WEEE Treatment (WEEE treatment) and Appendix D Appropriate Measures for Chemical Waste (chemical Waste).

Appendix E demonstrates how pollution prevention and control techniques proposed for the facility will meet the above relevant appropriate measures in the technical guidance document

[4] https://www.gov.uk/guidance/chemical-waste-appropriate-measures-for-permitted-facilities

6.0 Infrastructure and Equipment Inventory

6.1 Engineered Containment System

6.1.1 Surfacing

The operational areas of the site comprise impermeable concrete are constructed to a sufficient standard to withstand the combined weight of the stored wastes and the operational vehicles using the facility. Battery dismantling, shredding and outputs separation will be undertaken within the enclosed building.

The concrete surfacing forms an impermeable barrier to prevent the release of liquids into the underlying land and/or groundwater and is constructed with suitable engineered gradients to direct all rainfall runoff to the appropriate drainage system.

6.1.2 Sub-Surface Structures

The precise locations of subsurface drains, pipework and interceptors will be established and recorded, and relevant documentation maintained in the Site office. An inspection and maintenance programme for all subsurface structures will be followed and records will be maintained by the Site Manager.

6.1.3 Management and Operational Techniques

Containment engineering will prevent the release of potentially polluting liquids to surface water and groundwater. Plant operatives will undergo awareness training to ensure a full understanding of the containment engineering which will minimise the environmental impact of the site. The engineered containment system will be subject to routine visual inspection. Identified breaches in the engineered containment will be remedied to ensure continued integrity of the facility, and to prevent pollution of surface or groundwater. Records of inspection and maintenance will be maintained by the Site Manager.

6.2 Engineered Drainage and Surface Water Management System

The site benefits from impermeable surfacing and sealed drainage: all processing and feedstock storage areas will be underlain by concrete surfacing to capture and prevent percolation of potentially contaminated water into the ground.

The shredding of batteries and battery materials takes place inside the site building on impermeable surface.

Externally, the drainage system directs rainfall run-off from the northern area of the site to the sealed surface water lagoon. The lagoon is monitored daily to ensure content level, removal of debris and integrity of the surrounding fence.

All surface water run-off from the external impermeable surface in the yard area in front of the site building is directed to the interceptor (9000 litres) through gullies and drains. This runoff is collected in a Class 1 Full retention Interceptor and cellular attenuation tank before discharging to soakaway. The system is equipped with a penstock valve to allow any contamination to be contained in the event of an incident.

The integrity of the impermeable surface will be inspected by site staff on at least a weekly basis, as required by SUEZ's ISO 14001 certified Integrated Management System (IMS), and any structural deficiencies will be reported immediately to the Site Manager. Repairs will be initiated as soon as practicable.

Solid matter accumulating in the interceptors and gullies will be removed as and when required by a suitably experienced and registered waste disposal contractor. As a minimum the site interceptors will be inspected every 6 months and cleaned as necessary.

The discharge point to the sealed surface water lagoon are illustrated (Sgl-LITH-DRN-0625-01)

6.3 Plant and Equipment

The key items of process plant and equipment that will be used at the site are detailed below. All items of plant and equipment will be maintained in accordance with the manufacturer's recommendations.

The key components will include, but not be limited to:

6.3.1 Fixed Plant

The following fixed plant is held on site:

- Feed and exit conveyor belts.
- Four shaft Untha Shredder with 15-12mm screen
- ATEX rated De-dust LEV with bag house filter and passive Activated Carbon filter.
- Trennso Technik Segregation line Including Feed hopper/screw augers, Zig-Zag Density Segregation, Ares Turbo Mill, SRV 4 deck screen, Dedust baghouse filter leading to second SRV filter

6.3.2 Mobile Plant

The following items of mobile plant are held on site:

- Forklift Trucks; and
- Cherry Picker.

6.4 Site Security

The site is accessed via Sidegate Lane. The site entrance is secured outside operational hours with 1.8m double metal security gates.

The site is located within the boundaries of Sidegate Lane Landfill site and as such is covered by security measures already in place at the landfill site.

The boundary of the site will be securely fenced to prevent unauthorised access. A regular inspection of the site fencing and gates will be carried out to identify any maintenance requirements

A CCTV system is installed to act as a further deterrent and to record any unauthorised activity. In the event of unauthorised access and/or vandalism, the matter will be reported to the TCM responsible for the site who will then take the appropriate action and record the incident in the site diary.

All visitors and contractors are required to register in the visitor's book and sign out again on exit and are escorted by a member of staff. This minimises the risk of unauthorised visitors being present at the site.

Any breach in security would be reported to the Site Manager (or in their absence, their deputy) and the emergency services as appropriate.

Site boundary checks are completed weekly to ensure site security is maintained. Any defects or damage which may compromise the integrity of the enclosure will be made secure by temporary repair by the end of the working day. Permanent repairs will be affected as soon as practicable. All inspections and any defects, damage, or repairs will be recorded by a site operative.

In the event of a breach of security at the site, the cause will be investigated, and appropriate mitigation measures implemented, such as repair of security infrastructure, and/or additional deterrents. This will be recorded in the site diary. Records maintained include inspections and maintenance of perimeter fencing and gates, doors and locks, breaches of security, investigations and actions taken.

7.0 Raw Materials

7.1 Inventory of Raw Materials

The raw materials that will be used on site are detailed in Table 7-1.

A Control of Substances Hazardous to Health (COSHH) assessment will be undertaken prior to the use of chemicals, and if the chemical is found to present a hazard to health, it will be added to the COSHH inventory and appropriate safeguards implemented.

Safety Data Sheets (SDS) for any potentially hazardous materials or chemicals will be kept on site together with the COSHH register. The SDS will give information on how chemicals should be handled, stored and disposed of, and what to do in the event of an accident.

Table 7-1 Principle Raw Materials

Material	Estimated Consumption (tonnes per annum)	Site Storage
TFR Cleaner	0.1	25ltrs in Stores
Grease Lubrication	0.1	400ml in Stores
Rock Salt	0.6	100kg in Stores
Carbon Filter	To be determined following testing	N/A

7.2 Raw Materials Selection

Wherever possible, raw materials will be selected that minimise environmental impact. Consideration will be given to such factors as degradability, bioaccumulation potential, product contamination and toxicity. Reviews will be frequently undertaken to ensure that all raw materials are appropriate for use, that consumption is optimised and that opportunities for reduction and improvements are implemented through an action plan.

Alternative raw materials will be evaluated for their environmental impact on an on-going basis and, where there is no overriding quality requirement substitution will be given appropriate consideration. The on-going programme of professional and technical development for all site personnel will ensure awareness of new developments in product availability and their implication.

7.2.1 Waste Minimisation Audit (minimising the use of raw materials)

The overall objective of the site is to maximise the recovery of useful products from the waste feedstocks, thereby moving waste up the hierarchy and minimising the volume sent to landfill or Energy from Waste facilities for disposal. Notwithstanding this, there will be waste produced by the processes undertaken at the site.

Waste generation at the site will be reviewed annually and where necessary an appropriate improvement programme will be implemented.

7.2.2 Water Use

Water is not used in the mechanical treatment process at the site. 6000ltrs water is stored in a 12,000ltr capacity quench tank. 5000ltrs water is stored in 10 x 1000ltr topless IBCs for Electrochemical discharge.

Water is used as the fire-fighting agent in the shredding stage. This is programmed to 2.5 second bursts of spray at a time on trigger. The system is fed from a pressurised 400ltr tank. It is expected the water use from this will be minimal.

8.0 Waste Acceptance, Recovery or Disposal

8.1 Waste Pre-Acceptance

SUEZ will have waste pre-acceptance checks and feedstock specifications in place with suppliers to ensure that the waste has been characterised and classified appropriately before consignment to the site. These will be risk-based and in accordance with appropriate measures guidance for the activities to be operated at the facility. Section Waste Battery, Reception & Storage details waste acceptance procedures at the site.

8.2 Waste Acceptance

The wastes shown in Table 3-1 are accepted for treatment at the Site and can also be accepted on site for bulking up for further transport to a third party recycler e.g. as a contingency measure. Waste shown in Table 3-2 will only be accepted for bulking up for further transport to a third party recycler.

No other waste will be accepted.

Waste acceptance procedures are carried out in accordance with the appropriate measures for the activities operated at the facility.

A waste tracking system is employed by SUEZ to track waste intended for receipt at the site. This is linked with tracking of capacity at the processing facility to ensure that over-accumulation of waste does not occur. The Site Manager will ensure that the following procedures are carried out as part of waste acceptance procedures:

- Waste carriers are selected and checks carried out that they have a valid carrier's licence;
- All deliveries to the site are pre-booked;
- Consignment notes are completed;
- Checks are carried out to ensure that capacity is available for storage at the facility;
- Loads are weighed; and
- Records are kept of loads accepted and of any rejected (i.e. non-conforming) loads.

8.3 Waste Recovery & Disposal

Waste present at the site falls into four categories:

- Waste lithium-ion batteries and lithium-ion battery materials delivered to site for processing;
- Small volumes of other battery types and fluorescent tubes accepted for transfer only;
- Processed waste lithium-ion battery material destined for recovery off-site; and
- Incidental waste generated from on-site processes.

The operations' main objective is to recover materials from waste lithium-ion batteries. As such, the process is designed to maximise the product yield and minimise residual waste. In addition, the activities at the site are designed to prevent, or where that is not practicable, reduce any additional wastes generated.

All solid waste will be managed and disposed or recovered in accordance with the Duty of Care and the Environmental Permitting Regulations. All waste recovered or generated during the processes undertaken at the site will be removed to a suitable licensed processing or disposal site.

The categories of waste, storage arrangement on site, and recovery/disposal options are detailed in Table 8-1 below.

Table 8-1 Waste Storage, Recovery and Disposal

Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site
External Storage (Northern External Yard)					
Lithium-ion batteries	ISO Container Storage Area (1-6)	Stored in UN approved packaging within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.4m (H) (66m^3 internal volume)	33m^3 (Maximum half full)	6 months
Lithium-ion battery material	ISO Container Storage Area (1-6)	Stored in UN approved packaging within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.4m (H) (66m^3 internal volume)	33m^3 (Maximum half full)	6 months
Pre-shredded lithium-ion battery	ISO Container Storage Area (1-6)	Sealed FIBCs within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.4m (H) (66m^3 internal volume)	33m^3 (Maximum half full)	6 months
Aluminium (disassembled case metals)	External yard (Area 9)	40yd RORO Skip	**Container size:** 5.8m (L) x 2.4m (W) x 2.7m (H) 30m^3 approximate volume	30m^3	6 months
Hard plastics	IBC Container Storage area (Area 10)	Stored in Covered IBC	**Container size:** 1m (L) x 1m (W) x 1m (H)	1m^3 x 12	6 months

Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site
Copper bus bars	IBC Container Storage area (Area 10)	Stored in Covered IBCs	**Container size:** 1m (L) x 1m (W) x 1m (H)	$1m^3$ x 12	6 months
Cables/wiring	IBC Container Storage area (Area10)	Stored in Covered IBCs	**Container size:** 1m (L) x 1m (W) x 1m (H)	$1m^3$ x 12	6 months
Shredded Case metal and plastics (output from density separator)	ISO Container Storage Area (7and 8)	Stored in $1m^3$ FIBCs within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.4m (H) ($66m^3$ internal volume)	$33m^3$ (Maximum half full)	6 months
Black mass (0- 250µm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.6m (H) ($66m^3$ internal volume)	$33m^3$ (Maximum half full)	6 months
Black mass (250 - 500µm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.6m (H) ($66m^3$ internal volume)	$33m^3$ (Maximum half full)	6 months
Copper and aluminium (0.5 - 3mm fraction)	ISO Container Storage Area (7 and 8)	Stored in UN approved packaging (205l drums) within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.6m (H) ($66m^3$ internal volume)	$33m^3$ (Maximum half full)	6 months

Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site
Compacted plastic outputs	ISO Container Storage Area (7 and 8)	Stored in FIBCs within 40ft ISO Containers	**Container size:** 12.2m (L) x 2.4m (W) x 2.6m (H) ($66m^3$ internal volume)	$33m^3$ (Maximum half full)	6 months
Batteries (non-lithium-ion)	External yard (Area 11)	Stored in battery container within 20ft ISO container	**Container size**: 5.9m (L) x 2.4m (W) x 2.6m (H) ($33m^3$ internal volume)	Maximum $5m^3$	6 months
Fluorescent tubes	External yard (Area 12)	Specialised container	**Container size**: 2.5m (L) x 1.2m (W) x 1.2m (H)	$3.6m^3$	6 Months
Internal Storage (Site Building)					
Hard plastics	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	$1m^3$ x 5	6 months
Copper bus bars	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	$1m^3$ x 5	6 months
Cables	Dismantling stations (Area 13)	Stored in IBCs	1m (L) x 1m (W) x 1m (H)	$1m^3$ x 5	6 months

Waste Type	Location within Site	Storage Detail	Bay or Container Dimensions	Approximate Volume of Waste (m3)	Maximum Storage Time on Site
Case metal and plastics	Density separator output area (Area 14)	Stored in FIBCs	1m (L) x 1m (W) x 1m (H)	1m^3	6 months
Black mass (0 - 250µm fraction)	Shaker/screen output area (Area 15 & 16)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m^3)	6 months
Black mass (250 - 500µm fraction)	Shaker/screen output area (Area 15)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m^3)	6 months
Black mass (250 - 500µm fraction)	Shaker/screen output area (Area 15)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m^3)	6 months
Copper and aluminium (0.5 - 3mm fraction)	Shaker/screen output area (Area 15)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m^3)	6 months
Compacted plastic outputs	Shaker/screen output area (Area 15 & 16)	Stored in 205l drum	0.6m (L) x 0.6m (W) x 0.9m (H)	205l (0.2m^3)	6 months

8.4 Waste Minimisation

The key methods of ensuring that waste minimisation occurs on site will be;

- Waste acceptance checks to ensure only compliant waste (i.e. Batteries and battery waste) is accepted;
- Working proactively with battery suppliers to manage any quality issues that may arise;
- The ongoing identification and implementation of waste prevention opportunities;
- The active participation and commitment of staff in all areas of the business; and
- Monitoring of materials usage and reporting against key performance measures.

SUEZ will take appropriate measures to ensure that;

- The waste hierarchy (referred to in Article 3 of the Waste Framework Directive) is applied in the generation of waste on site by the activities;
- Any waste generated by the activities is treated in accordance with the waste hierarchy; and
- Where disposal is necessary, as opposed to recovery, that it is undertaken in a manner which minimises its impact on the environment.

SUEZ will review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by the review. Waste production will be avoided wherever possible. Any waste produced on site will be recovered, unless there are instances whereby it is not technically or economically practicable to do so.

On an annual basis, SUEZ will complete a waste minimisation audit.

The audit will include;

- Waste produced at the site;
- Where the waste goes;
- If it can it be recovered or recycled;
- If it is being stored correctly on site;
- If duty of care requirements are being met; and
- Any further comments for future reference.

9.0 Energy

9.1 Energy Consumption

The proposed fixed plant at the site is expected to consume approximately 35MWh of energy annually (Based on plant rated at 170 kWh). The total annual energy consumption for the entire site is approximately 41.6MWh of energy annually (Based on energy rated at site of 200 kWh).

9.2 Energy Management Measures

A number of features have been incorporated within the design of the site in order to minimise energy use:

- Keeping shredder infeed stable;
- Insulation and containment of shredder;
- Low energy light fittings will be used where practicable;
- Category IE3 high efficiency electrical drive motors; and
- Use of variable speed drives.

To optimise energy efficiency, equipment will be maintained and serviced as required. Plant and equipment will be subject to regular maintenance to ensure it continues to operate at optimum energy efficiency and that energy consumption does not increase due to inefficient performance.

Energy use will be monitored and recorded and periodically reviewed to identify areas of improvement and to ensure that any inefficiency is investigated, and appropriate actions taken. Targets will be set for the purpose of reducing specific energy consumption kWh/t of waste processed.

Energy use and energy minimisation will be included within the management system for the control of resources. Within the management system the review process will identify energy use by source for the different site operations. The results will be used to identify potential measures for improving energy efficiency.

SUEZ will maintain and energy balance record with a breakdown of energy consumption by sub-processes and energy source.

Staff will undergo awareness training in energy efficient practices.

10.0 In Process Controls

10.1 Material Storage and Handling

Minimal number of raw materials are stored and used at the site. Arrangements for raw material storage are detailed in Section 7 and waste storage arrangements are details in Section 8 of this BATOT.

The storage procedures that will be implemented on site are considered to be best practice for the following reasons:

- Storage areas and maximum dimensions will be clearly marked;
- Procedures will be in place for the regular inspection and maintenance of storage areas with any repairs being undertaken as soon as is practicable;
- Storage tanks will be designed to be fit for purpose, considering the nature of the material to be stored and the required design life;
- Tanks will be fully quality assured and tested for leakage prior to commissioning;
- Liquid levels within all storage tanks will be continuously monitored which will alert the operator to high levels and operate interlocks. Independent high level switches will also be in place that act to switch off pumps if a high level is reached;
- Written records of all tanks will be kept, detailing:
  - Capacity;
  - Construction including materials;
  - Maintenance schedules and inspection results;
  - Fittings; and
  - Materials stored in the vessel.

10.2 Process Control Monitoring

The battery shredding, screening and separation processes will benefit from several process control features which will ensure robust control of the processes and prevent the development of abnormal operating conditions.

10.2.1 Process Control System

The plant is controlled from a central control system.

All control functions are accessed from the system and status of the plant is displayed graphically.

Safety alarms are displayed and acknowledged from the control system. The system retains historical alarm and instrumentation data for the purposes of analysis and trending. The information gathered from the process is visible remotely by authorised personnel from the control system via a web-based application.

10.3 Inspection, Maintenance and Monitoring

Daily inspections of the site infrastructure are undertaken in line with SUEZ IMS Procedure - Site Inspection, Audit & Reporting. Any required site and equipment maintenance is carried out in line with the manufacturer’s instructions.

Site inspections are recorded on the Daily/ Weekly QEMS checklist or the Vision App.

The daily inspections will include checks for the below key risks:

- Leaks and spillages
- Litter
- Dust/particulate matter
- Odour
- Noise
- Pests
- Fire

Monitoring will be undertaken as per the site Operations and Emissions Management Plan.

Monitoring and recording of conditions within the plant will be carried out on a continuous basis by the comprehensive network of sensors and instrumentation as discussed above and displayed via the process control system. This will enable continuous mapping of the process in order to ensure efficiency of the process.

11.0 Control of Noise

Battery treatment has the potential to generate noise; however this is undertaken inside a building and is not expected to generate noise levels that are deemed excessive.

The site building is fitted with roller shutter doors, which can be closed to further prevent the risk of noise escaping from the building e.g. during shredding and treatment.

The site staff will ensure that the delivery, treatment and loading of waste takes place in a controlled manner so that noise generation is kept to a minimum.

Increases in plant noise are often indicative of future mechanical failure, as such all relevant plant will be regularly and effectively maintained as set out in the Site and Equipment Maintenance Plan.

11.1 Noise Mitigation and Management Measures

The site Environmental Risk Assessment (1.3 Environmental Risk Assessment, June 2025) identifies in Table 3 the following noise mitigation and management measures:

Noise and vibration from site mobile plant and vehicles delivering waste to the site

- H&S Legislation is in place to ensure SUEZ protects its employees from the effects of noise.
- All noise generating activities will be confined to the operational hours that are specified within the planning permission with the exception of emergency repairs.
- The delivery and loading of waste will take place in a controlled manner to keep noise/vibration to a minimum.
- All plant will be regularly and effectively maintained to prevent noise/vibration increases indicative of potential mechanical failure.
- A maximum speed limit of 10mph is set for vehicles operating onsite. This will minimise the generation of excessive noise arising from higher vehicle speeds. Clear signage will be established across the site to reinforce the vehicle speed limit.

- Mobile plant onsite is fitted with ‘white noise’ reversing beacons which minimise the intrusive nature of the safety measure.
- Integrated Management System (IMS) site inspection check sheets include a daily requirement for site staff to qualitatively assess noise; if perceived to be excessive, measures will be taken to identify the source of any noise and take appropriate remedial action.
- All complaints received associated with noise will be recorded and investigated in line with company procedures.

Noise and vibration from physical waste treatment processes

- H&S Legislation is in place to ensure SUEZ protects its employees from the effects of noise.
- All noise generating activities will be confined to the operational hours that are stipulated within the planning permission with the exception of emergency repairs.
- Lithium-ion batteries and lithium-ion battery materials accepted at the site will be treated within the enclosed building, providing an effective barrier and preventing noise nuisance beyond the permit boundary. The building is fitted with roller shutter doors which are closed during operation to prevent noise from escaping.
- All waste treatment fixed plant will be regularly and effectively maintained to prevent noise/vibration increases indicative of potential mechanical failure.
- IMS site inspection checklist or Vision App include a daily requirement for site staff to qualitatively assess noise; if perceived to be excessive, measures will be taken to identify the noise and take appropriate remedial action.
- All complaints received associated with noise will be recorded and investigated in line with company procedures.

11.1.1 Operating Hours

Operational hours

- Monday to Friday 07:00 to 17:00

Waste acceptance

- Monday to Friday 07:00 to 15:30

11.1.2 Plant & Equipment Selection

Plant and equipment options with lower noise levels will be used wherever possible to ensure noise is kept to a minimum.

Plant and equipment will be maintained regularly to minimise noise resulting from deterioration and inefficient operation. If any items of plant are found to give rise to unacceptable noise levels, consideration will be given to their replacement with quieter designs. If equipment continues to generate unacceptable noise levels, consideration will be given to modification to incorporate noise suppression equipment or replacement components.

11.1.3 Management Measures

The Site Manager will be responsible for ensuring that nuisances arising from the site are minimised. All site personnel will be trained in the need to minimise site noise and will be responsible for monitoring and reporting excessive noise when carrying out their everyday duties.

11.1.4 Noise Action Plan

In the event that noise is found to be causing a problem, action will be taken to determine the source and to take remedial actions as follows:

- Shut down, replace, service or repair equipment to reduce noise levels; and
- Modify plant to incorporate noise suppression equipment.

  Records relating to the management and monitoring of noise will be maintained and include:
- Inspections undertaken;
- Noise problems (including date, time, duration, prevailing weather conditions and cause of the problem);
- Complaints received; and
- Corrective action taken and changes to operational procedures to prevent future occurrences.

12.0 Control of Odour

The Site Environmental Risk Assessment (1.3 Environmental Risk Assessment, June 2025) identified that the operation has an overall low risk of odour and no detailed management plan is required.

The Site Environmental Risk Assessment identifies in Table 3 the following noise mitigation and management measures:

12.1 Potential odour Sources

Potential sources have been identified from the following:

- Odour from storage of waste and treatment outputs
- Odour from the storage of waste on site during contingencies such as mechanical failure
- Odour arising from the treatment of waste

12.2 Potential Odour Exposure

The site is located approximate 3.5km northeast of the centre of Wellingborough, North Northamptonshire. The site is adjacent to the closed Sidegate Lane Landfill. The land use surrounding the site predominantly comprises agricultural land, with some sparse industrial buildings. The nearest residential receptor is Ryebury Farm approximately 200m west of the site.

The site is not located within an Air Quality Management Area.

In the event that odours are detected, investigations will be undertaken to determine the cause and appropriate remedial action.

The Site Manager will be responsible for implementing the following risk management measures:

Odour from storage of waste and treatment outputs

- No putrescible waste is accepted on the site, therefore there is a very low potential for odours from waste storage. It is unlikely that odour will be generated as part of the process. In any case the treatment operation is undertaken within the site's building.
- Lithium-ion batteries and lithium-ion battery materials will be stored in ISO containers. Batteries of other chemistries and fluorescent tubes will be stored in dedicated sealed containers. Waste acceptance checks are carried out to ensure odorous wastes are not accepted.
- In the unlikely event odorous wastes are identified at any stage, they will be prioritised for removal from site as soon as practicable.
- Odour checks will be undertaken by site management in accordance with the daily and weekly checklist. The records of the daily and weekly checks are kept on site.

Odour from the storage of waste on site during contingencies such as mechanical breakdown

- As Above.
- Waste awaiting treatment includes lithium-ion batteries and lithium-ion battery materials, which have a negligible potential to produce odour in storage.

Odour arising from the treatment of waste

- Only lithium- ion batteries and lithium-ion battery materials will be treated on site. Shredding has the potential to release odour from batteries. Batteries will be treated inside the site building only, limiting the risk of emissions of odour beyond the site boundary.
- Odour checks will be undertaken by site management in accordance with the daily and weekly checklist. The records of the daily and weekly checks are kept on site. All complaints received associated with odour will be recorded and investigated in line with company procedures.

13.0 Control of Emissions to Air

An Air Emissions Risk Assessment (AERA) (416.066034.00001_SUEZ Sidegate Lane_AERA_v1, June 25) is included in the application demonstrating point source emissions will not cause harm to human health or the environment.

13.1 Point Source Emissions

The whole treatment plant utilises a dust extraction management system, comprising two separate purpose-built Local Exhaust Ventilation (LEV) systems which negatively extract air from the processes, creating two point-source emissions to air.

The first LEV system serves the shredder; the second LEV system serves the sorting plant. For the first LEV serving the shredder, dust abatement is provided by ATEX rated bag filter baghouse filter and a secondary Volatile Organic Compound (VOC) carbon filter, which are situated outside of the building.

The second LEV system serves the sorting plant, also extracting air from the process to a separate external LEV stack. It utilises a second baghouse filter situated inside the building, the contents of which are captured for further treatment to collect valuable outputs.

Both systems effectively minimise the emission of fine particles. Treatment can only take place when the LEV extraction systems are operational.

The LEV systems will form 2 extract points with emissions passing through an ATEX rated bag filter. Emissions from the LEV system serving the shredder will pass through a secondary Volatile Organic Compound (VOC) carbon filter. The LEV systems will emit, post filtration, via two stacks with a height 1m above the apex of the building roof.

The AERA has quantified and assessed the potential air quality impacts associated with combustion emissions from the site using Environment Agency approved techniques against published standards for the protection of human health and designated ecological sites.

The AERA has followed Environment Agency (EA) guidance and used the AERMOD dispersion model to predict pollutant concentrations under worst-case operational scenarios.

The pollutants assessed included ammonia (NH_3), hydrogen chloride (HCl), hydrogen fluoride (HF), mercury (Hg), sulphur dioxide (SO_2), sulphuric acid (H_2SO_4), particulate matter (PM_{10} and $PM_{2.5}$), and volatile organic compounds (VOCs, as benzene).

The assessment compared predicted concentrations against Environmental Assessment Levels (EALs), Critical Levels (C_{Le}) and Critical Loads (C_{Lo}) and for both human and ecological receptors.

The results indicate that:

- Emissions of most pollutants are insignificant at all human receptor locations;
- SO_2 emissions exceed the 15-minute EAL offsite, but only in a limited area near the site boundary;
- No exceedances of EALs are predicted at existing residential receptors; and
- The predicted contributions to C_{Le} and C_{Lo} are considered to cause ‘no likely significant effects’ at the Upper Nene Valley, SPA, and ‘no significant pollution’ at Finedon Top Lodge Quarry LWS.

The AERA concludes that the proposed operations (in consideration of the specified extraction and abatement systems) will not result in unacceptable air quality impacts.

Table 13-1 summarises the proposed emission points to air, monitoring and emission limit values. Emissions monitoring and limits have been proposed for a substance where the AERA could not describe the process contribution as insignificant. The exception to this is for Total Particulate Matter which is proposed as an indicator for abatement system performance. The need for, frequency and emission limits associated with Dioxin-like Polychlorinated biphenyls (PCBs), Dioxins and Furans (PCDD/F), Brominated flame retardants (BFRs) and Metals and metalloids excluding mercury will be assessed as part of the proposed improvement condition discussed in Section 1.2 of the AERA once the plant is operational to enable emissions monitoring and dispersion modelling to be undertaken.

Table 13-1 Emissions Points to Air, Monitoring and Emission Limit Values

Reference	Source	Parameter	Limit (mg/m3)	Reference period	Monitoring frequency	Monitoring standard or method
A1	Shredder LEV	Total particulate matter	5	Average value of 3 consecutive measurements of at least 30 minutes each	6 monthly	EN 13284-1
		Total VOCs	30			EN 12619
		SO_2	150			EN 14791 or CEN TS 17021
		H_2SO_4	10			US EPA method 8
		Brominated flame retardants	To be determined by improvement condition	To be determined by improvement condition	To be determined by improvement condition	To be determined by improvement condition
		PCDD/F				
		Dioxin-like PCBs				
		As, Co, Cr, Cu, Mn, Pb, Sb, Se, Ti, V				
A2	Sorter LEV	Total particulate matter	5	Average value of 3 consecutive measurements of at least 30 minutes each	6 monthly	EN 13284-1
		Total VOCs	30			EN 12619
		SO_2	150			EN 14791 or CEN TS 17021
		H_2SO_4	10			US EPA method 8
		Brominated flame retardants	To be determined by improvement condition	To be determined by improvement condition	To be determined by improvement condition	To be determined by improvement condition
		PCDD/F				
		Dioxin-like PCBs				
		As, Co, Cr, Cu, Mn, Pb, Sb, Se, Ti, V				

14.0 Control of Dust and other fugitive emissions

14.1 Fugitive Emissions

Potential sources of dust and other fugitive emissions such as VOCs are associated with the shredding of waste battery material and subsequent handling and conveying, as well as the screening and separation processes. All treatment takes place within the processing building and it is anticipated that the risk of fugitive dust emissions will be very low.

14.2 Dust mitigation Measures

The key measures incorporated into the design of the site to assist with dust control include:

Dust and particulates from waste during deposit, storage and loading operations

- Waste types accepted at the site include lithium-ion batteries, lithium-ion battery materials and batteries of different chemistries. Waste outputs stored on site will include 0 - 250µm black mass, 250 - 500µm black mass and 0.5 – 3mm Cu-Al residues, plastics, and case metal and plastics.
- Storage, reception and loading of lithium-ion batteries, materials and casing has a negligible risk of producing dust.
- Pre-shredded lithium-ion battery materials will be received and handled in sealed FIBCs, which will be stored in ISO containers, preventing the escape of dusty materials. FIBCs will remain closed until the point of treatment.
- 0 - 250µm and 250 - 500µm black mass, and 0.5 – 3mm Cu-Al residues is deposited directly into UN approved packaging from the treatment process, which are sealed once full.
- Batteries, battery materials and treatment outputs are stored in enclosed ISO containers.
- Maintenance and cleaning of hard surfaced areas ensures they remain free of dust generating materials. If necessary, surfaces are dampened down with water during dry conditions to prevent dusty emissions.
- A maximum speed limit of 10mph is set for vehicles operating onsite.
- Further dust suppression measures will be identified and implemented if there is any risk identified of dust emanating past the site boundary, with attention to meteorological conditions which may exacerbate potential dust issues.
- IMS site inspection checklist or Vision App include a daily requirement for site staff to qualitatively assess dust; if perceived to be excessive measures will be taken to identify the source of any dust/particulates and take appropriate remedial action.

Dust and particulates from physical waste treatment processes

- Lithium-ion batteries and battery lithium-ion battery materials are treated within the enclosed building to prevent fugitive emissions beyond the permit boundary. The building is fitted with roller shutter doors which are closed during treatment to prevent the escape of particulates beyond the permit boundary.
- The treatment process is fitted with a dust management system comprising two local exhaust ventilation (LEV) systems which negatively extracts air from the process.
- The first LEV serves the shredder. Dust abatement is provided by baghouse filter and collection unit in addition to carbon filters, which are situated outside of the building. The second LEV system serves the sorting plant and utilises a baghouse filter situated inside the building, the contents of which are captured for further treatment to collect valuable outputs. An air quality assessment is included in the application

demonstrating the point source emission will not cause harm to human health or the environment.

- Regular maintenance of equipment and replacement filters to be installed by competent operatives.
- Any activities causing particulates emissions from the facility will be immediately suspended until climatic conditions improve and/or appropriate dust suppression measures are implemented.
- IMS site inspection checklist or Vision App include a daily requirement for site staff to qualitatively assess dust; if perceived to be excessive measures will be taken to identify the source of any dust/particulates and take appropriate remedial action.

14.3 Mitigation of Volatile Organic Carbon Emissions

There will not be significant fugitive emissions of VOCs because:

- The LEV system will utilise a carbon filter to adsorb VOCs.
- inspection and maintenance programmes will ensure continued integrity of equipment; and
- a spillage action plan will require clean up as soon as possible.

Carbon filters in Local Exhaust Ventilation (LEV) systems prevent VOC emissions through adsorption. The filters contain activated carbon, which has a highly porous structure that traps volatile organic compounds as air passes through. VOC molecules adhere to the surface of the carbon, preventing them from being released into the environment. This helps protect workers' health and reduces pollution.

15.0 Control of Emissions to Groundwater, Surface Water and Sewer

The potential risks from the proposed activities have been considered in the Environmental Risk Assessment, and preventative and mitigative measures have been designed in accordance with the identified risks. The control measures are presented in this section.

15.1 Point Source and Fugitive Emissions to Groundwater

There are no point source emissions to groundwater. The site benefits from impermeable surfacing and a sealed drainage system. The containment measures in place at the site are described in Section 6 of this BATOT. These will ensure there are no point source or fugitive emissions to groundwater. Accordingly, there will be no direct or indirect discharges of contaminating materials into groundwater from the site.

15.2 Point Source and Fugitive Emission to Surface Water

There are no point source emissions to surface water from process effluent.

All surface water run-off from the external impermeable surface in the yard area in front of the site building is directed to the interceptor (9000 litres) through gullies and drains. This runoff is collected in a Class 1 Full retention Interceptor and cellular attenuation tank before discharging to soakaway. The system is equipped with a penstock valve to allow any contamination to be contained in the event of an incident.

The containment measures in place at the site are described in Section 6 of this BATOT. These are designed to contain accidental spillages and also firewater in the case of an incident. These measures will ensure there are no fugitive emissions to surface water.

The site Environmental Risk Assessment details measures to ensure that surface water is not impacts by the operation.

15.3 Point Source Emissions to Sewer

There are no point source emissions to sewer.

15.4 Flood Risk

The site lies within a Flood Zone 1, defined as an area with low probability of flooding.

16.0 Control of Litter, Mud and Pests

16.1 Litter

In order to maintain the site in a tidy condition and prevent the escape of litter onto surrounding land the following measures will be in place:

- The site will be kept clean and tidy by way of a daily housekeeping regime;
- All processing of lithium-ion batteries and lithium-ion battery materials, will take place in an enclosed building.
- Waste for treatment is fed directly onto plant conveyors served by the LEV system which negatively extracts air from the process, preventing the escape of any light materials.
- Light plastics from the process are compacted by a briquetter and collected directly into flexible intermediate bulk containers (FIBCs), which are sealed when full. Sealed FIBCs are stored in enclosed ISO containers preventing the occurrence of litter.
- Wastes produced as part of the process will be stored within dedicated containers or sealed FIBCs prior to removal off-site. As such, it is unlikely to generate litter;
- Regular monitoring will be carried out by the Site Manager or a designated individual. Litter picking will be undertaken as necessary in response;
- Fences surrounding the site will reduce the chance of litter blowing off site. If necessary, additional netting will be erected to reduce the escape of wind-blown litter;
- Litter arising from the activities will be cleared from affected areas outside the site as soon as practicable and at least by the end of the working day; and
- The Site Manager will be responsible for monitoring the site and maintain it free of litter. Records will be maintained of monitoring, complaints and remedial actions taken.

16.2 Mud and Debris

In order to prevent mud and debris, the following measures will be in place:

- The site is surfaced such that there will be no areas with the potential to generate mud on site. This removes the possibility of vehicles tracking dirt or mud off site.
- Regular monitoring will be conducted by the Site Manager or a designated individual.
- The site will be kept clean and tidy by way of a regularised housekeeping regime.
- IMS procedures require that all vehicles leaving the site are inspected for cleanliness, any vehicles not reaching the required standard will be manually cleaned before leaving site to prevent material being tracked onto local highways.
- Remedial arrangements will be employed in response to any specific instances of significant mud/debris being tracked onto local highways.
- The Site Manager will be responsible for monitoring the site. Records will be maintained of monitoring, complaints and remedial actions taken.

16.3 Pests

In order to prevent pests, the following measures will be in place:

- Waste batteries and lithium-ion battery materials are unlikely to attract pests as there is no organic biological material present.
- Waste acceptance checks including an assessment of the potential to attract pests will be undertaken prior to acceptance of any waste on to the site. In the unlikely event wastes are found to contain flies or other pests, they will be rejected from the site.
- Operators will be required to only eat in the dedicated canteen area and food waste will be kept in enclosed waste bins.
- Routine inspections are undertaken as required by the IMS and appropriate action will be taken in the event that the inspections indicate the presence of any pests or vermin. A specialist contractor may attend to any specific incidence of pests on request to ensure eradication. If deemed necessary due to the detection of pests, regular pest control visits will be carried out to monitor pest levels and to ensure that activity does not cause issues.
- The Site Manager will be responsible for monitoring the site. Records will be maintained of monitoring, complaints and remedial actions taken.

17.0 Monitoring

The site will be subject to a comprehensive programme of monitoring to ensure it operates to the specified design standards and does not give rise to unacceptable environmental impact.

Monitoring comprises the following:

- General observations
- Monitoring of infrastructure and equipment;
- Monitoring of process variables; and
- Emissions monitoring.

17.1 General Observations

Routine observations and monitoring will be undertaken daily by site personnel to ensure that the site operates correctly and without giving rise to unacceptable levels of emissions.

Routine regular observations will include qualitative assessment of noise, dust, litter, mud on the road and odour at the installation, the results of which will be entered in the Site diary.

17.2 Monitoring of Infrastructure and Equipment

Infrastructure and equipment will be subject to regular visual inspection. In the event of deterioration or damage, appropriate remedial action will be taken to restore the infrastructure and equipment to a satisfactory condition.

17.3 Monitoring of Process Variables

Monitoring of process conditions and variables is described in Section 10.2.

17.4 Emissions Monitoring

17.4.1 Monitoring Emissions to Groundwater and Surface water

There are no direct emissions to surface water.

Rainfall run-off from site surfaces is released to ground via Class 1 full retention interceptor and cellular attenuation tank with penstock. Water is released to ground via a soakaway. Rainfall run-off from roofs is released directly to ground via the soakaway.

17.4.2 Monitoring Emissions to Air

Emissions to air will be subject to a routine monitoring programme, as described in Section 13.1.

17.1 Monitoring Standards and Techniques

Monitoring will be undertaken in compliance with recognised techniques or using standard methods. Monitoring equipment will be calibrated, serviced and maintained in line with manufacturer recommendations.

17.4.3 Monitoring Stack Emissions

Emissions monitoring will be undertaken in accordance with the requirements of the EA's Monitoring Stack Emissions guidance: measurement locations[5]. This will include provision of suitable access routes and platforms as required and the siting of sample ports in line with the requirements set out.

Prior to undertaking stack emissions monitoring a Site-Specific Protocol (SSP) will be prepared to ensure the monitoring is carried out in accordance with EA Technical Guidance Note Monitoring Stack Emissions guidance: measurement locations. Specifically, the SSP will consider the following aspects:

- Selection of the sampling position, sampling plan and sampling points;
- Access, facilities and services required; and
- Safety considerations.

The SSP will ensure that a representative sample is obtained from the stack.

The sampling approach, technique, method and equipment that are chosen will ensure:

- A safe means of access to the sampling position;
- A means of entry for sampling equipment into the stack;
- Adequate space for the equipment and personnel; and
- Provision of essential services such as electricity.

17.5 Monitoring Action Plan

In the event that the monitoring programme identifies a potentially significant release the following actions will be undertaken:

- The Site Manager will be informed immediately;

[5] https://www.gov.uk/government/publications/monitoring-stack-emissions-measurement-locations

- Actions to isolate and contain the source of release will be undertaken; and
- The causes of the release will be evaluated, and where possible, procedures put in place to prevent a recurrence.

In the event that abnormal monitoring results are identified, site personnel will inform the Site Manager and appropriate action will be taken to return the process to normal operating conditions. An inspection of the facility will be undertaken to identify the cause and necessary remedial action will be taken.

17.6 Management, Reporting and Training

All monitoring results will be recorded and stored. The Site Manager or their nominated deputy will inspect the monitoring records at a suitable frequency to ensure monitoring is being undertaken in accordance with procedures. Results will be examined annually as part of the Site's management review.

Staff involved in sampling and monitoring will be trained sufficiently to carry out the set procedures and will be trained in the reporting requirements of the environmental permit.

18.0 Closure

18.1 Operations during the period of the Environmental Permit

The preparation and processing activities at the site should not lead to a deterioration of the land by the introduction of any polluting substances due to the containment and control measures that will be implemented to ensure the processes are contained within the appropriate structure / containers.

In the unlikely event of a potentially polluting incident which impacts the site, the Site Manager will record the details of the incident together with any further investigation or remediation work carried out. This will ensure that there is a continuous record of the state of the site throughout the period of the permit.

18.2 Design of Site

Records will be maintained of the location of facilities, services, and sub-surface structures. During any modifications or alterations on the site, care will be taken to update these records to ensure closure of the site.

The design ensures that:

- There are no underground tanks for the containment of potentially polluting substances;
- There is provision for the draining and clean out of vessels and pipe work prior to dismantling; and
- Materials used are recyclable, if practicable (having regard for operational and other environmental protection objectives).

All supporting equipment manuals and documentation will be maintained in duplicate in hard copy ring binder and one electronic version of all documentation and manuals will be kept in the Site office.

18.3 Site Closure Plan

Definite closure will occur when the site stops operating as a waste facility. Actions that will be taken at this point to avoid pollution risk and return the site to a satisfactory condition are

set out below. These will be set out in the facility's decommissioning plan and in accordance with appropriate measures guidance for the activities operated at the facility.

18.3.1 Communication

SUEZ will inform the EA in writing of the date of the cessation of feedstock acceptance. This will enable the EA to inspect the site, approve the closure and agree upon the actions that should occur post-closure.

18.3.2 Access & Security

Security provision will be audited to ensure that the site is in a secure condition and that unauthorised access is avoided. site security will be maintained through building security measures including lockable entrances, local perimeter fencing and lockable gates. Regular inspections of the fencing and gates will be carried out, and damage will be repaired as soon as practicable. If necessary temporary repairs will be implemented until permanent repairs can be carried out.

18.3.3 Decommissioning

Substances will be removed in such a way as to protect land and groundwater from potentially harmful contents. Containers and other structures will be dismantled in such a way as to prevent pollution risk to the surrounding environment.

Storage and treatment vessels and drainage systems will be drained and cleaned prior to dismantling, with all effluent and solid residues being contained and taken to an appropriate treatment or disposal facility.

19.0 Environmental Impact

19.1 Impact Assessments

A number of impact assessments have been undertaken in support of this application to demonstrate that the operation of the proposed facility at the site will not give rise to unacceptable impact on the environment.

The assessments carried out in line with current EA guidance are as follows;

- Environmental Risk Assessment (Section 1.3 of this application);
- Air Emissions Risk Assessment (Section 1.10 of this application);
- Accident Prevention and Management Plan (Section 1.4 of this application);

The conclusions of the assessments are summarised below.

19.2 Environmental Risk Assessment

The Environmental Risk Assessment considers numerous potential risks including, but not limited to odour, noise, pests, dust and mud/litter. The assessment concludes that provided the risk mitigation measures implemented in the ERA are implemented. Only dust had an overall risk identified above Low, this being medium/Low. The implementation of the risk management measures described potential hazards from the proposed development are not likely to be significant.

The Environmental Risk Assessment is enclosed as Section 1.3 of this application.

19.3 Air Emissions Risk Assessment

Provided in section

Control of Emissions to Air and Section 1.10 of this application

19.4 Accident Prevention and Management Plan

Provided in Section 1.4 of this application

19.5 Site Condition & Baseline Report

A Site condition report has been prepared as part of this permit variation and is included in Section 1.8 of this application.

19.6 Fire Prevention Plan

A Fire Prevention Plan (FPP) has been prepared in accordance with EA guidance for FPPs[6]. The FPP details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The information contained within this FPP aims to meet the 3 main objectives of the EA FPP Guidance:

- minimise the likelihood of a fire happening;

[6] Environment Agency - Fire Prevention Plans, 11 January 2021 - https://www.gov.uk/government/publications/fire-prevention-plans-environmental-permits/fire-prevention-plans-environmental-permits

- aim for a fire to be extinguished within 4 hours and;
- minimise the spread of fire within the site and to neighbouring sites.

The FPP is enclosed as Section 1.7 of this application.

20.0 Information

20.1 Reporting and Notifications

All relevant notifications and submissions to the EA regarding the site will be made in writing and will quote the permit reference number and the name of the permit holder.

Records will be maintained for at least six years, however in the case of off-site environmental effects, and matters which affect the condition of land and groundwater the records will be kept until permit surrender.

20.1.1 Waste Types and Quantities

A report summarising the waste types and quantities accepted and removed from the site for each quarter will be submitted to the EA within one month of the end of each quarter.

20.1.2 Relevant Convictions

The EA will be notified of the following events:

- the operator being convicted of any relevant offence; and,
- any appeal against a conviction for a relevant offence and the results of such an appeal.

20.1.3 Notification of Change of Operator or Holder Details

The EA will be notified of the following:

- Any change in the operator's trading name, registered name or registered office address; and
- Any steps taken with a view to the company going into administration, entering into a company voluntary arrangement or being wound up.

20.1.4 Adverse Effects

The EA will be notified without delay following the detection of the following:

- Any malfunction, breakdown or failure of equipment or techniques;
- Any accident;
- Fugitive emissions which have caused, is causing or may cause significant pollution; and
- Any significant adverse environmental and health effect.

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Appendix A BATc for Waste Management

Appendix A BATc for Waste Management

No.	BAT Conclusion	Specific Measures
GENERAL CONSIDERATIONS		
BAT 1	*In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS)*[1]	The Site will be operated in accordance with an ISO 14001:2015 accredited Environmental Management System ('EMS') that incorporates all of the aspects of BAT1.
BAT 2	*In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below:* *Set up and implement waste characterisation and pre-acceptance procedures* *Set up and implement waste acceptance procedures* *Set up and implement a waste tracking system and inventory* *Set up and implement an output quality management system* *Ensure waste segregation* *Ensure waste compatibility prior to mixing or blending of waste* *Sort incoming solid waste*	The Site will operate in accordance with strict waste acceptance and pre-acceptance procedures as detailed in Section 8 of the BAT-OT document to ensure that no non-conforming waste types are accepted on site. **Waste Characterisation and Pre-acceptance Procedures** SUEZ will have waste pre-acceptance checks and feedstock specifications in place with suppliers to ensure that the waste has been characterised and classified appropriately before consignment to the site. These will be risk-based and in accordance with appropriate measures guidance for the activities to be operated at the facility. A battery risk assessment form is completed as part of the initial sales enquiry process. Where required, SUEZ undertake further checks, obtain additional information and undertake an inspection prior to transport to site. The sales enquiry process will determine if lithium-ion batteries accepted at the site will be suitable for reuse, or whether they will be treated. **Waste Acceptance Procedure** The site's pre-acceptance procedures will ensure that the characteristics of the waste are established before delivery to site. Deliveries to the site will be pre-booked with checks undertaken to ensure that the site will have capacity and staff resources to receive each delivery. Waste acceptance procedures are described in Section 8 include: • Load inspection; • Rejection procedures; • Measurement; and • Segregation procedures. Checks and inspections will be undertaken by a member of staff who is suitably qualified and trained. **Waste Tracking and Inventory System** SUEZ will employ a waste tracking system which stores all the information on each batch throughout the waste stream's lifecycle on site. **Output Quality Management System** The Site is operated in accordance with an ISO 9001:2015 QMS. This includes procedures to ensure that the separation processes are monitored and adjusted to ensure hazardous batteries and non-hazardous batteries are segregated at all times. **Waste Segregation** Hazardous waste and non-hazardous waste will be stored in separate, segregated locations. If it is suspected that waste which does not conform to that authorised by the permit has been received at the site, it would be placed in the designated quarantine area and labelled accordingly.

[1] Refer to the BAT Reference document for features to be incorporated in the EMS.

No.	BAT Conclusion	Specific Measures
		This waste would be removed as soon as possible of receipt with arrangements made to return the material to the customer. Waste storage and quarantine locations are illustrated on Drawing Sgl-LITH-LAY-0625-01Proposed Site Layout. **Waste Compatibility** The site handles non-hazardous and hazardous battery waste. Different waste types will be stored separately in clearly designated areas. There are no compatibility issues relating to the waste types which would present an increased risk to the environment. **Sorting of incoming solid waste** The site will only accept pre-sorted battery or battery waste materials where evidence notes have already been issued detailing any treatment or recycling previously carried out. Only waste that conforms to the permitted waste types will be accepted for processing as part of the proposed treatment processes. Visual inspections will be carried out of waste loads accepted at the site to ensure no gross contamination is evident. Waste are also scanned with a hand held thermal imaging camera.
BAT 3	*In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:* *(i) information about the characteristics of the waste to be treated and the waste treatment processes, including:* *(a) simplified process flow sheets that show the origin of the emissions;* *(b) descriptions of process-integrated techniques and waste water/waste gas treatment at source including their performances;* *(ii) information about the characteristics of the waste water streams, such as:* *(a) average values and variability of flow, pH, temperature, and conductivity;* *(b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances/micropollutants);* *(c) data on bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)) (see BAT 52);* *(iii) information about the characteristics of the waste gas streams*	No waste water is generated as part of the operation. Following commencement of operations, a programme of emissions monitoring of the exhaust gases released post-abatement from the LEV systems will be undertaken and an inventory of waste gases produced covering information as required by BAT3.
BAT 4	*In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below.* *a) Optimised storage locations* *b) Adequate storage capacity* *c) Safe storage operation* *d) Separate area for storage and handling of packaged hazardous waste*	Waste storage and handling procedures will operate in line with procedures within the Site FPP, which is submitted as part of this permit application. **a) Optimised storage locations** Storage arrangements are optimised to minimise transport distances on site. Storage location are also optimised for fire prevention as per the Site FPP. **b) Adequate storage capacity** Storage tonnages and durations will operate in line with procedures within the Site FPP. Deliveries to the Site are pre-booked with checks undertaken to ensure that the Site will have capacity and staff resources to receive each delivery. The Site benefits from a waste inventory and a waste tracking system designed to ensure the Site avoids reaching overcapacity, and to ensure that suitable arrangements are made for its transfer off Site before this point is reached. Waste will be stored on site for a maximum residence time of six months. Procedures included within the Site management system describe when and where different waste types are to be stored. **c) Safe Storage Operation** All waste acceptance, storage, treatment and processing takes place on impermeable surfacing. Waste batteries are stored in temperature-controlled ISO containers. Storage methods for all waste at the site are described within Table 8-1 of the BAT OT.

No.	BAT Conclusion	Specific Measures
		All infrastructure on site is resistant to materials used and stored on site. Furthermore, they will not be used in a manner other than for which they were designed, nor will they be used for a duration exceeding the specified design life. They will benefit from a daily inspection of integrity which will be undertaken by a competent member of staff. The site and all of its components will benefit from ongoing daily inspections to ensure that all equipment is in good working order. Any defects will be repaired as soon as practicable taking into account the severity of the problem. **d) Separate Area for Storage and Handling of Packaged Hazardous Waste** Hazardous battery waste will be stored within clearly labelled storage areas separately from non-hazardous battery waste.
BAT 5	*In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.*	The operator will minimise the environmental risk associated with the handling and transfer of waste by adhering to handling and transfer procedures detailed in their site's Environmental Management System. The operator will ensure all site operatives undergo induction and training, with periodic refreshment, as relevant to their role. The operator employs a waste tracking system which stores all the information on each batch throughout the waste stream's lifecycle on Site. All vehicles bringing waste material to the Site report to the weighbridge where the load is visually inspected, where possible, to confirm its description and composition against the relevant accompanying documentation. All wastes undergo a further visual inspection during unloading. Waste is only accepted at the Site if the description in the accompanying documentation is in accordance with the EP and that on-site inspection confirms the waste is consistent with the description provided. To prevent loss of containment and minimise the risk and impact of spillages, the following measures are implemented: • Storage vessels: storage tanks are constructed to the appropriate British Standard; • Inspection: tanks are inspected visually on a regular basis by the Site staff to ensure the continued integrity of the tanks, and identify the requirement for any remedial action; • Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on Site; and • Monitoring techniques: Site staff undertake regular monitoring for evidence of spillage and leakage.
BAT 6	*For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).*	Not relevant: No process effluent is generated as part of the operation.
BAT 7	*BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.*	Not relevant: No process effluent is generated as part of the operation.
BAT 8	*BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.*	Emissions to air will be monitored in accordance with the monitoring standards and methods detailed in Section 13.1 of this BATOT document.

No.	BAT Conclusion	Specific Measures
	Table 6.3 **BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from the mechanical treatment of waste** Parameter / Unit / BAT-AEL (Average over the sampling period) Dust / mg/Nm³ / 2-5 (1) (1) When a fabric filter is not applicable, the upper end of the range is 10 mg/Nm³.	
BAT 9	*BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given.*	Not relevant: the activities do not include regeneration of spent solvents, the decontamination of equipment containing POPs with solvents or the physico-chemical treatment of solvents for the recovery of their calorific value.
BAT 10	*BAT is to periodically monitor odour emissions.*	Not relevant: the applicability for monitoring odour is stated in the BREF document as being *'restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated'*. The battery wastes accepted for treatment, and the wastes and emissions produced by the process, are not expected to be odorous in nature. If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken. See Section 12 of the BATOT.
BAT 11	*BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.*	The operator will conduct monitoring of the annual consumption of water, energy and raw materials by recording all inputs into the process. Furthermore, monitoring will also be conducted for the annual generation of residues via the recording of all output. To aid this, an inventory and tracking system will be kept of all input and output. Monitoring will consider any significant changes relating to the process.
BAT 12	*In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:* *a protocol containing actions and timelines;* *a protocol for conducting odour monitoring as set out in BAT 10;* *a protocol for response to identified odour incidents, e.g. complaints;* *an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures.*	Not relevant: the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature. The applicability of BAT12 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated. If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken. See Section 12 of the BATOT.
BAT 13	*In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below.* *a) Minimising residence times* *b) Using chemical treatment* *c) Optimising aerobic treatment*	Not relevant: the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature. The applicability of BAT 13 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated. If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken. See Section 12 of the BATOT.
BAT 14	*In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below* *a) Minimising the number of potential diffuse emission sources*	The risk of odour from diffuse emissions is low as the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature. (See sections above).

No.	BAT Conclusion	Specific Measures
	b) Selection and use of high-integrity equipment *c) Corrosion prevention* *d) Containment, collection and treatment of diffuse emissions* *e) Dampening* *f) Maintenance* *g) Cleaning of waste treatment and storage areas* *h) Leak detection and repair (LDAR) programme*	However, it is recognised that the proposed treatment operations could lead to the potential release of dust from the site. BAT 14 will be met through the use of the LEV systems. • Specifically with regard to BAT 14: • All treatment takes place within an enclosed building with no vents other than the dust extraction system. • High integrity equipment has been selected • All waste is transported in covered vehicles and stored in containers; • Plant and equipment are maintained in accordance with the manufacturer's recommendations. All vehicles are maintained in line with manufacturer's instructions and regularly serviced; • Daily visual inspection of the site and site boundary is carried out by site personnel. Storage areas benefit from regular cleaning, on a daily basis as a minimum.
BAT 15	*BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below:* *a. Correct plant design* *b. Plant management*	Not relevant: the process does not include flaring.
BAT 16	*In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below:* *a. Correct design of flaring devices* *b. Monitoring and recording as part of flare management*	Not relevant: the process does not include flaring.
BAT 17	*In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:* *I. a protocol containing appropriate actions and timelines;* *II. a protocol for conducting noise and vibration monitoring;* *III. a protocol for response to identified noise and vibration events, e.g. complaints;* *IV. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures*	The applicability of BAT 17 is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected and/or has been substantiated. The site Environmental Risk Assessment (1.3 Environmental Risk Assessment, June 2025) identifies in Table 3 noise mitigation and management measures. Battery treatment has the potential to generate noise; however this is undertaken inside a building and is not expected to generate noise levels that are deemed excessive. The site building is fitted with roller shutter doors, which can be closed to further prevent the risk of noise escaping from the building e.g. during shredding and treatment. The site staff will ensure that the delivery, treatment and loading of waste takes place in a controlled manner so that noise generation is kept to a minimum. Increases in plant noise are often indicative of future mechanical failure, as such all relevant plant will be regularly and effectively maintained as set out in the Site and Equipment Maintenance Plan.
BAT 18	*In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below:* *a. Appropriate location of equipment and buildings* *b. Operational measures* *c. Low-noise equipment* *d. Noise and vibration control equipment* *e. Noise attenuation*	The risk of noise impact from the site is low. Noise will be minimised through the measures described in Section 11 of this BATOT document.
BAT 19	*In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below.* *a. Water Management* *b. Water Recirculation*	Large quantities of water are not used in the site operation. Water consumption will be optimised by the following measures: • Water consumption will be monitored;

No.	BAT Conclusion	Specific Measures
	c. Impermeable Surface *d. Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels* *e. Roofing of waste storage and treatment areas* *f. Segregation of water streams* *g. Adequate drainage infrastructure* *h. Design and maintenance provisions to allow detection and repair of leaks* *i. Appropriate buffer storage capacity*	• All waste acceptance, storage, processing and treatment takes place on impermeable surfacing; • The site benefits from a drainage system as described in section 6 of the BATOT, capable of containing any spillages or contaminated surface water from leaving the site; • All waste storage and treatment areas are covered or enclosed in containers; and • All plant and equipment are subject to a programme of planned preventative maintenance which will follow the inspection and maintenance schedule recommended by the manufacturer.
BAT 20	*In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below:* *a. Equalisation* *b. Neutralisation* *c. Physical separation* *d. Adsorption* *e. Distillation/rectification* *f. Precipitation* *g. Chemical oxidation* *h. Chemical reduction* *i. Evaporation* *j. Ion exchange* *k. Stripping* *l. Activated sludge process* *m. Membrane bioreactor* *n. Nitrification/denitrification when the treatment includes biological treatment* *o. Coagulation and flocculation* *p. Sedimentation* *q. Filtration* *r. Flotation*	Not relevant: No process effluent is generated as part of the operation.

<table>
<tr><th>No.</th><th>BAT Conclusion</th><th>Specific Measures</th></tr>
<tr><td></td><td>
Table 6.2: BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body
<table>
<tr><th colspan="2">Substance/Parameter</th><th>BAT-AEL (1) (2)</th><th>Waste treatment process to which the BAT-AEL applies</th></tr>
<tr><td colspan="2">Hydrocarbon oil index (HOI)</td><td>0.5–10 mg/l</td><td>• Mechanical treatment in shredders of metal waste
• Treatment of WEEE containing VFCs and/or VHCs
• Re-refining of waste oil
• Physico-chemical treatment of waste with calorific value
• Water washing of excavated contaminated soil
• Treatment of water-based liquid waste</td></tr>
<tr><td colspan="2">Free cyanide (CN) (3)</td><td>0.02– 0.1 mg/l</td><td>• Treatment of water-based liquid waste</td></tr>
<tr><td colspan="2">Adsorbable organically bound halogens (AOX) (3)</td><td>0.2–1 mg/l</td><td>• Treatment of water-based liquid waste</td></tr>
<tr><td rowspan="6">Metals and metalloids (3)</td><td>Arsenic (expressed as As)</td><td>0.01–0.05 mg/l</td><td rowspan="6">• Mechanical treatment in shredders of metal waste
• Treatment of WEEE containing VFCs and/or VHCs
• Mechanical biological treatment of waste
• Re-refining of waste oil
• Physico-chemical treatment of waste with calorific value
• Physico-chemical treatment of solid and/or pasty waste
• Regeneration of spent solvents
• Water washing of excavated contaminated soil</td></tr>
<tr><td>Cadmium (expressed as Cd)</td><td>0.01–0.05 mg/l</td></tr>
<tr><td>Chromium (expressed as Cr)</td><td>0.01–0.15 mg/l</td></tr>
<tr><td>Copper (expressed as Cu)</td><td>0.05–0.5 mg/l</td></tr>
<tr><td>Lead (expressed as Pb)</td><td>0.05–0.1 mg/l (4)</td></tr>
<tr><td>Nickel (expressed as Ni)</td><td>0.05–0.5 mg/l</td></tr>
<tr><td></td><td>Mercury (expressed as Hg)</td><td>0.5–5 µg/l</td><td></td></tr>
<tr><td></td><td>Zinc (expressed as Zn)</td><td>0.1–1 mg/l (5)</td><td></td></tr>
<tr><td rowspan="8"></td><td>Arsenic (expressed as As)</td><td>0.01–0.1 mg/l</td><td rowspan="8">• Treatment of water-based liquid waste</td></tr>
<tr><td>Cadmium (expressed as Cd)</td><td>0.01–0.1 mg/l</td></tr>
<tr><td>Chromium (expressed as Cr)</td><td>0.01–0.3 mg/l</td></tr>
<tr><td>Hexavalent chromium (expressed as Cr(VI))</td><td>0.01–0.1 mg/l</td></tr>
<tr><td>Copper (expressed as Cu)</td><td>0.05–0.5 mg/l</td></tr>
<tr><td>Lead (expressed as Pb)</td><td>0.05–0.3 mg/l</td></tr>
<tr><td>Nickel (expressed as Ni)</td><td>0.05–1 mg/l</td></tr>
<tr><td>Mercury (expressed as Hg)</td><td>1–10 µg/l</td></tr>
<tr><td></td><td>Zinc (expressed as Zn)</td><td>0.1–2 mg/l</td><td></td></tr>
<tr><td colspan="4">(1) The averaging periods are defined in the General considerations.
(2) The BAT-AELs may not apply if the downstream waste water treatment plant abates the pollutants concerned, provided this does not lead to a higher level of pollution in the environment.
(3) The BAT-AELs only apply when the substance concerned is identified as relevant in the waste water inventory mentioned in BAT 3.
(4) The upper end of the range is 0.3 mg/l for mechanical treatment in shredders of metal waste.
(5) The upper end of the range is 2 mg/l for mechanical treatment in shredders of metal waste.</td></tr>
</table>
</td><td></td></tr>
<tr><td>Bat 21</td><td>In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below as part of the accident management plan:
a. Protection measures
b. Management of incidental/accidental emissions
c. Incident/Accident registration and assessment system</td><td>The site has a number of security measures in place to limit the likelihood of a security breach or vandalism including:
• 1.8m double metal security gate
• Existing landfill security
• Securely fenced boundary
• Regular inspections of the site fencing and gates
• CCTV system</td></tr>
</table>

<table>
<tr><th>No.</th><th>BAT Conclusion</th><th>Specific Measures</th></tr>
<tr><td></td><td></td><td>The site has a Fire Prevention Plan in place, which describes the measures in place to prevent fires and to manage environmental risks if a fire occurs.

An Accident Prevention and Management Plan (APMP) (1.4 Accident Prevention & Management Plan, June, 2025) will be implemented and maintained at the Site to ensure the staff are fully prepared for such incidents. All accidents shall be reported and recorded in a timely manner and shall be investigated as soon as practicable, which may include an Incident Review Panel, dependant on the severity of the incident.

Investigation findings shall be recorded and preventative measures, where identified, shall be implemented as soon as practicable. Actions to minimise the potential causes and consequences of accidents are included in the APMP.</td></tr>
<tr><td>BAT 22</td><td>In order to use materials efficiently, BAT is to substitute materials with waste.</td><td>Not relevant - the process does not use significant amounts of non-waste material and therefore it is considered that there is limited scope for replacement</td></tr>
<tr><td>BAT 23</td><td>In order to use energy efficiently, BAT is to use both of the techniques given below.
a. Energy Efficiency Plan
b. Energy Balance Record</td><td>The site will have an Energy Efficiency Plan and energy balance record in place when the process is operational.</td></tr>
<tr><td>BAT 24</td><td>In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the Residues Management Plan.</td><td>Where possible, packaging (such as containers) will be re-used.</td></tr>
<tr><td colspan="3">MECHANICAL TREATMENT OF WASTE</td></tr>
<tr><td>BAT 25</td><td>In order to reduce emissions to air of dust, and of particulate-bound metals, PCDD/F and dioxin-like PCBs, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.
a. Cyclone
b. Fabric filter
c. Wet scrubbing
d. Water injection into the shredder

Table 6.3

BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from the mechanical treatment of waste

<table><tr><th>Parameter</th><th>Unit</th><th>BAT-AEL
(Average over the sampling period)</th></tr><tr><td>Dust</td><td>mg/Nm³</td><td>2-5 (1)</td></tr></table>(1) When a fabric filter is not applicable, the upper end of the range is 10 mg/Nm³.

The associated monitoring is given in BAT 8.</td><td>The whole treatment plant utilises a dust extraction management system, comprising two separate purpose-built Local Exhaust Ventilation (LEV) systems which negatively extract air from the processes, creating two point-source emissions to air.

The first LEV system serves the shredder. Dust abatement is provided by an ATEX rated baghouse filter and collection unit in addition to carbon filters.

The second LEV system serves the sorting plant, utilising a baghouse filter situated inside the building, the contents of which are captured for further treatment.</td></tr>
<tr><td>BAT 26</td><td>In order to improve the overall environmental performance, and to prevent emissions due to accidents and incidents, BAT is to use BAT 14g and all of the techniques given below:
a. implementation of a detailed inspection procedure for baled waste before shredding;
b. removal of dangerous items from the waste input stream and their safe disposal (e.g. gas cylinders, nondepolluted EoLVs, non-depolluted WEEE, items contaminated with PCBs or mercury, radioactive items);
c. treatment of containers only when accompanied by a declaration of cleanliness;</td><td>Not-relevant – the site only accepts end-of-life batteries, battery waste and fluorescent tubes.</td></tr>
</table>

No.	BAT Conclusion	Specific Measures
BAT 27	*In order to prevent deflagrations and to reduce emissions when deflagrations occur, BAT is to use technique a. and one or both of the techniques b. and c. given below.* *a. Deflagration management plan;* *b. Pressure relief dampers* *c. Pre-shredding*	Pre-shredding is used during the processing operation.
BAT 28	*In order to use energy efficiently, BAT is to keep the shredder feed stable.*	The shredder only treats lithium-ion battery waste and lithium-ion battery materials and the feedstock is expected to be relatively homogenous. The shredder has been selected and designed specifically for the treatment of this type of feedstock.
BAT 29	*In order to prevent or, where that is not practicable, to reduce emissions of organic compounds to air, BAT is to apply BAT 14d, BAT 14h and to use technique a. and one or both of the techniques b. and c. given below.* *a. Optimised removal and capture of refrigerants and oils* *b. Cryogenic condensation* *c. Adsorption*	The whole treatment plant utilises a dust extraction management system, comprising two separate purpose-built Local Exhaust Ventilation (LEV) systems which negatively extract air from the processes, creating two point-source emissions to air. The first LEV system serves the shredder. Dust abatement is provided by an ATEX rated baghouse filter and collection unit in addition to carbon filters. The second LEV system serves the sorting plant, utilising a baghouse filter situated inside the building, the contents of which are captured for further treatment.
BAT 30	*In order to prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs, BAT is to use either of the techniques given below.* *a. Inert atmosphere* *b. Forced ventilation*	The whole treatment plant utilises a dust extraction management system, comprising two separate purpose-built Local Exhaust Ventilation (LEV) systems which negatively extract air from the processes, creating two point-source emissions to air.
BAT 31	*In order to reduce emissions to air of organic compounds, BAT is to apply BAT 14d and to use one or a combination of the techniques given below.* *a. Adsorption* *b. Biofilter* *c. Thermal oxidation* *d. Wet scrubbing*	Adsorption of VOCs will be provided by carbon filtration.
BAT 32	*In order to reduce mercury emissions to air, BAT is to collect mercury emissions at source, to send them to abatement and to carry out adequate monitoring.*	Not relevant – the site does not treat WEEE containing mercury.
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE		
BAT 40	*In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).* *Monitoring the waste input, e.g. in terms of:* *- content of organics, oxidising agents, metals (e.g. mercury), salts, odorous compounds;* *- H2 formation potential upon mixing of flue-gas treatment residues, e.g. fly ashes, with water.*	The shredder only treats end of life Li-ion batteries and LI-ion battery materials waste. Therefore the characteristics and composition of the feedstock is expected to be relatively homogenous. The shredder has been selected and designed specifically for the treatment of this type of feedstock. The targeted treatment outputs include battery cell materials including black mass, copper and aluminium. It is anticipated that the waste will be processed in batches by supplier to provide traceability of the quantity of recovered material back to the supplier of the battery waste. The process is designed to recover as much of the target material as possible and the operator will assess performance of the process by monitoring the recovery rate in comparison with the mass of the in-feed. SUEZ will have waste pre-acceptance checks and feedstock specifications in place with suppliers to ensure that the waste has been characterised and classified appropriately before consignment to the site. A waste tracking system is employed by SUEZ to track waste intended for receipt at the site.

No.	BAT Conclusion	Specific Measures
BAT 41	In order to reduce emissions of dust, organic compounds and NH3 to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below. a. *Adsorption* b. *Biofilter* c. *Thermal oxidation* d. *Wet scrubbing*	As per BAT 29

Appendix B Appropriate Measures for Metal Shredding

Appendix B Appropriate Measures for Metal Shredding

Appropriate Measure	Compliance
2. GENERAL MANAGEMENT APPROPRIATE MEASURES	
2.1 Management System *You must have and follow an up-to-date written management system. It must incorporate the following features:* • *Management commitment, including from senior lawyers.* • *Environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance.* • *You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment.* • *You implement your environmental performance procedures inc:* • *staff structure and relevant responsibilities* • *staff recruitment, training, awareness and competence* • *communication (for example, of performance measures and targets)* • *employee involvement* • *documentation and records* • *effective process control* • *maintenance programmes* • *the management of change (including legislative changes and waste classification changes)* • *emergency preparedness and response* • *making sure you comply with environmental legislation* • *You check environmental performance and take corrective action paying particular attention to:* • *monitoring and measurement* • *learning from incidents, near misses and mistakes, including those of other organisations* • *records maintenance* • *independent (where practicable) internal or external auditing of the management system and operations to confirm it has been properly implemented and maintained* • Senior managers review the management system at least annually to check it is still suitable, adequate and effective. • *You review the development of cleaner and more efficient technologies and their applicability to site operations.* • *When designing new plant, you make sure that you assess the environmental impacts from the plant's operating life and eventual decommissioning.* • *You consider the risks a changing climate poses to your operations. You have appropriate plans in place to assess and manage future risks.* • *You compare your site's performance against relevant sector guidance and standards on a regular basis, known as sectoral benchmarking.* • *You have and maintain the following documentation:* • *inventory of emissions to air and water* • *residues management plan*	The Site will be operated in accordance with an ISO 14001:2015 accredited Environmental Management System ('EMS') that incorporates all of the identified features of appropriate measure 2.1. (See BAT-OT and BAT1)

Appropriate Measure	**Compliance**
• *accident management plan* • *site infrastructure plan* • *site condition report* • *fire prevention plan* • *If required, you have and maintain the following documentation: odour management plan* • *noise and vibration management plan* • *dust management plan* • *pest management plan* • *climate change risk assessment*	
2.2 Staff Competence *Your site must be operated at all times by an adequate number of staff with appropriate qualifications and competence.* *The design, installation and maintenance of infrastructure, plant and equipment must be carried out by competent people.* *You must have appropriately qualified managers for your waste activity who are either:* • *qualified under a technical competence scheme* • *operating under a Competence Management System approved under a technical competence scheme* *Non-supervisory staff must be reliable and technically skilled in the activities they are responsible for and in emergency response procedures. Their skills may be based on experience and relevant training.*	Details of the technically competent manager have been submitted with the permit application. The site's EMS includes training and management procedures to ensure that the design, installation and maintenance of infrastructure, plant and equipment is carried out by competent people and that non-supervisory staff are appropriately skilled in all relevant operational and emergency response procedures.
2.3 Accident management plan *As part of your management system you must have a plan for dealing with any incidents or accidents that could result in pollution.* *The accident management plan must identify and assess the risks the facility poses to human health and the environment.* *Areas to consider may include:* • *waste types and the risks they pose* • *robust waste acceptance procedures to avoid receiving unwanted items, such as gas cylinders* • *failure of abatement systems* • *failure of plant and equipment (for example over-pressure of vessels and pipework, blocked drains)* • *failure of containment (for example, bund failure, or drainage sumps overfilling)* • *damaged lithium-ion batteries* • *failure to contain firefighting water* • *making the wrong connections in drains or other systems* • *checking the composition of an effluent before emission* • *vandalism and arson* • *extreme weather conditions for example flooding or very high winds* *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:* • *how likely is it that the accident will happen?* • *what may be emitted and how much?* • *where will the emission go – what are the pathways and receptors?* • *what are the consequences?* • *what is the overall significance of the risk?* • *what can you do to prevent or reduce the risk?* *In particular, you must identify any fire risks that may be caused, for example by:* • *arson or vandalism*	An Accident Management Plan (AMP) will be implemented and maintained at the Site to ensure the Site's staff are fully prepared for such incidents. The AMP will be reviewed following a change of operations and after any reportable incident on Site. The document will be continually improved in these reviews to include best practice and minimise the risk of accidents occurring. The site will follow measures to minimise the potential causes and consequences of accidents. The site will be operated in accordance with a FPP.

Appropriate Measure	Compliance
• *self-combustion, for example the finer fractions of shredder residue* • *plant or equipment failure and electrical faults* • *naked lights and discarded smoking materials* • *hot works (for example welding or cutting), industrial heaters and hot exhausts* • *neighbouring site activities* • *sparks from loading buckets* • *hot loads deposited at the site* • *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* • *batteries left connected in ELVs which can short circuit* • *batteries (storage, processing and handling)* • *ELV depollution activities (if carried out on your site)* • *deflagrations within the shredder and pre-shredders* *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 carry out will depend on the characteristics of the plant and its location.* *The main factors to consider are the:* • *scale and nature of the accident hazard presented by the plant and its activities* • *risks to areas of population and the environment (the receptors)* • *nature of the plant and complexity of the activities and how difficult it is to decide and justify adequate risk control techniques* *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 accident scenario.* *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 and safely and know how to respond to an emergency.* *You must also:* • *establish how you will communicate with relevant authorities, emergency services and neighbours (as appropriate) both before, during and after an accident* • *have appropriate emergency procedures, including for safe plant shutdown and site 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* • *test the plan by carrying out emergency drills and exercises*	
2.4 Accident prevention measures *1. You must take the following measures, where appropriate, to prevent events that may lead to an accident.* ***Waste acceptance and pre acceptance procedures*** *1. You must have clear and detailed procedures for pre-acceptance and acceptance of waste and for rejected and quarantined wastes.* *2. These should be produced and maintained as set out in the waste pre-acceptance, acceptance and tracking appropriate measures section.*	1. The site will be operated under appropriate pre-acceptance and waste acceptance procedures. 2. These will be produced as set out in the waste pre-acceptance, acceptance and tracking appropriate measures section of the EA's guidance.
Segregating waste *3. You must keep apart incompatible wastes. Examples could include but are not limited to:* • *storing lead acid batteries separately to nickel metal hydride batteries* • *segregating flammable gas cylinders in cages away from oxygen cylinders*	3. Not relevant. There are no compatibility issues relating to the waste types which would present an increased risk to the environment.
Preventing accidental emissions *4. You must make sure you contain the following for off-site disposal or route to the effluent system (where necessary):* • *process waters* • *site drainage waters* • *emergency firefighting water* • *oil or chemical contaminated waters*	4. The site benefits from impermeable surfacing and a drainage system as described in section 6 of the BATOT. The FPP will ensure emergency fire water is contained on site. No process waters are generated. 5. The site has buffer storage capacity to contain contaminated water.

Appropriate Measure	Compliance
• *spillages of oils and chemicals* *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 example, by considering the:* • *nature of the pollutants* • *effects of downstream waste-water treatment* • *sensitivity of the receiving environment* *6. You can only discharge waste-water from this buffer storage after you have taken appropriate measures, for example, to control, treat or reuse the water.* *7. You must have spill contingency procedures to minimise the risk of an accidental emission of raw materials, products and waste materials, and to prevent their entry into water.* *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 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:* • *Overflows* • *Vents* • *safety relief valves* • *bursting discs* *If this is not advisable on safety grounds, you must focus on reducing the probability of the emission.*	6. In the event of contamination of drainage by spillage or firewater, the system can be isolated to prevent discharge . If required, it will be tankered off-site to an appropriately regulate site for treatment. 7. Spill procedures will be in place. 8 See FPP. 9. Information on the drainage system is provided in section 6.2 of the BATOT. This include a full retention separator, monitoring and shut off valves.
Security measures *9. You must have security measures (and staff) in place to prevent:* • *Entry by intruders* • *Damage to equipment* • *Theft* • *Fly-tipping* • *Arson* *10. Facilities must use an appropriate combination of the following measures:* *1. security guards* *2. total enclosure (usually with fences)* *3. controlled entry points* *4. adequate lighting* *5. warning signs* 6. *24-hour surveillance, such as CCTV*	See Section 6.4 of the BATOT.
Fire prevention *11. There are 3 fire prevention objectives. You must:* • *Minimise the likelihood of a fire happening* • *Aim for a fire to be extinguished within 4 hours* • *Minimise the spread of fire within the site and to neighbouring sites* *12. You must have appropriate systems for fire prevention, detection and suppression or extinction.*	See FPP.
Other accident prevention measures *13. You must maintain plant control in an emergency using one or a combination of:* • *Alarms* • *process trips and interlocks* • *automatic systems* • *manual interventions* *14. You must:* • *make sure all the measurement and control devices you would need in an emergency are easy to access and operate in an emergency situation*	13 & 14. The facility's EMS will include details of accident and emergency procedures. See section 10.2 and 10.3 of the BAT-OT.

Appropriate Measure	Compliance
• *maintain the plant so it is in a good state through a preventive maintenance programme and a control and testing programme* • *use techniques such as suitable barriers to prevent moving vehicles damaging equipment* • *have procedures in place to avoid incidents due to poor communication between operating staff during shift changes and following maintenance or other engineering work* • *where relevant, use equipment and protective systems designed for use in potentially explosive atmospheres*	
Record keeping and procedures *15. You must:* • *keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, 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 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* • *make sure that any documents that may be needed in the event of an incident are accessible*	These aspects will be included in the facility's EMS. See Section 2.3 and 20 of the BAT-OT.
2.5 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.* *2. Your contingency plan must also contain provisions and procedures to make sure that you:* • *do not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste* • *stop 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.* *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.* *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* • *are authorised to do so in the quantities and types likely to be needed – in addition to 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 based on 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 and you have the appropriate infrastructure in place.* *8. Your management procedures and contingency plan must also:* • *identify known or predictable malfunctions associated with your technology and the procedures, spare parts, tools and expertise needed to deal with them* • *include a record of spare parts held, especially critical spares – or state where you can get them from and how long it would take to receive them* • *have a defined procedure to identify, review and prioritise items of plant which need a preventative regime* • *include all equipment or plant whose failure could directly or indirectly lead to an impact on the environment or human health* • *identify 'non-productive' or redundant items such as tanks, pipework, retaining walls, bunds, reusable waste containers (for example wheeled carts), ducts, filters and security systems*	1. Operational procedures for maintenance, shutdown and contingency planning will be included in the facility's EMS. 2. The facility will have pre-acceptance, waste acceptance procedures in place as well as a tracking system. Together these are used to monitor inventory and duration of waste on site to ensure that waste is only accepted if there is capacity available. 3. The facility's contingency plan will provide procedures for alternative arrangements if wastes cannot be sent to certain sites. 4. Not applicable at the present time. 5. This will be part of the contingency plan. 6. This will be part of the contingency plan. 7. The site will only make use of waste storage as authorised in the permit. 8. All aspects will be included in the facility's operational procedures. 9. The EMS will include the appropriate auditing procedures.

Appropriate Measure	Compliance
• *make sure you have the spare parts, tools, and competent staff needed before you start maintenance* *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.*	
2.6 Plant decommissioning *1. You must consider the decommissioning of the plant at the design stage and make suitable plans to minimise risks during later decommissioning.* *For existing plant, identify potential decommissioning risks and take steps to address these. Make changes and design improvements as and when plant is upgraded, or when construction and development works are carried out at your Site.* *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.* *2. You must have and maintain a decommissioning plan to demonstrate that:* • *plant will be decommissioned without causing pollution* • *the Site will be returned to a satisfactory condition* *3. Your decommissioning plan should include details on:* • *whether you will remove or flush out pipelines and vessels (where appropriate) and how you will empty them of any potentially harmful contents* • *Site plans showing the location of all underground pipes and vessels* • *how asbestos or other potentially harmful materials will be removed, unless we have agreed it is reasonable to leave such liabilities to future owners* • *methods for dismantling buildings and other structures, and for protecting surface water and groundwater during construction or demolition at your Site* • *any soil testing needed to check for any pollution caused by the Site activities, and information on any remediation needed to return the Site to a satisfactory state when you cease activities, as defined by the initial Site condition report* • *the measures proposed, once activities have definitively stopped, to avoid any pollution risk and to return the Site of operation to a satisfactory state (including, where appropriate, measures relating to the design and construction of the plant)* • *the clearing of deposited residues, waste and any contamination resulting from the waste treatment activities* *4. You should make sure that equipment taken out of use is decontaminated and removed from the site.*	1 – 4. Section 18 of the BAT-OT sets out the actions to be taken with regard to decommissioning and site closure. A decommissioning plan will be in place which includes all aspects listed.
3. WASTE PRE-ACCEPTANCE, ACCEPTANCE AND TRACKING APPROPRIATE MEASURES	
3.1 Waste pre-acceptance *1. You must implement waste pre-acceptance procedures so that you know enough about a waste (including its composition) before it arrives at your facility. You need to do this to assess and confirm the waste is technically and legally suitable for your facility and processes.* *2.* Your procedures must follow a risk-based approach, considering: • *the source and nature of the waste* • *any hazardous properties and persistent organic pollutant (POPs) content* • *potential risks to process safety, occupational safety and the environment (for example, from the presence of hazardous substances that could be dispersed during treatment)* • *knowledge about the previous waste holder* • *the type of containment used for the waste* *3.* You must get the following information in writing when you receive a customer query: • *details of the waste producer (who you are receiving the waste from) including organisation name, address and contact details* • *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* • *where the waste is coming from* • *a description of the waste including its composition and quantity* • *the List of Waste code (European Waste Classification, EWC, code)*	1-9. These aspects will be included in the facility's pre-acceptance procedures. Refer to Section 8.1 of the BATOT.

Appropriate Measure	**Compliance**
• *any hazardous properties or whether it contains any regulated chemicals, for example, POPs.* • *confirmation from the producer that ELVs have been depolluted to ELV directive requirements* • *confirmation from the producer that drums will be accompanied by a certificate of cleanliness* *4.* You must also get confirmation that the waste does not contain a 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. *5. You must consider whether specific wastes, from among those you are permitted to receive, have properties that can pose unacceptable risks to the Site or process. For example, due to:* • *a risk of explosion (for example, from gas or aerosol canisters that may be present)* • *a risk of fire (for example, from WEEE containing lithium-ion batteries)* *6. You should establish a list of such wastes and procedures for managing the risks from them.* *7. You must keep pre-acceptance records following receipt of the waste.* *8. You must reassess the information required at pre-acceptance if the:* • *waste changes* • *process giving rise to the waste changes* • *waste received does not conform to the pre-acceptance information* *9. In all cases you must reassess the information required at pre-acceptance on an annual basis.*	
3.2 Waste acceptance *1. 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 you can accept it.* *2.* 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. *3.* Procedures should be documented and auditable and must follow a risk-based approach, considering: • *the source, nature, condition and age of the waste* • *the wastes hazardous properties* • *the waste's potential to contain POPs* • *potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)* • *knowledge about the previous waste holders* 4. 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: • *hazardous properties of the waste* • *risks posed by the waste in terms of process safety, occupational safety and environmental impact*	1 – 4. The site will have appropriate waste acceptance procedures in place in accordance with these requirements. Refer to Section 8.2 of the BATOT.
Storage areas *5.* 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. *6.* 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. *7. You must clearly designate a materials reception area (or areas). Staff controlling the inspection, reception and validation of materials at the facility, must be trained in their respective roles.*	5. A waste tracking system is employed by SUEZ to track waste intended for receipt at the site. This is linked with tracking of capacity at the processing facility to ensure that waste is not accepted if there is no capacity available. 6. The entire site benefits from impermeable surfacing and - drainage system as described in section 6 of the BATOT. 7. Materials reception areas, inspection areas and quarantine areas are specified at the facility.
Waste acceptance *7. 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 waste tracking system.* *8. You must visually check wastes and verify them against pre-acceptance information and transfer documentation before you accept them on Site.* *9. You must check and validate all transfer documentation and resolve discrepancies before you accept the waste. If you believe the incoming waste classification and description is incorrect or incomplete, then you must address this with the customer during waste acceptance. You must record any non-conformances. If you have assessed the waste as acceptable for on-site storage or treatment, you must document this.*	Waste acceptance procedures will be in place at the site which include all of these requirements. Refer to Section 8.2 of the BATOT.

Appropriate Measure	Compliance
10. You must have clear criteria that you use to reject 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.	
Monitoring for radioactive substances *11. 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.* *12. The radiation detection equipment must include solid state scintillation detectors and have a sensitivity to gamma radiation that is consistent with the minimum performance recommended by the International Atomic Energy Agency. These are specified in Annex IV of 'Recommendations on Monitoring and Response Procedures for Radioactive Scrap Metal', UNECE, 2006.* *13. You must maintain, calibrate and test the radiation monitoring equipment in accordance with the manufacturer's specification.* *14. You must have clear procedures for responding to radiation detector alarms.*	Not relevant – there will be no acceptance of wastes containing radioactive substances. Pre-acceptance procedures will minimise the risk of non-conforming wastes arriving at the facility and waste acceptance procedures will identify and take the appropriate steps to turn away any non-conforming wastes or quarantine them pending transfer off-site to an appropriately regulated facility.
Acceptance of drums and tanks *15. You must make sure you only receive and accept drums or tanks:* • *that have a certificate of cleanliness* • *with prior notice* • *with hazard warning symbols obliterated*	The Site will only receive Lithium ion batteries,Lithium ion battery materials, and non lithium-ion batteries in appropriately labelled containers.
Acceptance of baled metal waste *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.* *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.*	Not applicable as there is no acceptance of baled wastes.
Quarantine storage *18. You must establish quarantine areas for materials that are prohibited, awaiting full inspection, or awaiting assessment or removal.* *19. Quarantine storage must be for a maximum of 14 working days.* *20. You must have written procedures in place for dealing with wastes held in quarantine, and a maximum storage volume.* *21. Quarantine storage must be separate from all other storage and clearly marked as a quarantine area.* *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 items back to the appropriate owner.*	Materials storage and handling procedures are described in Section 4.1 of the BAT-OT document. The FPP will establish quarantine procedures.
3.3 Waste tracking *1. You must use a waste tracking system to hold up-to-date information about the available capacity of the waste quarantine, reception, general and bulk storage areas of your facility including treatment residues and end of waste product materials.* *2. Your waste tracking system must hold all the information generated during:* • *pre-acceptance* • *acceptance* • *non-conformance or rejection* • *storage* • *treatment* • *removal off Site* *This information must be readily accessible.* *3. You must create records and update them to reflect deliveries, on-site treatment and despatches. This can be done on a 'loads received' basis. Your tracking system will also operate as a waste inventory and stock control system. It must include this information as a minimum:* • *the date the waste arrived on-Site* • *the producer's details (or unique identifier)* • *a unique reference number*	SUEZ employs a waste tracking system which stores all the information on each batch throughout the waste stream's lifecycle on Site. This will include all the listed requirements.

Appropriate Measure	**Compliance**
• *waste pre-acceptance and acceptance information* • *the quantity delivered* • *the intended treatment route* • *accurate records of the nature and quantity of wastes held on Site, including all hazards – and identifying the primary hazards and presence of any regulated chemicals such as POPs* • *where the waste is physically located on Site* *4. The tracking system must be able to report:* • *the total quantity of waste present on Site at any one time* • *a breakdown by type of the waste quantities you are storing pending treatment or transfer* • *the quantity of waste on Site compared with the limits authorised by your permit* • *the length of time the waste has been on Site* • *the quantity of end-of-waste product materials on Site at any one time, and, where applicable details of any non-conformances and rejections* *5. You must store back-up copies of electronic records off Site. Records must be readily accessible in an emergency.* *6. You must hold pre-acceptance and 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, hazardous waste consignment notes.*	
4. WASTE STORAGE, SEGREGATION AND HANDLING APPROPRIATE MEASURES	
4.1 General locations • *1. You must store waste in locations that minimise the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment.* • *2. You should design and operate your facility in a way that minimises the handling of waste.* • *3. You must store shredder non-metallic fractions under cover.* • *4. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools).* • *5. You must store all waste within the security protected area of your facility to prevent unauthorised access and vandalism.*	Materials storage and handling procedures are described in Section 4.1 of the BAT-OT document.
• ***4.2 Storage duration and capacity*** • *1. You must clearly establish the maximum storage capacity of the Site and designated storage areas and you must not exceed these maximum capacities.* • *2. You must define capacity in pile sizes as well as tonnage. You must regularly monitor the quantity of waste stored 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* • *3. 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.* • *4. 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.* • *5. 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.* • *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.* • *7. You must not carry out activities that represent a clear fire risk within any storage area. Examples include:* • *grinding and cutting repairs within the storage area welding or brazing of metalwork within the storage area*	1. Waste will be stored in accordance with the procedures outlined in Section 4 of the BAT-OT document and measures outlined in the Site's Fire Prevention Plan (FPP). These outline materials storage duration and capacity. 2. Pile sizes are described in the FPP. Pile sizes and storage are clearly defined on the waste storage plan appended to the FPP and the proposed site layout drawing Sgl-LITH-LAY-0625-01 and described in the BAT-OT. 3. A tracking system is used to ensure waste does not accumulate or exceed duration periods. 4. Waste storage is clearly defined on the proposed site layout drawing Sgl-LITH-LAY-0625-01 and described in the FPP and BAT-OT 5. The type of waste accepted at the facility will not attract pests and vermin. 6. This requirement will be incorporated into the facility's operational procedures. Maintenance and inspection procedures are described in the BATOT. 7. These aspects are covered in the FPP.

Appropriate Measure	**Compliance**
• *smoking* • *parking of normal road vehicles except while unloading or loading* • *recharging forklift truck or power tool batteries*	
4.3 Dangerous Substances and Explosive Atmospheres Regulation 2002 (DSEAR) *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 Dangerous Substances and Explosive Atmospheres Regulation 2002 (DSEAR).*	A DSEAR assessment will be carried out for the full extent of the plant as part of the detailed design.
4.4 Battery storage *1. You must check for damage and the chemistry type of any batteries:* • *produced through depollution activities on site* • *accepted as discrete loads* *You must do this before allocating them to the storage area.* *2. You must isolate damaged batteries from other batteries.* *3. You must store batteries in either appropriate weatherproof containers, or in appropriate containers within a building.* *4. You must store:* • *lead acid batteries upright with terminals taped off or capped in acid proof containers to prevent leaks and short circuits* • *nickel metal hydride (Ni-MH) batteries in a way that will prevent them being damaged* *5. You must not mix batteries of incompatible chemistries, for example lead acid batteries with Ni-MH batteries.* *6. You must store Li-ion batteries from electric vehicles separately from other batteries. You must store them in a way that prevents them from:* • *coming into contact with any liquids* • *being damaged* • *being exposed to high temperatures*	1. This will be part of waste acceptance procedures. 2. Batteries will be stored according to classification and damaged batteries will be isolated from other batteries; 3. The batteries and battery materials will be transported to site by authorised carriers in suitably approved packaging on pallets. 4. Batteries will be stored in a secure battery container within dedicated sealed containers. 5 - 6. Batteries and battery materials are stored with the aim of ensuring that different types of waste are stored separately to ensure they can be reused or recovered more easily, and transfer notes can be completed correctly. All wastes delivered and accepted to the site are directed to specific areas for storage (or treatment prior to storage). There will be no mixing of different waste types.
5. WASTE TREATMENT APPROPRIATE MEASURES	
5.1 General waste treatment *1. Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise the waste treatment process to make sure you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it.* *2. The treated output material must meet your expectations and be suitable for its intended disposal or recovery route.* *3. You must identify and characterise emissions from the process and take appropriate measures to control them at source.* *4. 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.* *5. 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 include:* • *unexpected releases* • *start-up* • *momentary stoppages* • *shut-down* • *deflagrations* *6. You should use material flow analysis for relevant contaminants in the waste to help identify their flow and fate. You should use the analysis to determine the appropriate treatment for the waste either directly at the site or at any subsequent treatment site. Material flow analysis considers the contaminant quantity in the:* • *waste input* • *different waste treatment outputs* • *waste treatment emissions* *You should use the analysis and your knowledge of the fate of the contaminants to make sure you correctly treat and either destroy or remove them.* *The use of material flow analysis is risk-based and should consider:* • *the hazardous properties of the waste*	1. The process has been designed to treat end-of-life Li-ion batteries as well as waste battery materials from the manufacturing of Li-ion batteries. The batteries and battery materials may be processed batchwise, single stream, or in a mix of hazardous waste and non-hazardous waste to provide maximum operational flexibility and traceability to supplier. 2. The process has been designed to separate the batteries into recyclable waste streams. If specifications are not achieved modifications will be made. 3. See BATOT Section 17. 4. See BATOT. 5. See BATOT. 6. The aim of the process is to maximise recovery by separation into different waste streams and residual waste is minimised. The process and technology is designed to produce materials of suitable specification for onward recovery. All resulting waste streams will be characterised and appropriately classified and coded. See Section 8 of the BATOT. 7. The process uses a relatively homogenous waste feedstock and has been designed to treat the narrow range of waste types accepted at the site. Therefore it is unlikely that the site will cause breaches if it is operated in accordance with the techniques described in the BATOT.

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• *the risks posed by the waste in terms of process safety* • *occupational safety and environmental impact* • *knowledge of the previous waste holder(s)* *A treatment process may destroy certain substances in the waste. It could also put substances into the air, water or the ground, or have residues which are sent for disposal. The weight of these outputs should be minimised. The treatment may produce residues for recovery or reuse and the weight of these substances should be maximised.* *7. You must not proceed with the treatment if your risk assessment or material flow analysis show that losses from a process will cause:* • *the breach of an environmental quality standard* • *the breach of a benchmark* • *a significant environmental impact*	
5.2 Metal shredding plant and downstream processes *1. The metal shredding plant and downstream plant and processes must be specifically designed, commissioned and operated to be fit for purpose.* *2. 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:* • *working instructions* • *staff training* • *appropriate process control measures* • *monitoring systems, alarms and interlocks* • *plant maintenance* • *checks* • *audits* • *emergency procedures* *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.* *3. 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:* • *air classification* • *all-metal separator* • *electromagnetic separation of non-ferrous metals* • *manual separation* • *magnetic separation* • *density separation* • *vibration tables either at the shredding facility or elsewhere* *4. You must sample and analyse the fractions produced by these treatment processes to accurately classify and code the waste. You should do this in accordance with the waste classification guidance.* *5. You must not use a waste code for a single material fraction, such as plastic, unless the process is specifically aimed to produce that single fraction. Contamination by other materials must be negligible.* *6. You must also fully characterise and classify process solutions and washings from density separation processes before determining suitable disposal options.*	1. The shredder is specifically designed for use for batteries. 2. The design of the plant has considered physical hazards and includes an assessment of the environmental risk, emissions from the plant and process, preventative and protective measures and process management. 3. Not relevant; however the shredder is located within an enclosed building. 4. Fractions produced by the treatment process will be sampled and characterised to accurately classify and code the waste. You should do this in accordance with the waste classification guidance. 5. The appropriate EWC codes will be classified in accordance with WM3. 6. Outputs from the Zig-Zag Density Separator are defined in Section 1.4 of the BATOT.
5.3 POPs *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.*	It is understood that wastes accepted at the site do not contain POPs. If necessary SUEZ will assess materials containing plastics for POPs in line with published environmental guidance in POPS contained in different wastes. . Materials containing POPs will be sent for onwards treatment.

Appropriate Measure	**Compliance**
2. You must treat any POPs waste as required by article 7 of Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on POPs. *This means the treatment must make sure the POP content is destroyed, or irreversibly transformed. An example would be by incineration or similar thermal treatment. You must not recycle this plastic.* *3. You must therefore assess plastic containing fractions at each stage in the treatment process to establish whether the threshold is exceeded. See further information on identifying and disposing of POPs contaminated waste.* **1.1.1 Separating POPs waste from non-POPs waste** *4. You can treat any plastic that is POPs waste to separate the POPs containing fraction from the non-POPs containing plastic.* *For example, you can use density separation to separate plastic containing all brominated flame retardants (BFR) from that which does not. You may then recycle the non-BFR plastic (provided it does not contain any other POP) but you must destroy or irreversibly transform the BFR plastic.* *5. You must fully characterise and classify the following (including for POPs) before deciding on suitable disposal options:* • *process solutions and washings from density separation processes* • *solid fractions produced by any process*	
5.4 Antimony trioxide *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.*	Antimony trioxide will be considered when SUEZ is classifying plastic containing fractions of waste treatment process outputs.
5.5 Minimising diffuse emissions from the process *1. 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:* • *carrying out the activity using enclosed equipment or in a closed building* • *maintaining the enclosed equipment or building under an appropriate pressure* • *collecting and directing the emission to an appropriate abatement system* • *using a shredder system with water or foam injection into the mill* *2. To track and control changes to processes, you must have a written procedure for proposing, considering and approving changes to both:* • *technical developments* • *procedural or quality changes to the plant and processes* *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).*	1. Techniques to manage diffuse emissions are described in the BATOT and the ERA. 2. The facility's EMS will include procedures for managing changes to equipment and operating procedures; 3. All treatment plants are enclosed and vented to air using an appropriate system as per Section 13.1 of the BATOT.
5.6 Record keeping for all treatment residues *You must record in the computerised waste tracking system:* • *that a waste has been treated* • *what the treatment residues are and their weight*	SUEZ employs a waste tracking system which stores all the information on each batch throughout the waste stream's lifecycle on Site. The operator will conduct monitoring for the annual generation of residues via the recording of all output. To aid this, an inventory and tracking system will be kept of all input and output. Monitoring will consider any significant changes relating to the process.
6. EMISSIONS CONTROL APPROPRIATE MEASURES	
6.1 Point source emissions to air *1. You must contain the waste treatment process to make sure that you collect, extract and direct all process emissions to an appropriate abatement system for treatment before release.* *2. You must identify the main chemical constituents of the Site's point source emissions as part of the Site's inventory of emissions to air. You must include the speciation of volatile organic compounds (VOCs) if you have identified them in the emissions inventory and it is practicable to do so.*	1. Techniques to control point source releases to air are described in Section 13.1 the BATOT. 2. Point source emissions to air have been characterised in the Air Emissions Risk Assessment (AERA). 3. The fate of emission to air has been assessed in the AERA submitted with the application.

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3. You must assess the fate and impact of the substances emitted to air, following the Environment Agency's air emissions risk assessment methodology. *4. To reduce point source emissions to air (for example, dust, volatile organic compounds and odour) from the treatment of waste, you must use an appropriate combination of abatement techniques, including one or more of the following systems:* • *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.* *6. Where monitoring is required, including for odour, you must install a suitable monitoring point. Monitoring points will be required to meet MCERTS standards.* *7. Your procedures must make sure you correctly install, operate, monitor and maintain abatement equipment. For example, this includes monitoring and maintaining:* • *appropriate flow and chemical concentration of scrubber liquor* • *the handling and disposal or regeneration of spent scrubber or filter medium*	4. The first LEV serves the shredder; the second LEV system serves the sorting plant. The first LEV system serves the shredder. Dust abatement is provided by an ATEX rated baghouse filter and collection unit in addition to carbon filters. The second LEV system serves the sorting plant, utilising a baghouse filter situated inside the building, the contents of which are captured for further treatment. 5. Stack heights and vents are of suitable height for adequate dispersion. 6. Monitoring points will be installed in accordance with MCERTS standards. 7. Procedures for installation, operation, monitoring and maintaining abatement equipment will be in place, including for the operation of the abatement system.
6.2 Fugitive emissions to air (including odour) *1. You must use appropriate measures to prevent emissions of dust, mud and litter and odour.* *2. You must design, operate and maintain storage and treatment plant in a way that prevents fugitive emissions to air, including dust, organic compounds and odour. Where that is not possible, you must minimise these emissions.* *Storage and treatment plant includes associated equipment and infrastructure such as:* • *Shredders* • *conveyors* • *skips or containers* • *building fabric, including doors and windows* • *pipework and ducting* *3. You must minimise the number of potential diffuse dust and particulates emission sources, using a combination of the following:* • *limiting the drop height of material* • *using wind barriers* • *covering conveyor belts, including enclosure of transfer points* • *fitting spray nozzles or rubber flaps to the inlet and outlet of the shredder mill* • *using misting systems and wind barriers in areas with significant dust formation* • *venting pipe work and ducting to an appropriate abatement system to prevent fugitive emissions* *4. To make sure fugitive emissions are collected and directed to appropriate abatement, your treatment plant must use high integrity components (for example, seals or gaskets).* *5. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any of these wastes you must:* • *take appropriate, risk assessed measures to prevent and control emissions* • *prioritise their treatment or transfer*	1. See Section 16 of the BATOT for controls used to prevent emissions of litter and mud. Dust management is described in Sections 4.6 and 14. Odour management is described in Section 12. 2. The risk of diffuse emissions to air of dust, organic compounds and odour is low due to the use of fully enclosed building. Wastes accepted are not odorous or dusty. All wastes received and produced are stored in enclosed containers. All treatment takes place within an enclosed building. Dust extraction is present on processing equipment. 3. Techniques to minimise diffuse dust are provided in Sections 4.6 and 14 of the BATOT. 4. Processing equipment is constructed using high integrity equipment. 5. Waste pre-acceptance and waste acceptance procedures are in place to reduce the risk of accepting non-conforming wastes and managing them in the unlikely event that they are received on site.
Storage of odorous or dusty wastes *6. Where necessary, to prevent fugitive emissions to air from the storage and handling of odorous or dusty wastes, you should use a combination of the following measures (7 to 13).* *7. You should store and handle the waste within an enclosed building including:* • *light fractions of the shredder residue* • *dust derived from sweeping the waste treatment and storage areas* • *dust derived from the abatement equipment* *8. You should use fully enclosed material transfer and storage systems and equipment, for example:* • *conveyors*	6. – 16. All wastes are stored in containers. None of the wastes accepted or produced are odorous and waste acceptance procedures are in place to deal with any non-conforming waste. Waste treatment is undertaken within an enclosed building with LEV to an abatement system serving the shredder and screening steps. Emissions monitoring will be undertaken in accordance with the EA's MCERTs scheme as described in Section 13.1 of the BATOT.

Appropriate Measure	Compliance
• *hoppers* • *containers* • *tanks and skips* *9. You should keep enclosed buildings and equipment under adequate negative pressure with an appropriate abated air circulation and extraction system. Where possible, locate air extraction points close to potential emissions sources.* *10. You should:* • *use fast-acting or 'airlock' doors that default closed* • *dampen potential sources of diffuse dust emissions (such as the shredder inlet and outlet, 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.* *12. You must design and operate the shredder plant using appropriate process interlocks. The plant should not operate unless it is enclosed and contained, for example, only working when the loading door on the hopper is closed or sealed.* *13. You must contain and extract dust emissions from the shredder plant to an appropriate abatement system, for example HEPA air filtration.* *14. Where ambient dust monitoring is required it must be carried out by MCERTS qualified staff.* *15. You must use monitoring equipment that meets as a minimum the MCERTS Performance Standards for Indicative Ambient Particulate Monitors. You must calibrate the equipment following the manufacturer's recommendations and it must be capable of providing representative data that accurately reflect PM10 levels produced operations at the site.* *16. Where a dust management plan is required, you must develop and implement it following our guidance.*	
Maintenance and cleaning *17. You must set up a leak detection and repair programme. You must use it to promptly identify and mitigate any fugitive emissions from treatment plant and associated infrastructure (such as pipework, conveyors, tanks).* *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.* *19. Your maintenance and cleaning schedules must make sure that your plant is regularly cleaned to avoid large-scale decontamination activities.* *20. You must take measures to prevent the corrosion of plant and equipment (for example, conveyors or pipes). This includes:* • *selecting and using appropriate construction materials* • *lining or coating equipment with corrosion inhibitors* • *regularly inspecting and maintaining plant* *21. You must have an appropriate regular maintenance programme covering all buildings, plant and equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases.* *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.*	Operational control, preventative maintenance and calibration measures are summarised in Section 2.3.1 of the BATOT document. In-process controls for inspection, maintenance and monitoring are outlined in Section 10 of the BAT-OT document. 17. High integrity equipment has been selected. The facility's operational procedures will include leak detection and repair programme. 18. Regular housekeeping will be carried out. 19. As above. 20. Appropriate construction materials, lining and coating of equipment with corrosion inhibitors and regular inspection and maintenance of plant will be undertaken to prevent the corrosion of plant and equipment. 21. Maintenance procedures will be in place to cover all the aspects listed. 22. Not applicable.
Odorous wastes *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.* *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 masking agents to be appropriate measures for the treatment of odorous emissions.* *25. You must monitor and maintain 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.* *26. Contaminated waters have potential for odours. You must store them in containers or enclosed tanks that are vented to an abatement system, or store them in containers.* *27. Where you expect odour pollution at sensitive receptors, or it has been substantiated, you must periodically monitor odour emissions using European (EN) standards. For example, either:*	Not relevant: the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature. See section 12 of the BAT-OT.

Appropriate Measure	Compliance
• *dynamic olfactometry according to EN 13725 to determine the odour concentration* • *EN 16841-1 or -2 to determine the odour exposure* *If you are using alternative methods for which no EN standards are available (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 set up, implement and regularly review an odour management plan. It must be part of your management system and include all of the following elements: • actions and timelines to address any issues identified • a procedure for conducting odour monitoring • a procedure for responding to identified odour incidents, for example, complaints • an odour prevention and reduction programme designed to identify the source(s), to characterise the contributions of the sources and to implement prevention and reduction measures 29. Where an odour management plan is required, you must develop and implement it following our guidance on odour management plans.	
Deflagration Management *30. To prevent deflagrations and to reduce emissions where deflagrations have occurred, we may require a deflagration management plan. This should include:* • *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* • *a review of historical deflagration incidents and remedies and sharing deflagration knowledge* • *a protocol for responding to deflagration incidents* *31. You must also have one or both of the following:* • *pressure relief dampers, to relieve pressure waves from deflagrations that may otherwise cause damage and subsequent emissions* • *pre-shredding – a low speed shredder installed upstream of the main shredder* *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.*	30. Deflagration plan not requested. 31. Pre-shredding is used. 32. Pre-shredding is used.
6.3 Emissions of noise and vibration *1. You should design the layout of the facility to locate potential sources of noise (including building exits and entrances) away from sensitive receptors and boundaries. You should locate buildings, walls, and embankments so they act as noise screens.* *2. You must use appropriate measures to control noise, for example, including:* • *adequately maintaining plant or equipment parts that may become noisier as they deteriorate – such as bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery* • *closing doors and windows of enclosed areas and buildings* • *avoiding noisy activities at night or early in the morning* • *minimising drop heights and the movement of waste and containers* • *using broadband (white noise) reversing alarms and enforcing the on-site speed limit* • *using low-noise equipment, for example, drive motors, fans, compressors and pumps* • *adequately training and supervising staff* • *where possible, providing additional noise and vibration control equipment for specific noise sources – such as noise reducers or attenuators, insulation, or sound-proof enclosures* • *including pressure relief control on shredder plant enclosures to take account of possible deflagration incidents* *3. Where noise or vibration pollution at sensitive receptors is expected, or has been substantiated, you must create, use and regularly review a noise and vibration management plan. This must be part of the environmental management system, and must include:* • *actions and timelines to address any issues identified*	1. The facility is not close to sensitive receptors. 2. The ERA submitted with this application provide details of appropriate measures in place to prevent and reduce risk of noise. 3 – 5. No Noise assessment/Management plan to be submitted as part of application given low risk of a noise impact. The submitted ERA summary concluded that a detailed management plan is not required.

Appropriate Measure	Compliance
• *a procedure for noise and vibration monitoring* • *a procedure for responding to identified noise and vibration events, for example, complaints* *4. Your noise and vibration management plan should also include a noise and vibration reduction programme designed to:* • *identify the sources of noise and vibration* • *measure or estimate noise and vibration exposure* • *characterise the contributions of the sources* • *implement prevention and reduction measures* *5. Where a noise and vibration management plan is required, you must develop and implement it following our guidance.*	
6.4 Point source emissions to water and sewer *1. 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.* *2. You must assess the fate and impact of the substances emitted to water and sewer, following the Environment Agency's risk assessment guidance.* *3. Except for uncontaminated surface water, for example roof drainage, discharges to water or sewer must comply with the conditions of an environmental permit or trade effluent consent. Relevant sources of waste-water include (but are not limited to):* • *water or condensate collected from treatment processes* • *waste compactor runoff* • *vehicle washing* • *vehicle oil and fuel leaks* • *washing of containers* • *spills and leaks in waste storage areas* • *loading and unloading areas* • *uncovered storage areas* *4. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques, including one or more of the following:* • *preliminary or primary treatment – for example, equalisation, neutralisation or physical separation* • *physico-chemical treatment – for example, adsorption, precipitation, chemical oxidation or reduction* • *solids removal – for example, coagulation, sedimentation, filtration or flotation*	1. See section 15.3 of the BAT-OT. 2 - 4. A surface water risk assessment is not required as there are no process effluent discharges.
6.5 Fugitive emissions to land and water *1. You must use appropriate measures to control potential fugitive emissions and make sure that they do not cause pollution. See the guidance on emissions to water and leaks from containers.* *2. You must have these in all operational areas of the facility:* • *an impermeable surface* • *sealed construction joints* • *spill containment kerbs* • *a sealed drainage system* *3. The sealed drainage system must collect all surface water run-off and channel it to a blind sump unless you can lawfully discharge it.* *4. You must collect and treat separately each water stream generated at the facility, for example, surface run-off water or process water. Separation must be based on pollutant content and treatment required. In particular you must make sure you segregate uncontaminated water streams from those that require treatment.* *5. You must use suitable drainage infrastructure to collect surface drainage from areas of the facility where you store, handle and treat waste. Drainage must be effective to make sure waste is not stored or treated in standing water..* *6. Depending on the pollutant content, you must either:* • *recirculate what you have collected* • *discharge it in accordance with an environmental permit or trade discharge consent*	1. See Section 15 for measures taken to control potential fugitive emissions. 2. All measures described are present for operational areas of the facility. 3. External areas of the site on which waste is stored drain to a sealed surface water lagoon. 4. No process water generated at the site. 5.The site benefits from a drainage system as described in section 6 of the BATOT. 6. No effluent generated. 7. Maintenance procedures are in place. 8. The site benefits from a sealed lagoon. 9. Water held in buffer storage will be tested prior to release. 10. Wash waters from cleaning activities will be collected in sealed drainage system for off-site disposal. 11. There is no on-site storage of fuels or oils. The site's drainage system incorporates a Class 1 full retention interceptor.

Appropriate Measure	Compliance
• *send it for further treatment* *7. You must have design and maintenance provisions in place to detect and repair leaks. These must include regularly monitoring, inspecting and repairing equipment and minimising underground equipment and infrastructure.* *8. You should provide appropriate buffer storage capacity at your facility to store waste waters, taking into account:* • *potential abnormal operating scenarios and incidents* • *the nature of any polluting substances and their impact on the downstream waste water treatment plant and receiving environment* *9. You must have appropriate measures in place to monitor, treat and reuse the water held in the buffer storage before discharging.* *10. You must take measures to prevent emissions from washing and cleaning activities, including:* • *directing liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for off-Site disposal – you must not discharge them to surface or storm drains* • *where possible, using biodegradable and non-corrosive washing and cleaning products* • *storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains* • *preparing cleaning or disinfection solutions in contained areas of the Site and never in areas that drain to the surface water system* *11. Where relevant, you must have measures to prevent pollution from the on-site storage, handling and use of oils and fuels.*	
Spill response plan *12. You must produce and implement a spillage response plan and train staff to follow it and test it.* *13. Your procedures and associated training must make sure you deal with spillages immediately.* *14. You must keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. Make sure kits are replenished after use.* *15. You must take measures to stop spillages from entering drains, channels, gullies, watercourses and unmade ground. You must make available proprietary sorbent materials, sand or drain mats for use when required.* *16. You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage.*	12 - 16 The site will have a spillage response plan to include all aspects. Daily inspections of the site building and external areas are undertaken to check for leaks and spillages to ensure that any leaks and spillages identified are contained within the site. The containment measures in place at the site are described in Section 6 of the BATOT. These are designed to contain accidental spillages and also firewater in the case of an incident. These measures will ensure there are no fugitive emissions to surface water. Staffing, Competence and Training is detailed within section 2.3.3 of the BATOT. Spill kits will be provided as per the site FPP.
Designing and maintaining surfacing and subsurface structures *18. For subsurface structures, you must:* • *establish and record the routing of all site drains and subsurface pipework* • *identify all sub-surface sumps and storage vessels* • *engineer systems to minimise leakages from pipes and make sure they are detected quickly if they do occur, particularly where hazardous substances are involved* • *provide secondary containment or leakage detection for sub-surface pipework, sumps and storage vessels* • *establish an inspection and maintenance programme for all subsurface structures, for example, pressure tests, leak tests, material thickness checks or CCTV* *19. For surfacing, you must design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account:* • *collection capacities* • *surface thicknesses* • *strength and reinforcement* • *falls* • *materials of construction* • *permeability* • *resistance to chemical attack* • *inspection and maintenance procedures* *20. You must have an inspection and maintenance programme for impermeable surfaces and containment facilities.*	18 – 20. See Section 6 of the BATOT for proposed measures.

Appropriate Measure	**Compliance**
Tanks and bunding *21. You must bund all above-ground tanks containing liquids whose spillage could be harmful to the environment. Bunds must:* • *be impermeable and resistant to the stored materials* • *have no outlet (that is, no drains or taps) and drain to a blind collection point* • *have pipework routed within bunded areas with no penetration of contained surfaces* • *be designed to catch leaks from tanks or fittings* • *have a capacity greater than 110 percent of the largest tank or 25 percent of the total tankage, whichever is the larger* • *have regular visual inspections – any contents must be pumped out or otherwise removed under manual control after checking for contamination* • *be fitted with a high-level probe and an alarm (as appropriate) if not frequently inspected* • *have tanker connection points within the bund (where possible), otherwise provide adequate containment* • *have programmed engineering inspections – normally visual, but extending to water testing if structural integrity is in doubt* • *be emptied of rainwater regularly to maintain their containment capacity*	See section 6 of the BAT-OT for proposed measures.
7. EMISSIONS MONITORING AND LIMITS APPROPRIATE MEASURES	
1. Where you are required to monitor emissions to comply with the requirements of your environmental permit you must follow our monitoring your emissions guidance. *2. You must create and maintain an inventory (emissions inventory) of point source emissions to air and water (including emissions to sewer) for your facility.* ***7.1 Emissions to air*** *1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to air, such as the:* • *average values and variability of flow and temperature* • *average concentration and load values of relevant substances and their variability* • *flammability, lower and higher explosive limits and reactivity* • *presence of other substances that may affect the waste gas treatment system or plant safety – for example, oxygen, nitrogen, water vapour, dust* *2. Monitoring locations must meet MCERTS standards. Monitoring must be carried out using MCERTS qualified accredited methods and MCERTS certified staff. Further guidance can be found in our guidance M1 sampling requirements for stack emissions monitoring.*	Emissions to air will be monitored in accordance with the monitoring standards and methods detailed in Section 13.1 of this BATOT document.
7.2 Emissions limits and monitoring requirements *1. You must apply the following emission limits and monitoring requirements for point source emissions to air.* *2. 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.* ***Dust emissions*** *3. You must make sure dust monitoring is done every 6 months using method BS EN 13284-1.* *The emission limits are as follows. When using:* • *fabric filters – 5 mg/m3* • *other abatement techniques – a higher emission limit of 10 mg/m3 may be appropriate* *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.* ***Other point source emissions to air*** *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 assessment.* *6. You must also comply with any other emission limits or monitoring requirements set in your environmental permit.*	Emissions to air will be monitored in accordance with the monitoring standards and methods detailed in Section 13.1 of this BATOT document.

Appropriate Measure	Compliance
BFRs *You should:* • *do annual monitoring* • *report* ***Dioxins-like polychlorinated biphenyls*** *Where these are identified in your inventory of point source emissions to air you should:* • *do annual monitoring following standard EN1948-4* • *report results from one sampling period of at least 6-8 hours* ***Metals and metalloids except mercury*** *Where these are identified in your inventory of point source emissions to air you should:* • *do annual monitoring following standard EN14385* • *report results as the average value of 3 consecutive representative measurements of at least 30 minutes each* ***Polychlorinated dibenzo-p-dioxin/furan(s)*** *Where these are identified in your inventory of point source emissions to air you should:* • *do annual monitoring following standard EN1948-1 Parts1, 2 and 3* • *report results from one sampling period of at least 6-8 hours* ***Total VOCs*** *You should:* • *do 6-monthly monitoring following standard BS EN 12619* • *report results as the average value of 3 consecutive representative measurements of at least 30 minutes each*	
7.3 Emissions to water or sewer *1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to water or sewer, such as:* • *average values and variability of flow, pH, temperature, and conductivity* • *average concentration and load values of relevant substances and their variability – for example, COD (chemical oxygen demand) and TOC (total organic carbon), nitrogen species, phosphorus, metals, priority substances or micropollutants* • *data on bio-eliminability – for example, BOD (biochemical oxygen demand), BOD to COD ratio, Zahn-Wellens test, biological inhibition potential, for example, inhibition of activated sludge* *2. For relevant emissions to water or sewer 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 either be at the:* • *inlet or outlet (or both) of the pre-treatment* • *inlet to the final treatment* • *point where the emission leaves the facility boundary* • *Total suspended solids – Emission limit 60 mg/l – every month* *3. You must comply with any other emission limits or monitoring requirements set in your environmental permit.* *4. In addition to any other parameters specified by your permit, you must monitor the following emissions to water:* ***Hydrocarbon Oil Index (HOI)*** *You must comply with the following:* • *monthly monitoring following EN ISO-0377-2* • *the emission limit for metal is 10mg/l whether direct or indirect (to water body or to sewer)* • *if you discharge directly to a water body, you must monitor TOC or COD – TOC is the preferred monitoring parameter* ***TOC*** *You must comply with the following:* • *monthly monitoring following EN1484*	There will be no process or trade effluent discharged from the site. Emissions of rainfall runoff from external yard areas will be monitored as detailed in Section 17.4 of the BATOT document.

Appropriate Measure	Compliance
• *an emission limit of 60mg/l* ***COD*** *You must comply with the following:* • *monthly monitoring* • *an emission limit of 80mg/l* ***Total suspended solids (TSS)*** *If you discharge directly to a water body:* • *you must monitor TSS monthly in accordance with EN 872* • *the emission limit of 60mg/l* *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).* *These emission limits apply whether the discharge is to a water body or to the sewer:* ○ *arsenic (As) – emission limit 0.05 mg/l* ○ *cadmium (Cd) – emission limit 0.05 mg/l* ○ *chromium (Cr) – emission limit 0.15 mg/l* ○ *copper (Cu) – emission limit 0.5 mg/l* ○ *nickel (Ni) – emission limit 0.5 mg/l* ○ *lead (Pb) – emission limit 0.3 mg/l* ○ *zinc (Zn) – emission limit 2 mg/l* ○ *mercury (Hg) – emission limit is 5 ug/l (SORT microgram) and the relevant standards are EN ISO 17852, EN ISO 12846* *PFOA, PFOS and deca BDE should be monitored monthly. There is no EN standard available for the monitoring and no emission limit has been set.*	
8. PROCESS EFFICENCY APPROPRIATE MEASURES	
For your facility, you must monitor and review the annual quantity of: • *water, energy and raw materials used* • *residues and waste water produced* *You must do this at least once every year.* ***8.1 Energy efficiency*** *1. You must create and implement an energy efficiency plan at your facility. This must:* • *define and calculate the specific energy consumption of the activity (or activities) you do and waste stream(s) you treat* • *set annual key performance indicators – for example, specific energy consumption (expressed in kWh/tonne of waste processed)* • *plan periodic improvement targets and related actions* *2. You must regularly review and update your energy efficiency plan as part of your facility's management system.* *3. You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment processes.* *4. You must regularly review and update your energy balance record as part of your facility's management system, alongside the energy efficiency plan.* *5. You must have operating, maintenance and housekeeping measures in place in relevant areas, for example, for:* • *air conditioning, process refrigeration and temperature exchange systems (leaks, seals, temperature control, evaporator or condenser maintenance)* • *the operation of motors and drives* • *compressed gas systems (leaks, procedures for use)*	See Section 7 of the BATOT. 1 – 7. See Section 9 of the BATOT.

Appropriate Measure	**Compliance**
• *steam distribution systems (leaks, traps, insulation)* • *space heating and hot water systems* • *lubrication to avoid high friction losses* • *boiler operation and maintenance, for example, optimising excess air* • *other maintenance relevant to the activities within the facility* *6. You must have measures in place to avoid gross energy inefficiencies. These should include, for example:* • *keeping the shredder infeed stable* • *insulation* • *containment methods (such as seals and self-closing doors)* • *avoiding unnecessary discharge of heated water or air (for example, by fitting simple control systems such as timers and sensors)* *7. You should implement additional energy efficiency measures at the facility as appropriate, following our guidance on energy efficiency standards for industrial plants.*	
8.2 Raw materials (installations only) *1. You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact.* *2. You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products.* *3. You must justify the continued use of any substance for which there is a less hazardous alternative.* *4. You must have quality assurance procedures in place to control the content of raw materials.*	Minimal raw material used at the site. See Section 7 of the BATOT.
8.3 Water use (installations only) *1. You must take measures to make sure you optimise water consumption to:* • *reduce the volume of waste water generated* • *prevent or, where that is not practicable, reduce emissions to soil and water* *2. You must take these measures:* • *implement a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances)* • *optimising the use of washing water (for example, dry cleaning instead of hosing down, using trigger control on all washing equipment)* • *recirculating and reusing water streams within the plant or facility, if necessary after treatment* • *reducing the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids) where relevant* *3. You must carry out a regular review of water use (a water efficiency audit) at least every 4 years.* *4. You must also:* • *produce flow diagrams and water mass balances for your activities* • *establish water efficiency objectives and identify constraints on reducing water use beyond a certain level (usually this will be site specific)* • *identify the opportunities for maximising reuse and minimising use of water* • *have a timetabled improvement plan for implementing additional water reduction measures* *5. To reduce water use and associated emissions to water, you should apply these general principles in sequence:* • *use water efficient techniques at source where possible* • *reuse water within the process, by treating it first if necessary – if not practicable, use it in another part of the process or facility that has a lower water quality requirement* • *If you cannot use uncontaminated roof and surface water in the process, you should keep it separate from other discharge streams – at least until after you have treated the contaminated streams in an effluent treatment system and have carried out final monitoring.*	See Section 7 of the BATOT. Water is not used as part of the process.

Appropriate Measure	Compliance
6. You should establish the water quality requirements associated with each activity and identify whether you can substitute water from recycled sources. Where you can, include it in your improvement plan. *7. Where there is scope for reuse (possibly after some form of treatment) you should keep less contaminated water streams, such as cooling waters, separate from more contaminated streams.* *8. You must minimise the volume of water you use for cleaning and washing down by:* • *vacuuming, scraping or mopping in preference to hosing down* • *reusing wash-water (or recycled water) where practicable* • *using trigger controls on all hoses, hand lances and washing equipment* *9. You must directly measure fresh water consumption and record it regularly at every significant usage point, ideally on a daily basis.*	
8.4 Waste minimisation, recovery and disposal *1. You must have and implement a residues management plan that:* • *minimises the generation of residues arising from waste treatment* • *optimises the reuse, regeneration, recycling or energy recovery of residues, including packaging* • *makes sure you properly dispose of residues where recovery is technically or economically impractical* *2. Where you must dispose of waste, you must carry out a detailed assessment identifying the best environmental options for waste disposal.* *3. You must regularly review options for recovering and disposing of waste produced at the facility. You must do this as part of your management system to make sure you are using the best environmental options and promoting the recovery of waste where technically and economically viable.*	See Section 8.4 of the BATOT document.

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Appendix C Appropriate Measures for WEEE Treatment

Appendix C WEEE Treatment EA Appropriate Measures

Appropriate Measure	Compliance
4. WASTE STORAGE, SEGREGATION AND HANDLING APPROPRIATE MEASURES	
4.1 General waste storage *1. You should design and operate your facility in a way that minimises the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment.* *2. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools).* *3. You must store all waste within the security protected area of your facility to prevent unauthorised access and vandalism.* ***Storage duration and capacity*** *4. You must clearly establish the maximum storage capacity of the Site and designated storage areas and you must not exceed these maximum capacities.* *5. You must define capacity in pile sizes as well as tonnage. You must regularly monitor the quantity of waste stored 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.* *6. Where relevant, you must conform to Health and Safety Executive (HSE) guidance and standards.* *7. You must not accumulate waste unnecessarily. You must treat wastes, or remove them from the Site, as soon as possible.* *8. You must store all waste in a way that allows easy inspection. You must maintain safe access between piles of wastes. There must always be pedestrian and vehicular access (for example, forklift) to the whole of the storage area.* *9. You must store and handle waste in a way that prevents pests and vermin. You must have specific measures and procedures in place to identify and manage any wastes that are causing pests or vermin at your Site.* *10. Waste storage areas and stored equipment must be subject to frequent inspection to make sure that any leaks, spillages of liquids, dust or loose material are identified and managed appropriately, and fire breaks are maintained. You must keep written records of the inspections. You must rectify and log any spillages of waste.* *11. You must not carry out activities that represent a clear fire risk within any storage area. Examples include:* • *Grinding* • *welding or brazing of metalwork* • *smoking* • *parking of normal road vehicles except while unloading or loading* • *recharging forklift truck or power tool batteries* *12. You should assess areas of the Site where explosive atmospheres could occur. Where appropriate these must be classified into hazardous zones in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).* *13. Outdoor waste storage areas must have an impermeable surface with a sealed drainage system. It must collect all surface water run-off and channel it to a blind sump unless it may be lawfully discharged.* *14. Indoor waste storage areas must have an impermeable surface and you must provide spillage collection facilities.* *15. You must use weatherproof covering to store any items that may be reused as whole appliances or may have components recovered from them for reuse. The type of covering will depend on the types and quantities of waste but must ensure the WEEE is protected from the weather.*	1 – 3. Materials storage and handling procedures are described in Section 8 of the BATOT document. 4. Waste will be stored in accordance with the procedures outlined in Section 4 and Section 8 of the BATOT document and measures outlined in the Site's Fire Prevention Plan (FPP). These outline materials storage duration and capacity. 5. Pile sizes are described in the FPP and confirm to that guidance. Storage are clearly defined on the proposed site layout drawing Sgl-LITH-LAY-0625-01 and described in the FPP and BATOT. 6. HSE guidance and standards are followed where relevant (NOTE: this is not considered to be a relevant consideration for EPR). 7. A tracking system is used to ensure waste does not accumulate or exceed duration periods. 8. Waste storage is clearly defined on the proposed site layout drawing Sgl-LITH-LAY-0625-01 and described in the FPP and BATOT 9. The type of waste accepted at the facility will not attract pests and vermin. 10. This requirement will be incorporated into the facility's operational procedures. Maintenance and inspection procedures are described in the BATOT. 11. These aspects are covered in the FPP. 12. Prior operation SUEZ will undertake a DSEAR assessment for the facility and classified hazardous zones in accordance with the DSEAR Regulations, for example bag filters serving the shredder and sorting plant. 13 & 14. See section 6 of the BATOT. 15, 16, 17. All wastes are stored in containers and weatherproof if outside. 18. Facility has a spillage response procedure. 19. Procedures for driver training are included in the EMS. 20. Not applicable. 21. Facility only accepts batteries and lithium-ion battery materials. All wastes are stored in containers and weatherproof if outside. 22. Containers and storage areas are labelled.

Appropriate Measure	**Compliance**
16. You must also use weatherproof covering in areas used for storage of waste containing hazardous material or fluids where this is necessary to avoid contamination of surface water. This includes, but is not necessarily limited to, the storage of • *lamps and processed fractions* • *flat panel display equipment which may contain cold-cathode fluorescent lamp (CCFL) backlights and where these are processed by shredding, the shredded fractions* • *broken cathode ray tubes (CRTs) and CRT glass* • *shredded WEEE or plastic containing fractions that may be POPs waste* *17. Covering may still be required even if you have a consent to discharge surface water to sewer or if water is tankered away. For example, to avoid leached chemicals such as persistent organic pollutants from WEEE plastic entering the water environment.* *18. Any spillage or leakage resulting from the storage of WEEE or processed materials must be collected without delay using equipment and procedures appropriate to the type of spillage. The collected residues must be stored in a lidded, leakproof container. Any containers or surfaces affected by the spillage must be cleaned.* *19. You must train forklift drivers in the handling of waste, to minimise forklift truck damage to the integrity of containers or individual appliances.* *20. Any liquids removed from WEEE must be collected and stored in lidded, leakproof containers. Containers must be kept closed when not being filled and must be stored within a bunded area to contain any leakage or spillage.* *21. You must store the following separately and securely from other WEEE in leakproof containers to prevent leakage and spillage. Containers must be closed or stored under cover to prevent the accumulation of rainwater* • *batteries, capacitors and other similar components which could leak* • *any components which may contain residual liquids* *22. You must clearly label containers to identify their contents.* *23. Where lithium-ion batteries are stored (either separately or as mixed batteries) these must be recognised as a fire hazard and marked and stored accordingly.*	23. Lithium-ion batteries are recognised as a fire hazard and will be marked and stored accordingly as described in the FPP.
5. Waste Treatment Appropriate Measures	
5.2 General waste treatment *1. Where WEEE cannot be prepared for reuse it must be treated to maximise the recycling and recovery of materials whether that is at the same facility or by further downstream processing.* *2. You must fully understand, monitor and optimise your waste treatment process to make sure you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it or mix any hazardous outputs with any non-hazardous outputs.* *3. The treated output material must meet your expectations and you must fully classify and characterise them to ensure they are suitable for their intended disposal or recovery route.* *4. You must identify and characterise emissions from the process and take appropriate measures to control them at source.* *5. You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using.* *6. 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 may include:* • *unexpected releases* • *start up*	1. This is the purpose of the operation. 2. The lithium-ion batteries and lithium-ion battery materials may be processed batchwise, single stream, or in a mix of hazardous waste and non-hazardous waste to provide maximum operational flexibility and traceability to supplier. 3. The process has been designed to separate the batteries into recyclable waste streams If specifications are not achieved modifications will be made. 4. See BATOT. 5. See BATOT. 6. See BATOT. 7 – 11. The aim of the process is to maximise recovery by separation into different waste streams and residual waste is minimised. The process and technology is designed to produce materials of suitable specification for onward recovery. All resulting waste streams will be characterised and appropriately classified and coded. See Section 8 of the BATOT.

Appropriate Measure	Compliance
• *momentary stoppages* • *shut down* *7. You should use material flow analysis for relevant contaminants in the waste to help identify their flow and fate. You should use the analysis to determine the appropriate treatment for the waste either directly at the Site or at any subsequent treatment Site.* *8. Material flow analysis considers the contaminant quantity in the:* • *waste input* • *different waste treatment outputs* • *waste treatment emissions* *9. You should use the analysis and your knowledge of the fate of the contaminants to make sure you correctly treat and either destroy or remove them.* *10. The use of material flow analysis is risk-based considering:* • *the hazardous properties of the waste* • *the restricted chemicals in the waste* • *the risks posed by the waste in terms of process safety* • *occupational safety and environmental impact* • *knowledge of the previous waste holders* *11. A treatment process may destroy certain substances in the waste. It could also put substances into the air, water or the ground, or produce residues which are sent for disposal. You should minimise the weight of these outputs. The treatment process may produce residues for recovery or reuse and you should maximise the weight of these outputs.* *12. You must not proceed with the treatment if your risk assessment or material flow analysis indicates that losses from a process will cause:* • *the breach of an environmental quality standard* • *the breach of a benchmark* • *a significant environmental impact* *13. To track and control the process of change, you must have a written procedure for proposing, considering and approving changes to technical developments, or to procedural or quality changes.* *14. You must minimise the release of diffuse emissions to air from activities which may give rise to them (for example, shredding or granulating) by:* • *carrying out the activity using enclosed equipment or in an enclosed building* • *maintaining the enclosed equipment or buildings under an appropriate pressure* • *collecting and directing the emissions to an appropriate abatement system* *15. Unless you are preparing it for reuse, you must remove all fluids from WEEE along with those substances, mixtures and components listed in Annex VII of the WEEE Directive.* *16. Removal may be a staged process and may be undertaken at different facilities. You must be able to demonstrate either:* • *you have removed the substances, mixtures and components listed in Annex VII of the WEEE Directive from WEEE as required by the conditions of your permit* • *those substances, mixtures and components will be removed at a suitably authorised downstream treatment facility*	See BATOT for description of treatment and abatement processes. 12. The process uses a relatively homogenous waste feedstock and has been designed to treat the narrow range of waste types accepted at the site. Therefore it is unlikely that the site will cause breaches if it is operated in accordance with the techniques described in the BATOT. 13. These will be part of the facility's EMS. 14. See BATOT Section 14. 15-17. Not applicable. 18. Not relevant. 19. Not relevant 20 – 21. Weight of all outputs will be recorded. The treatment separates batteries into a number of waste streams suitable for recovery. 22 – 23. Not relevant – only batteries and lithium-ion battery materials will be accepted on site. 24 – 25. All batteries are stored in appropriate containers. 26 & 27. No treatment takes place outdoors. Indoor and outdoor areas have impermeable surfacing and sealed drainage in areas waste is stored. 28. Not relevant.

Appropriate Measure	Compliance
17. You must make sure that any substances, mixtures and components removed as part of your treatment process are subsequently recovered or disposed of at an appropriately permitted facility. *18. If you transfer partially treated WEEE to another Site you must properly describe it, so the recipient knows which treatments are complete and which still need to be done.* *19. You should no longer routinely find certain hazardous items and substances that were once used in electrical appliances but are now banned. However, they may still be present on occasions.* *20. You must monitor and record the outputs of your treatment activity, including their weight. The monitoring must be used to provide evidence that the treatment and removal of these components and substances has been carried out to a satisfactory standard.* *21. When removing components, you must safely remove the whole item where breaking it up might:* • *pollute the recyclate or waste stream* • *result in unacceptable emissions* *22. Components that you must always remove whole, that is intact and identifiable, (unless this guidance states specific circumstances where you do not need to) include:* • *capacitors containing polychlorinated biphenyls (PCBs)* • *mercury containing components* • *toner cartridges* • *components with asbestos* • *components with refractory ceramic fibres* • *components with radioactive substances* • *gas discharge lamps including CCFL backlights* • *cathode ray tubes* • *electrolyte capacitors containing substances of concern that have a height and/or diameter greater than 25mm or have a proportionately similar volume* • *batteries and powerpacks* *23. Instead of removing them as whole components, you may recover the following as fragments or materials using mechanical treatment:* • *chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) or hydrofluorocarbons (HFCs), hydrocarbons (HCs)* • *external electric cables* • *printed circuit boards* • *liquid crystal displays* • *the activated coating in cathode ray tubes (CRTs)* • *plastic with brominated flame retardants (BFRs)* *24. You may either:* • *sort batteries on site* • *send batteries as a mixture of chemistry types to a specialist battery treatment operator for sorting*	

Appropriate Measure	Compliance
25. You must pack and store lithium and lithium-ion batteries removed from WEEE during treatment in a way to minimise the likelihood of electrical shorting, physical impact and overheating. *26. All outdoor WEEE treatment areas must have an impermeable surface with a sealed drainage system. It must collect all surface water run-off and channel it to a blind sump unless it may be lawfully discharged.* *27. Indoor WEEE treatment areas must have an impermeable surface and you must provide spillage collection facilities appropriate to the materials being handled.* *28. WEEE treatment should take place under weatherproof covering such as a roofed building. Where this is not practicable, for example, due to the large size of the plant, appropriate measures must be taken to minimise the exposure of waste to rain and wind. This may include the covering of:* • *Hoppers* • *Conveyors* • *skips of treated materials* • *storage bays containing treated materials*	
5.4 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.* *7. You must make sure that any required sample is representative of the waste and has been taken by someone technically competent to do so. A representative sample is one that takes account of the full variation and any partitioning of the material.* *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.* *9. You must carry out sampling under normal operating conditions unless otherwise stated.* *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:* • *the actions you will take to improve performance in order to achieve the standards given, including any additional sampling and testing* • *the dates you will complete these actions by, including the dates for any additional sampling and testing* *11. Wherever possible you should sample waste fractions and residues in line with relevant guidance.*	1 & 2. A mass balance will be carried out at least once per year and this will be used to monitor operating performance. 3 - 11. Not applicable, as process monitoring does not require chemical analysis of waste fractions.

Appropriate Measure	**Compliance**
5.12 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.* *2. You must fully characterise and classify fractions produced by these processes.* *3. Where materials originate from WEEE that was POPs waste, fractions of plastic containing brominated flame retardants must be managed as POPs waste.* *4. Where materials originate from WEEE that was not POPs waste, fractions of plastic containing brominated flame retardants must be assessed to determine if they are POPs waste.* *5. You must fully characterise and classify (including for POPs) process solutions and washings from density separation processes before determining suitable disposal options. Where these originate from the treatment of POPs waste, any POPs must be destroyed.* *6. You must only use waste codes for single material outputs, for example plastic, where the treatment involved is aimed at producing a pure material fraction. Contamination by other materials must be negligible.* ***Process monitoring for the separation of BFR containing plastic*** *7. You must monitor at least once every 3 months how much BFR containing plastic is present in any fraction destined for recycling.*	1. A detailed description of the shredding process and downstream processes to further segregate shredded fractions is described in Section 4 of the BATOT document. 2. All fractions will be characterised and classified. 3. It is understood that wastes accepted at the site do not contain POPs. 4. It is understood that plastics in the wastes accepted at the site do not contain brominated fire retardants. (This will be verified by (2) above.) 5. Not relevant. 6. WM3 guidance will be used to ensure appropriate classification of waste outputs. 7. Not relevant; no BFR plastic is treated at the facility.
6. Emissions Control Appropriate Measures	
6.4 Point source emissions to water and sewer *1. 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.* *2. You must assess the fate and impact of the substances emitted to water and sewer, following the Environment Agency's risk assessment guidance.* *3. Except for uncontaminated surface water, for example roof drainage, discharges to water or sewer must comply with the conditions of an environmental permit or trade effluent consent. Relevant sources of waste-water include (but are not limited to):* • *water or condensate collected from treatment processes* • *waste compactor runoff* • *vehicle washing* • *vehicle oil and fuel leaks* • *washing of containers* • *spills and leaks in waste storage areas* • *loading and unloading areas* • *uncovered storage areas* *4. POPs may leach or wash out in particulates from some wastes, such as shredded WEEE plastic or granulated cable, if exposed to the weather. You must prevent the release of POPs to water or sewer by storing these wastes and any other shredded POPs waste under weatherproof covering.* *5. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques, including one or more of the following:* • *preliminary or primary treatment – for example, equalisation, neutralisation or physical separation* • *physico-chemical treatment – for example, adsorption, distillation or rectification, precipitation, chemical oxidation or reduction, evaporation, ion exchange, or stripping*	1 - 3. No process water generated 4. Not applicable to the waste types handled at the facility. 5. No process water generated.

Appropriate Measure	Compliance
• *biological treatment – for example, activated sludge process or membrane bioreactor* • *nitrogen removal – for example, nitrification and denitrification* • *solids removal – for example, coagulation and flocculation, sedimentation, filtration or flotation*	

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Appendix D Appropriate Measures for Chemical Waste

Appendix D Chemical Waste EA Appropriate Measures

Appropriate Measure	Compliance
4. WASTE STORAGE, SEGREGATION AND HANDLING APPROPRIATE MEASURES	
1. You must store waste in locations that minimise the handling of waste. Waste handling must be carried out by competent staff using appropriate equipment. *2. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools). You must store all waste within the secure area of your facility to prevent unauthorised access and vandalism.* *3. Where relevant, you must conform to HSE standards.* *4. You must clearly document the maximum storage capacity of your site and the designated storage areas. You must not exceed these maximum capacities. You should define capacity in terms of, for example, maximum tank or vessel capacities, tonnage and numbers of skips, pallets or containers. You must regularly monitor the quantity of stored waste on site and designated areas and check against the allowed maximum capacities.* *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* • *Prevent incompatible wastes coming into contact with each other* • *make sure that fire cannot spread* *7. Secondary and tertiary containment systems must conform to CIRIA guidance C736 Containment 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 ventilation. This applies to any such container:* • *held in general storage, reception storage (pending acceptance) or quarantine* • *being emptied, repackaged or otherwise managed* *9. You must store wastes in sealed metal containers under cover if they have the potential for self-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 ventilation. This applies to any such container:* • *held in general storage, reception storage (pending acceptance) or quarantine* • *being emptied, repackaged or otherwise managed* *11. You must not store hazardous waste in open-topped containers. Empty open-topped containers should be kept in a building or undercover to prevent rainwater ingress.* *12. You must not store or hold wastes on site in vehicles or vehicle trailers unless you are receiving them or preparing them for imminent transfer (meaning that you will remove them from site within 24 hours, or 72 hours if over a weekend).*	1 & 2. Materials storage and handling procedures are described in Section 4 of the BATOT document. 3. HSE guidance and standards are followed where relevant (NOTE: this is not considered to be a relevant consideration for EPR). 4 & 5. Waste will be stored in accordance with the procedures outlined in Section 4 of the BATOT document and measures outlined in the Site's Fire Prevention Plan (FPP). These outline materials storage duration and capacity. 6. Waste materials are not incompatible with each other. No liquid waste present on site. Drainage in accordance to Section 6.2 of the BATOT. The FPP details measures to prevent the spread of fire. 7. All containment systems will be CIRIA guidance. 8. All wastes are in enclosed containers which are weatherproof for external storage. 9. Not applicable 10. Most wastes are stored in the northern external yard in weatherproof containers. Small amounts of treatment outputs are stored inside the building until contains are full. 11. Hazardous waste is stored in enclosed containers (non lithium-ion batteries, lithium-ion batteries, lithium-ion battery materials and treatment outputs). 12. Waste will not be stored or held on site in vehicles unless the waste is being received or prepared for imminent transfer off site. 13. Measures detailed within the FPP. 14. Bunding is provided for all liquid storage where required. 15. A tracking system is used to ensure waste does not accumulate or exceed duration periods. 16. Containers will be clearly and appropriately labelled. 17. Storage areas will be clearly marked for the storage of hazardous and non-hazardous wastes to ensure the different types of batteries and battery materials are always segregated. 18. All waste is stored indoors or in weatherproof containers if stored outside. 19. Cooling water not used. 20. Wastes are not incompatible. See FPP for storage and separation arrangements. The site The site benefits from a- drainage system as described in section 6 of the BATOT

Appropriate Measure	Compliance
13. You should pay particular attention to avoid the build-up of static electricity when you are storing or handling flammable wastes and materials. You should use leak detection systems and alarms (for example VOC alarms) and automatic fire suppression equipment based on a recorded risk assessment. *14. You must provide adequate bunding of all storage areas, and containment and treatment of any water run-off.* *15. You must not accumulate waste. You must treat wastes, or remove them from the site, as soon as possible.* *16. All stored containers must keep the labelling they had at acceptance. If the label is damaged or no longer legible you should replace the label with that same information.* *17. You must handle and store containers so that the label is easily visible and continues to be legible.* *18. You should keep solid waste dry and avoid the dilution of hazardous waste.* *19. You must keep clean rainwater and clean cooling water separate from wastes and waste waters.* *20. You must keep incompatible wastes segregated so that they cannot come into contact with one another. You must store flammable wastes apart from other wastes to prevent fire spreading between them and other materials. You must use sealed drainage systems to prevent leaks and spillages contaminating other wastes.* *21. There must be pedestrian and vehicular access (for example, forklift) at all times to the whole storage area so that you can retrieve containers without removing others that may be blocking access – other than removing those in the same row.* *22. You must store all waste containers in a way that allows easy inspection. You must maintain safe access, with a gap of at least 0.7m between rows of bulk containers or palletised wastes.* *23. You must move drums and other mobile containers between different locations (or loaded for removal off site) following written procedures. You must then amend your waste tracking system to record these changes.* *24. You must stack bags and boxes of waste no more than 1m high on a pallet. You must not stack pallets more than 2 high.* *25. You must stack containers specifically designed for stacking, and no more than 2.2m high on a pallet.* *26. You must store all other containers on pallets. You must not stack these pallets more than 2 high, except for empty containers which can be stacked 3 high.* *27. Stacked bags, boxes and containers must be stable. They must be secured with, for example, banding or shrink-wrap, if required. The packages must not extend beyond (over-hang) the sides of the pallet. Any shrink-wrap used must be clear or transparent so that you can identify waste types, damaged containers, leaks or spillages and incorrectly stacked containers. You must be careful not to damage any packages during stacking.* *28. All waste containers must remain fit for purpose. You must check any containers (and pallets they may be stored on) daily and record non-conformances. Non-compliant containers and pallets must be made safe. You must immediately and appropriately manage any unsound, poorly labelled or unlabelled containers (for example, by relabelling, over drumming and transferring the container's contents). You must risk assess, approve and record the use of containers, tanks and vessels:* • *beyond their specified design life* *where you use them for a purpose, or substances, other than the ones they were designed for* *29. You must not handle waste or its packaging in a way that might damage its integrity, unless it is appropriate to destroy a waste or its packaging, for example by shredding. You must not, for example, walk on or throw waste or waste packages.* *30. You should, where applicable and based on a recorded risk assessment, make inert the atmosphere of tanks containing organic liquid waste with a flashpoint less than 21°C. This can be done, for example, by using nitrogen gas.* *31. You must store asbestos waste double bagged or wrapped, in sealed, closed and locked containers. 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.*	21 - 23. All waste is readily accessible for handling and inspection. All waste movements are tracked. 24 - 26. Waste outputs are stored in dedicated areas in accordance with the FPP. 27 – 28. See section 4 of the BATOT. 29. Procedures will be in place for the handling of containers and packaging. 30. Not applicable 31 - 32. Not applicable 33. All containers shall be lidded or covered as appropriate. 34. Not applicable 35. Waste will be stored as per the FPP. 36. See Section 6 of the BATOT for description of engineered containment. 37. See Section 16 of the BATOT. 38 – 39. Inspection and training will be included in site operating procedures. 40. Activities that represent a clear fire risk will not be carried out within any storage area. This will be included in site operating procedures.

Appropriate Measure	Compliance
32. You must not stack wheeled containers on top of one another. Do not stack empty wheeled 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 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 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, separation and fire suppression measures. Racking systems must be designed and constructed in accordance with HSG76 Warehousing and storage.* *36. You must:* • *contain wash waters within an impermeable area and either discharge them to foul sewer or dispose of them appropriately off site.* • *prevent run-off into external areas or to surface water drain* *37. You must manage waste in a way that prevents pests or vermin. You must have specific measures and procedures in place to deal with wastes that are identified as causing pests or vermin.* *38. You must inspect storage areas, containers and infrastructure daily. You must deal with any issues immediately. You must keep written records of the inspections. You must rectify and log any spillages of waste.* *39. You must train forklift drivers in the handling of palletised goods, to minimise forklift truck damage to the integrity of containers and infrastructure.* *40. You must not carry out activities that represent a clear fire risk within any storage area. Examples include:* • *grinding* • *welding or brazing of metalwork* • *smoking* • *parking normal road vehicles, except while unloading or loading* ***Bulk storage** (Appropriate measures 41 to 52)* ***Transfer of waste into and from tankers** (Appropriate measures 53 to 70)* ***Aerosol storage** (Appropriate measures 71 to 77)* ***Sorting, repackaging and bulking** (Appropriate measures 78 to 89)* ***Laboratory smalls** (Appropriate measures 90 to 92)*	
5. WASTE TREATMENT APPROPRIATE MEASURES	
5.1 General waste treatment *1. Waste treatment must have a clear and defined benefit. You must fully understand, monitor and optimise the waste treatment process to make sure you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it. The treated output material must meet your expectations and be suitable for its intended disposal or recovery route. You must identify and characterise emissions from the process and take appropriate measures to control them at source.* *2. You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using. This should include information about the characteristics of the waste you will treat and the waste treatment processes.* *3. 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 include:*	Items 1 – 5 are covered in the responses in Appendix B and C. 6 – 11 are not applicable as no chemical treatment of waste takes place at the facility.

Appropriate Measure	Compliance
• *unexpected releases* • *start-up* • *momentary stoppages* • *shut-down* *4. You should use material flow analysis for relevant contaminants in the waste to help identify their flow and fate. You should use the analysis to determine the appropriate treatment for the waste either directly at the site or at any subsequent treatment site.* *Material flow analysis considers the contaminant quantity in the:* • *waste input* • *different waste treatment outputs* • *waste treatment emissions* *You should use the analysis and your knowledge of the fate of the contaminants to make sure you correctly treat and either destroy or remove them.* *The use of material flow analysis is risk-based and should consider:* • *the hazardous properties of the waste* • *the risks posed by the waste in terms of process safety* • *occupational safety and environmental impact* • *knowledge of the previous waste holder(s)* *A treatment process may destroy certain substances in the waste. It could also put substances into the air, water or the ground, or have residues which are sent for disposal. The weight of these outputs should be minimised. The treatment may produce residues for recovery or reuse and the weight of these substances should be maximised.* *5. You must not proceed with the treatment if your risk assessment or material flow analysis show that losses from a process will cause:* • *the breach of an environmental quality standard* • *the breach of a benchmark* • *a significant environmental impact* *6. You must clearly define the objectives and reaction (chemical, physical or biological) processes for each treatment process. You must define the end point to the process so that you can monitor and control the reaction. You must define the suitable inputs to the process, and the design must take into account the likely variables expected within the waste stream. You must sample and analyse the waste to check that an adequate end point has been reached.* *7. For each new reaction, you must assess the proposed mixes of wastes and reagents before treatment by carrying out a scale laboratory test mix of the wastes and reagents to be used. You must predetermine a batch 'recipe' for all reactions and mixes of wastes. You must also take into account the potential scale up effects, for example, the increased:* • *heat of reaction with increased reaction mass relative to the reactor volume* • *residence time within the reactor and modified reaction properties* *Your treatment must comply with HSG143 Designing and operating safe chemical reaction processes.* *8. The reactor vessel and plant must be specifically designed, commissioned and operated to be fit for purpose. The designs need to consider chemical process hazards and a hazard assessment of the chemical reactions. They also need to consider prevention and protective measures and process management, such as:* • *working instructions* • *staff training* • *appropriate process control measures* • *monitoring systems, alarms and interlocks*	

Appropriate Measure	**Compliance**
• *plant maintenance* • *checks* • *audits* • *emergency procedures* *9. To track and control the process of change, you must have a written procedure for proposing, considering and approving changes to technical developments or procedural or quality changes.* *10. Where an emission is expected, all treatment or reactor vessels must be enclosed. Only vent them to the atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief).* *11. You must monitor the reaction to make sure it is under control and proceeding towards the anticipated result. Vessels used for treatment must be equipped appropriately, for example with high level, pH and temperature monitors. These monitors must be automatic and continuous, linked to a clear display in the control room or laboratory, and have an audible alarm. Your risk assessment may require you to link process monitors to cut-off devices.*	
6. EMISSIONS CONTROL APPROPRIATE MEASURES	
6.2 Fugitive emissions to air (including odour) *1. You must use appropriate measures to prevent emissions of dust, mud and litter and odour.* *2. You must design, operate and maintain storage and treatment plant in a way that prevents fugitive emissions to air, including dust, organic compounds and odour. Where that is not possible, you must minimise these emissions. Storage and treatment plant includes associated equipment and infrastructure such as:* • *shredders* • *conveyors* • *skips or containers* • *building fabric, including doors and windows* • *pipework and ducting* *3. To make sure fugitive emissions are collected and directed to appropriate abatement, your treatment plant must use high integrity components (for example, seals or gaskets). Your treatment plant must be fully enclosed, with air extraction systems located close to emission sources where possible.* *4. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any of these wastes you must:* • *take appropriate, risk assessed measures to prevent and control emissions* • *prioritise their treatment or transfer* *5. Where necessary, to prevent fugitive emissions to air from the storage and handling of wastes, you should use a combination of the following measures:* • *store and handle such wastes within a building or enclosed equipment* • *keep buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system* • *where possible, locate air extraction points close to potential emissions sources* • *use fully enclosed material transfer and storage systems and equipment, for example, conveyors, hoppers, containers, tanks and skips* • *use fast-acting or 'airlock' doors that default closed* • *keep building doors and windows shut to provide containment, other than when access is required* • *minimising drop height* • *use misting systems and wind barriers to prevent dust*	Items 1 – 10 are covered in responses to Appendix B and C. 11. The shredding process is fully enclosed. 12. Dust Management Plan not required. 13-19. Not applicable. There are no odorous wastes or residues at the facility. See Section 12 of the BATOT.

Appropriate Measure	Compliance
6. 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). *7. You must regularly inspect and clean all waste storage and treatment areas, equipment (including conveyor belts) and containers. You must have an appropriate regular maintenance programme covering all buildings, plant and equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases.* *8. Your inspection, maintenance and cleaning schedules must make sure that tanks and plant are regularly cleaned to avoid large-scale decontamination activities.* *9. You must take measures to prevent the corrosion of plant and equipment (for example, conveyors or pipes). This includes selecting and using appropriate construction materials, lining or coating equipment with corrosion inhibitors and regularly inspecting and maintaining plant.* *10. If you wash containers or tanks, you must design and operate the washing process and associated equipment in a way that prevents fugitive emissions to air. For example, you could do this activity in a contained or enclosed system.* *11. You must fully enclose and contain pre- and post-treatment shredder plant to prevent emissions. You must design and operate the shredder plant using appropriate process interlocks. The plant should not operate unless it is enclosed and contained, for example, only working when the loading door on the hopper has been closed or sealed. Dust and microbial emissions from the shredder plant must be contained and extracted to an appropriate abatement system, for example HEPA air filtration.* *12. Where a dust management plan is required, you must develop and implement it following our guidance.* *13. 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.* *14. 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 masking agents to be appropriate measures for the treatment of odorous emissions.* *15. You must monitor and maintain 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.* *16. You must store contaminated waters that have potential for odours in covered or enclosed tanks or containers vented through suitable abatement.* *17.* Where odour pollution at sensitive receptors is expected, or has been substantiated, you must periodically monitor odour emissions using European (EN) standards *18.* Where odour pollution at sensitive receptors is expected, or has been substantiated, you must also set up, implement and regularly review an odour management plan. *19. Where an odour management plan is required, you must develop and implement it following our guidance.*	

Appropriate Measure	**Compliance**
6.4 Point source emissions to water and sewer *1. 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.* *2. You must assess the fate and impact of the substances emitted to water and sewer, following the Environment Agency's risk assessment guidance.* *3. Discharges to water or sewer must comply with the conditions of an environmental permit or trade effluent consent. Relevant sources of waste water include:* • *water or condensate collected from treatment processes* • *waste compactor run-off* • *vehicle washing* • *vehicle oil and fuel leaks* • *washing of containers* • *spills and leaks in waste storage areas* • *loading and unloading areas* *4. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques, including one or more of the following:* • *preliminary or primary treatment – for example, equalisation, neutralisation or physical separation* • *physico-chemical treatment – for example, adsorption, distillation or rectification, precipitation, chemical oxidation or reduction, evaporation, ion exchange, or stripping* • *biological treatment – for example, activated sludge process or membrane bioreactor* • *nitrogen removal – for example, nitrification and denitrification* • *solids removal – for example, coagulation and flocculation, sedimentation, filtration or flotation* *5. You must direct wash waters from cleaning containers to a foul sewer or sealed drainage system for on-site re-use or off-site disposal. You may need to pre-treat the waters to meet any limits on the effluent discharge consent. Discharges of wash waters to surface water or storm drains are not acceptable.*	Items 1 – 5 are covered in the responses in Appendix B and C.

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Appendix E Waste Batteries Appropriate Measures for Permitted Facilities

Appendix E Waste Batteries Appropriate Measures – Early Pre Consultation

Appropriate Measure	Compliance
2. General management appropriate measures	
2.1 Management system **1. You must have and follow an up-to-date written management system. It must incorporate the following features.** You have: • management commitment, including from senior managers • an environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment. You implement your environmental performance procedures, paying particular attention to: • staff structure and relevant responsibilities • staff recruitment, training, awareness and competence • communication (for example, of performance measures and targets) • employee involvement • documentation and records • effective process control • maintenance programmes • the management of change (including legislative changes and waste classification changes) • emergency preparedness and response • making sure you comply with environmental legislation You check environmental performance and take corrective action paying particular attention to: • monitoring and measurement • learning from incidents, near misses and mistakes, including those of other organisations • records maintenance • independent (where practicable) internal or external auditing of the management system and operations to confirm it has been properly implemented and maintained Senior managers review the management system at least annually to check it is still suitable, adequate and effective. You review the development of cleaner and more efficient technologies and their applicability to site operations. When designing new plant, you make sure that you assess the environmental impacts from the plant's operating life and eventual decommissioning. You consider the risks a changing climate poses to your operations. You have appropriate plans in place to assess and manage future risks. You compare your site's performance against relevant sector guidance and standards on a regular basis, known as sectoral bench-marking. You have and maintain the following documentation: • inventory of emissions to air and water • residues management plan	Refer to section 2.1 of the BATOT document,

Appropriate Measure	Compliance
• accident management plan • site infrastructure plan • site condition report • fire prevention plan If required, you have and maintain the following documentation: • odour management plan • noise and vibration management plan • dust management plan • pest management plan • climate change risk assessment	
2.2 Staff competence 1. Your site must be operated at all times by an adequate number of staff with appropriate qualifications and competence. 2. The design, installation and maintenance of infrastructure, plant and equipment must be carried out by competent people. 3. You must have appropriately qualified managers for your waste activity who are either: • qualified under a technical competence scheme • operating under a Competence Management System approved under a technical competence scheme 4. Non-supervisory staff must be reliable and technically skilled in the activities they are responsible for and in emergency response procedures. Their skills may be based on experience and relevant training.	Refer to Section 2.3.3 of the BATOT document.
2.3 Accident management plan 1. As part of your management system you must have a plan for dealing with any incidents or accidents that could result in pollution. 2. The accident management plan must identify and assess the risks the facility poses to human health and the environment. Particular areas to consider may include: • waste types and the risks they pose • robust waste acceptance procedures to avoid receiving unwanted waste types • transferring substances, for example filling (including overfilling) or emptying of vessels and containers • preventing incompatible substances coming into contact with each other • failure of plant and equipment (for example, storage tanks and pipework, blocked drains, over-pressure of vessels) • failure of containment (for example, bund failure, or drainage sump overflowing) • damaged batteries, for example, lithium-ion batteries and fire risk • making the wrong connections in drains or other systems • failure to contain firefighting water • failure of abatement systems • hazardous atmospheres in confined spaces • failure of main services, for example, loss of power or water • checking the composition of an effluents before their emission • vandalism and arson • operator error • accessibility of control equipment in emergency situations • extreme weather conditions, for example, flooding or very high winds	SUEZ will implement an Accident Management Plan for the facility as discussed in Section 2.4 of the BATOT. The Accident Management Plan will outline how SUEZ will deal with any incidents or accidents that could result in pollution. The plan will identify and assess the risks the facility poses to human health and the environment. The Plan will identify roles and responsibilities of staff involved in managing accidents. An emergency co-ordinator will be designated to take the lead in implementing the requirements of the Accident Management Plan. The plan will establish • how SUEZ will communicate with relevant authorities, emergency services and neighbours (as appropriate) both before, during and after an accident; • emergency procedures, including for safe plant shutdown and site 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; • consider the impact of accidents on the function and integrity of plant and equipment; • have contingency plans to relocate or remove waste from the facility, and suspend incoming waste; and • test the plan by carrying out emergency drills and exercises.

Appropriate Measure	Compliance
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: • how likely is it that the accident will happen? • what may be emitted and how much? • where will the emission go – what are the pathways and receptors? • what are the consequences? • what is the overall significance of the risk? • what can you do to prevent or reduce the risk? 4. In particular, you must identify any fire risks that may be caused, for example by: • arson or vandalism • self-combustion, for example the finer fractions of shredder residue • plant or equipment failure and electrical faults • naked lights and discarded smoking materials • hot works (for example welding or cutting), industrial heaters and hot exhausts • neighbouring site activities • sparks from metal machinery or equipment, for example, forklifts or loading Buckets • hot loads deposited at the site • damage, over-heating or shorting of batteries You must have a fire prevention plan (FPP) that identifies the risks at your site and meets the requirements of our fire prevention plan guidance. 5. The depth and type of accident risk assessment you carry out will depend on the characteristics of the activities undertaken, including their location and any plant or equipment involved. The main factors to consider include: • scale and nature of the accident hazards presented by the activities • risks to the environment, including human health (the receptors) • nature and complexity of the activities undertaken, including plant and equipment involved • the availability of appropriate risk control techniques and measures 6. 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 accident scenario, for example, whether to use containment or dispersion to extinguish fires, or let them burn. 7. Your facility must have 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 and safely and know how to respond to an emergency. 8. You must also: • establish how you will communicate with relevant authorities, emergency services and neighbours (as appropriate) both before, during and after an accident • have appropriate emergency procedures, including for safe plant shutdown and site 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 • consider the impact of accidents on the function and integrity of plant and equipment • have contingency plans to relocate or remove waste from the facility, and suspend incoming waste • test the plan by carrying out emergency drills and exercises	Risks for the storage and treatment of waste batteries will be covered including risks associated with the different types or chemistries of batteries that may be received, storage and handling of any damaged batteries, potential short-circuiting of batteries, any charging or discharging of batteries undertaken at the site and storage and handling of any wastes or residues resulting from the treatment of batteries (for example, black mass, plastics, metals).

Appropriate Measure	Compliance
9. Your accident management plan must identify and assess the risks the facility poses from the storage or treatment of waste batteries, including but not limited to: • risks associated with the different types or chemistries of batteries that may be received • storage and handling of any damaged batteries • potential short-circuiting of batteries • any charging or discharging of batteries undertaken at the site • storage and handling of any wastes or residues resulting from the treatment of batteries (for example, battery electrolyte, black mass, plastics, metals)	
2.4 Accident prevention measures 1. You must take the following measures, where appropriate, to prevent events that may lead to an accident. **Segregating waste** 2. You must keep incompatible wastes apart. This includes, for example, keeping damaged batteries away from other batteries or wastes, storing batteries of different chemistries separately once sorted from mixed loads (for example, in separate containers), segregating batteries that have been tested or discharged from those awaiting testing or discharging. **Preventing accidental emissions** 3. You must make sure you contain the following for off-site disposal or route to the sealed drainage system as appropriate: • process waters • site drainage waters • emergency firefighting water • oil or chemical contaminated waters • spillages of oils and chemicals 4. 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 example, by considering the: • nature of the pollutants • effects of downstream waste water treatment • sensitivity of the receiving environment 5. You can only discharge waste water from this buffer storage after you have taken appropriate measures, for example, to control, treat or reuse the water. Discharges to ground, surface water or sewer must be lawful and must comply with any consents or permissions that are required.6. You must have spill contingency procedures to minimise the risk of an accidental emission of raw materials, products and waste materials, and to prevent their entry into water. 7. 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 firefighting water reaching a receiving water body. This should be considered as part of your fire prevention plan.8. You must consider and, if appropriate, plan for the possibility that you need to contain or abate accidental emissions from: • overflows • vents • safety relief valves • bursting discs If this is not advisable on safety grounds, you must focus on reducing the probability of the emission. **Security measures** 9. You must have security measures in place (including staff) to prevent: • entry by vandals and intruders • damage to plant and equipment	As per Appendix B – Measures for Metal Shredding.

Appropriate Measure	Compliance
• theft • fly-tipping • arson 10. Facilities must use an appropriate combination of the following measures: • security guards • total enclosure (usually with fences) • controlled entry points • adequate lighting • warning signs • 24-hour surveillance, such as closed-circuit television (CCTV) **Fire prevention** 11. There are 3 fire prevention objectives. You must: • minimise the likelihood of a fire happening • aim for a fire to be extinguished within 4 hours • minimise the spread of fire within the site and to neighbouring sites 12. You must have a fire prevention plan that meets the requirements of our fire prevention plan guidance. 13. In accordance with our Fire Prevention Plan guidance, you must maintain appropriate separation distances between and within waste battery storage areas to prevent a fire from spreading. You must also maintain appropriate separation distances between combustible or flammable wastes (including waste batteries and other wastes in containers) and, where relevant: • potential sources of ignition (for example, naked flames, space heaters, furnaces) • the site perimeter, waste quarantine or isolation areas, any buildings, or other combustible or flammable materials Separation distances will depend upon the nature and quantity of wastes stored and may be reduced by using fire walls, bays or other physical barriers if they provide sufficient fire resistance. 14. Areas where waste batteries are stored, handled or treated must be provided with appropriate fire detection and suppression systems. Selection and location of appropriate fire detection systems and fire-fighting materials, methods and equipment should be based upon a site-specific fire risk assessment and consultation with the local fire and rescue service. Storage areas should have appropriate smoke or heat detectors, linked to automatic alarm systems, designed to provide early detection and alarm. Where lithium-ion batteries are stored in significant quantity, appropriate gas detection systems may help to provide an early warning of battery thermal runaway and release of associated off-gases. The gases released from Li-ion batteries can be heavier or lighter than air and therefore high- and low-level gas detection should be considered. A wide range of potential firefighting substances and methods are available (for example, using water, foam, gas, sand, aqueous vermiculite, vermiculite fire blankets, sprinklers, deluge systems, water cannons, portable fire extinguishers, a water-filled container for the submersion of batteries). The most appropriate method of fire suppression is likely to depend on a range of factors, including the type and quantities of batteries or other combustible or flammable materials involved and the location and scale of the fire (for example, a lithium fire extinguisher may be sufficient if a single or small number of isolated Li-ion batteries are involved). One of the primary aims should be to prevent a fire from spreading and escalating to other waste batteries and combustible wastes or materials stored on-site, for example, by preventing heat transfer or through cooling. 15. Fire detection, suppression and fighting equipment must be subject to regular inspection, testing and maintenance in line with the recommendations of the equipment manufacturer and installer. You must keep records of their inspection, testing and maintenance **Other accident prevention measures** 16. You must maintain plant control in an emergency using one or a combination of:	

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• alarms • process trips and interlocks • automatic systems • manual interventions 17. You must: • make sure all the measurement and control devices you would need in an emergency are easy to access and operate in an emergency situation • maintain the plant so it is in a good state through a preventive maintenance programme and a control and testing programme • use techniques such as suitable barriers to prevent moving vehicles damaging equipment • have procedures in place to avoid incidents due to poor communication between operating staff during shift changes and following maintenance or other engineering work • where relevant, use equipment and protective systems designed for use in potentially explosive atmospheres 18. Areas of the site where explosive atmospheres could occur (for example, the treatment, storage or handling of waste containing organic solvents) must be assessed and, where appropriate, classified into hazardous zones in line with the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Plant and equipment used in these zones must be ATEX compliant and operated by appropriately trained staff. **Record keeping and procedures** 19. You must: • keep an up-to-date record of all accidents, incidents, near misses, changes to procedures, 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 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 • make sure that any documents that may be needed in the event of an incident are accessible	
2.5 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. 2. Your contingency plan must also contain provisions and procedures to make sure that you: • do not exceed storage limits in your permit and you continue to apply appropriate measures for storing and handling waste • stop 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 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. 3. 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 and materials that fail end-of-waste specification. 4. 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	As per Appendix B – Measures for Metal Shredding.

Appropriate Measure	Compliance
• are authorised to do so in the quantities and types likely to be needed – in addition to 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 based on 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, and you have the appropriate infrastructure in place.8. Your management procedures and contingency plan must: • identify known or predictable malfunctions associated with your technology and the procedures, spare parts, tools and expertise needed to deal with them • include a record of spare parts held, especially critical spares – or state where you can get them from and how long it would take • have a defined procedure to identify, review and prioritise items of plant which need a preventative regime • include all equipment or plant whose failure could directly or indirectly lead to an impact on the environment or human health • identify 'non-productive' or redundant items such as tanks, pipework, retaining walls, bunds, reusable waste containers (for example wheeled carts), ducts, filters and security systems • make sure you have the spare parts, tools, and competent staff needed before you start maintenance9. 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.	
2.6 Plant decommissioning 1. You must consider the decommissioning of the plant at the design stage and make suitable plans to minimise risks during later decommissioning.2. For existing plant, identify potential decommissioning risks and take steps to address these. Make changes and design improvements as and when plant is upgraded, or when construction and development works are carried out at your site. 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.3. You must have and maintain a decommissioning plan to demonstrate that: • plant will be decommissioned without causing pollution • the site will be returned to a satisfactory condition 4. Your decommissioning plan should include details on: • whether you will remove or flush out pipelines and vessels (where appropriate) and how you will empty them of any potentially harmful contents • site plans showing the location of all underground pipes and vessels • how asbestos or other potentially harmful materials will be removed, unless we have agreed it is reasonable to leave such liabilities to future owners • methods for dismantling buildings and other structures, and for protecting surface water and groundwater during construction or demolition at your site • any soil testing needed to check for any pollution caused by the site activities, and information on any remediation needed to return the site to a satisfactory state when you cease activities, as defined by the initial site condition report • the measures proposed, once activities have definitively stopped, to avoid any pollution risk and to return the site of operation to a satisfactory state (including, where appropriate, measures relating to the design and construction of the plant) • the clearing of deposited residues, waste and any contamination resulting from the waste treatment activities5. You should make sure that equipment taken out of use is decontaminated and removed from the site.	As per Appendix B – Measures for Metal Shredding.
3. Waste pre-acceptance, acceptance and tracking appropriate measures	

Appropriate Measure	**Compliance**
3.1 Waste pre-acceptance 1. You must implement waste pre-acceptance procedures so that you know enough about a waste before it arrives at your facility. You need to do this to assess and confirm the waste is technically and legally suitable for your facility. Your procedures must follow a risk-based approach, considering: • • the source and nature of the waste, including: ○ the types of waste battery present (for example, chemistry, classification (for example, portable, automotive, industrial), or size) ○ the age and condition of the batteries ○ how the batteries are, or will be, packaged (for example, including type of container, packaging material, measures taken to prevent physical damage, electrical shorting, exposure to liquids and high temperatures) ○ any hazardous properties and persistent organic pollutant (POPs) content ○ potential risks to process safety, occupational safety and the environment (for example, from the presence of hazardous substances that could be dispersed during treatment) ○ knowledge about the waste producer and previous waste holder 2. You must get the following information (in writing or electronic form) when you receive a customer query and before the waste arrives at your facility: • details of the waste producer (who you are receiving the waste from) including organisation name, address and contact details • where the waste is coming from • full description of the waste and its composition, including type and chemistry of waste batteries and their quantity if known • the List of Waste codes (European Waste Classification (EWC) code) • any hazardous properties and presence of any regulated chemicals, for example, POPs • the type of containers and packaging used for the waste • where available, information regarding the age and condition of the waste and, where relevant, potential for self-heating, self-reactivity or reactivity to moisture or air You can verify the pre-acceptance information by contacting or visiting the waste producer. Dealing with staff directly involved in waste production can help to fully characterise a waste.3. You must assess the information obtained at the waste pre-acceptance stage to make sure you: • only accept wastes that are suitable for treatment or storage • avoid unnecessarily accumulating waste • have enough storage and treatment capacity • prevent waste arriving at the site in inappropriate containers or packaging • identify waste that may require additional safety measures or precautions to be taken • meet any relevant Control of Major Accident Hazards (COMAH) requirements, because wastes, raw materials and end-of-waste materials all contribute to COMAH limits 4. Where relevant, you should consider with your customer whether waste batteries are suitable for preparing for reuse (for example, re-using electric vehicle batteries for other energy storage applications). Where that remains a possibility, you should ensure the waste batteries are handled and transported with care to avoid any damage or loss that could affect reuse. 5. If there is a risk of radioactive contamination or presence of a radioactive source you must obtain confirmation that the waste is not radioactive unless your facility is permitted to accept such waste. 6. You must consider whether specific wastes, from among those you are permitted to receive, have properties that can pose unacceptable risks to the site or process. For example, due to risk of: • fire or explosion • corrosion • uncontrolled reactions, for example, involving self-heating or gas evolution You should establish a list of such wastes and procedures for managing the risks from them.	As per Appendix B – Measures for Metal Shredding.

Appropriate Measure	Compliance
7. You must keep pre-acceptance records for at least 3 years in a computerised waste tracking system following receipt of the waste. If an enquiry from a waste producer does not lead to the receipt of waste, you do not need to keep records. 8. You must reassess the information required at pre-acceptance if the: • waste changes • process giving rise to the waste changes • waste received does not conform to the pre-acceptance information 9. In all cases you must reassess the information required at pre-acceptance on an annual basis.	
3.2 Waste acceptance 1. 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 you can accept it. If it is not, you must confirm that you can accept it as a non-conforming waste, or you must reject it. If you are rejecting hazardous waste you must follow the guidance on the procedure for rejecting hazardous waste. Procedures should be documented and auditable. 2. Your procedures must follow a risk-based approach, considering: • the source, nature (including type and chemistry of batteries), condition and age of the waste • any hazardous properties of the waste • any persistent organic pollutant content in the waste • potential risks to process safety, occupational safety and the environment (for example, the presence of lithium-ion batteries) • knowledge about the previous waste holders 3. Other than in an emergency (for example, taking waste from an emergency incident clean-up), you must only receive pre-booked wastes onto site that have been adequately pre-accepted and are consistent with the pre-acceptance information. 4. 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 waste tracking system. 5. You must visually check wastes and verify them against pre-acceptance information and transfer documentation before you accept them on site. The extent of the initial visual check should be determined by the waste type and how it is packaged. 6. You must check and validate all transfer documentation and resolve discrepancies before you accept the waste. If you believe the incoming waste classification and description is incorrect or incomplete, then you must address this with the customer during waste acceptance. You must record any non-conformances. If you have assessed the waste as acceptable for on-site storage or treatment, you must document this. 7. You must have clear criteria that you use to reject non-conforming wastes. You must also have a written procedure for recording, reporting and tracking nonconforming wastes, including notifying the relevant customer or waste producer to prevent reoccurrence. 8. The person carrying out waste acceptance checks must be trained to effectively identify and manage any non-conformances in the loads received, complying with this guidance and your permit conditions (for example, including the different types, properties and chemistries of waste batteries or similar wastes that may be received at the facility). 9. If there is a known risk of radioactive contamination, you must check the waste to determine that it does not include radioactive material, unless you are permitted to accept these materials. 10. Upon arrival, wastes must be inspected to check that they are as expected and match accompanying paperwork (for example, regarding battery type(s), quantity and packaging). As far as practicable, loads must be visually checked for any nonconforming wastes (including batteries that are of a non-conforming type or chemistry, or that show signs of damage) prior to being accepted and moved to a dedicated storage area. For example, damaged batteries could be identified by signs of physical damage (dents,	As per Appendix B – Measures for Metal Shredding.

Appropriate Measure	Compliance
puncture, cracks), swelling, smoking, leaking or overheating. Any non-conforming batteries (for example, a lithium-ion battery received in a load that should only contain lead acid batteries) must be removed at the earliest opportunity and stored appropriately. 11. If you receive wastes that you are not permitted to accept, you should either: • reject the load immediately; or • if non-conforming types of waste are found within a load that could otherwise be accepted on to site, they must be segregated and placed in the designated battery quarantine area. 12. Waste batteries must be received and handled in appropriate containers or packages that are secure, prevent damage and leakage of materials, for example, liquid battery electrolyte, and are resistant to any corrosive chemicals contained in them. This must be a requirement of your waste pre-acceptance and acceptance procedures. 13. You must check all waste containers and packages to make sure they are fit for purpose, including, where appropriate, that they are: • in sound condition • undamaged • not corroded • suitable for the contents (for example, its mass and other physical or chemical properties) • with well-fitting lids, where relevant • with caps, valves and bungs in place and secure, where relevant You must risk assess containers, particularly those made of plastic, if they have exceeded the manufacturer's use by date. You must quarantine non-conforming containers and deal with them immediately and appropriately. You must record all non-conformances.14. If waste batteries are not received in appropriate containers, they must be risk assessed and, if safe to do so, repackaged as soon as it is practicable and before being moved to the waste storage area. 15. The site must have written procedures for safely managing non-conforming or quarantined wastes, including damaged batteries. Where relevant and supported by an appropriate risk assessment, this could include the prioritisation of damaged batteries for treatment.16. If identified during acceptance or storage, damaged batteries must be risk assessed (for example, considering the risk of potential emissions, fire and electrical hazards) and, where necessary and safe to do so, placed in appropriate rigid, closed, leak-proof and chemically-resistant containers and segregated from other batteries or wastes. 17. Following assessment, and where safe to do so, damaged batteries that pose an increased fire risk (for example, lithium-ion batteries) should be: • placed in an appropriate fireproof container, for example, a UN approved steel drum or container, filled with an inert packing material, such as vermiculite or sand • moved to a dedicated location or quarantine area that is a safe distance from combustible or flammable materials, possible sources of ignition, buildings, equipment and sensitive site perimeters (for example, those close to public rights of way) • kept under cover in a cool, dry and well-ventilated location Where possible, pressure relief valves or vents should be provided on containers if there is potential for the release and accumulation of gases from the batteries. Spark arrestors should be fitted where necessary to reduce the risk of ignition of flammable gases. Storage of containers in enclosed steel cages, or similar, may help minimise the risk of battery ejection and propagation in the event of a fire, particularly if the damaged batteries are not already in fire-resistant containers or packaging and it is not safe to repackage them. Large Li-ion battery packs or modules (for example, from EVs or BESS) that are damaged and assessed as posing a risk of thermal runaway or fire should be isolated within an appropriate exclusion zone or in a dedicated, fully enclosed (ventilated) and contained fire-resistant container or enclosure provided with appropriate fire (for example, gas or heat) detection and suppression systems. **Storage areas**	

Appropriate Measure	Compliance
18. All relevant waste 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. 19. 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 from these areas and channel it to a blind sump unless you can lawfully discharge it. 20. You must clearly designate a waste reception area (or areas). Staff controlling the inspection, reception and validation of waste at the facility, must be trained in their respective roles **Quarantine storage** 21. Your facility must have a dedicated waste quarantine area or areas, which you use to temporarily store waste being rejected, or non-conforming waste whilst it is being inspected or assessed.22. Quarantine storage must be for a maximum of fourteen days. Records must be maintained of the removal of quarantined waste from site. For some limited and specific cases (for example the detection of radioactivity), you can extend quarantine storage time if the Environment Agency agrees.23. You must have written procedures in place for dealing with wastes held in quarantine, and a maximum storage volume.24. Quarantine storage must be separate from all other storage and clearly marked as a quarantine area. 25. You must store the waste in quarantine in appropriate closed containers or under weatherproof covering. You must segregate or isolate incompatible wastes.	
3.3 Waste tracking 1. You must use an electronic or computerised waste tracking system to hold up-to date information about the available capacity of the waste quarantine, reception, general and bulk storage areas of your facility including treatment residues and end of waste product materials. 2. Your waste tracking system must hold all the information generated during: • pre-acceptance • acceptance • non-conformance or rejection • storage • treatment • removal off site This information must be readily accessible. 3. You must create records and update them to reflect deliveries, on-site treatment and dispatches. This can be done on a ‘loads received’ basis. Your tracking system will also operate as a waste inventory and stock control system. It must include this information as a minimum: • the date the waste arrived on-site • the producer’s details (or unique identifier) • a unique reference number • waste pre-acceptance and acceptance information • the quantity delivered • the intended treatment route • accurate records of the nature and quantity of wastes held on site, including all hazards – and identifying the primary hazards and presence of any regulated chemicals such as POPs • where the waste is physically located on site 4. The tracking system must be able to report: • the total quantity of waste present on site at any one time	As per Appendix B – Measures for Metal Shredding.

Appropriate Measure	**Compliance**
• a breakdown by type of the waste quantities you are storing pending treatment or transfer • the quantity of waste on site compared with the limits authorised by your permit • the length of time the waste has been on site • the quantity of end-of-waste product materials on site at any one time, and, where applicable details of any non-conformances and rejections 5. You must store back-up copies of electronic records off site. Records must be readily accessible in an emergency. 6. You must hold pre-acceptance and 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, hazardous waste consignment notes.	
4. Waste storage, segregation and handling appropriate measures	
4.1 Generate waste storage and handling 1. You must have waste storage and handling procedures. You must store and handle waste in a way that makes sure you prevent and minimise pollution risks by using appropriate measures. Waste handling must be carried out by competent staff using appropriate equipment. 2. You should design and operate your facility in a way that minimises the handling of waste, for example, by storing waste in locations that minimise waste handling and using mechanical loading and unloading technologies and conveyors where it is safe and practicable to do so. 3. Where possible, you should locate storage areas away from watercourses and sensitive perimeters (for example, those close to public rights of way, housing or schools). 4. You must store all waste within the secure area of your facility to prevent unauthorised access and vandalism5. Where relevant, you must conform to Health and Safety Executive (HSE) guidance and standards, for example: • HSG51 The storage of flammable liquids in containers • HSG71 Chemical warehousing: The storage of packaged dangerous substances • HSG76 Warehousing and storage • HSG140 Safe use and handling of flammable liquids • HSG176 The storage of flammable liquids in tanks • HSG85 Electricity at work: Safe working practices • HSG258 Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV) • INDG139 Using electric storage batteries safely • L138 DSEAR Approved Code of Practice 6. You must clearly document the maximum storage capacity of your site and designated storage areas. You must not exceed these maximum capacities. You should define capacity in terms of, for example, maximum tank or vessel capacities, tonnage, numbers of skips, pallets or containers. You must regularly monitor the quantities of stored waste on site and designated areas and check against the allowed maximum capacities. You must also monitor the quantities of relevant wastes against limits set out in your management plans, for example, fire prevention plan. 7. You must clearly mark waste storage areas and provide signs showing the maximum quantity and types of waste (including any hazardous properties) that can be stored there. 8. The design and arrangement of storage areas must provide and maintain appropriate separation distances to prevent fire spreading and access for fire-fighting measures, considering the use of other measures such as fire walls and bays, in accordance with an agreed FPP. 9. You must maintain adequate access and separation distances between and within storage areas to allow for easy inspection. You must maintain safe access, with a gap of at least 0.7m between rows of bulk containers or palletised wastes.	Covered in Appendix B & C. FPP will detail waste storage measures at the Site. 1. Detailed within the BATOT section 10.1. 2. Detailed within the BATOT section 10.1. 3. Storage locations are located away from sensitive receptors 4. Detailed within BATOT section 6.4. 5. HSE guidance and standards are followed where relevant (NOTE: this is not considered to be a relevant consideration for EPR). 6. Maximum capacity detailed within site FPP. 7. Detailed within FPP 8. Separation distances detailed in the site FPP. 9. Separation distances detailed in the site FPP. 10. Maximum storage times will not exceed 6 months under normal conditions 11. A waste tracking system is used to tracked waste storage durations on site. Table 8-1 of the BATOT details waste storage duration. 12. Waste is handled in a way that does not damage its integrity. 13. All forklift using staff will be trained. 14. The site benefits from a drainage system as described in section 6 of the BATOT. The FPP manages the spread of fire. Wastes accepted at the site are compatible with one another. 15. As per 14. 16. Not applicable. 17. Secondary and tertiary containment systems of waste storage areas will conform to CIRIA guidance C736 Containment systems for the prevention of pollution. 18. Wastes are either stored undercover or in a container with a lid. 19. Waste is stored undercover or in a container with a lid. 20. All containers stored externally are covered. 21. Detailed with Appendix B, C and D 22. Inspections detailed within BATOT and FPP. 23. Labelling will be made as per the waste tracking system detailed in the BATOT. 24. Waste storage arrangements detailed within the site FPP. 25. Waste storage arrangements detailed within the site FPP. 26. Waste storage arrangements detailed within the site FPP. 27. Waste storage arrangements detailed within the site FPP.

Appropriate Measure	Compliance
10. You must not accumulate waste unnecessarily. You must treat wastes, or remove them from the site, as soon as possible and in compliance with the timescales provided below. If you have a shorter time period as a permit condition or one is specified in your fire prevention plan you must comply with that condition or the fire prevention plan. **Waste type** / **Maximum storage duration*** Alkaline and zinc carbon batteries — 12 months Lead acid batteries — 6 months Other batteries (including, NiCd, NiMH, Lithium, battery packs and modules, and mixed or unsorted batteries) — 6 months Other wastes (including battery components or fractions, scrap or off-spec products from manufacturers, electrolytes) — 6 months The repackaging, bulking or sorting of waste should not change (extend or restart) the maximum duration that a waste is stored on-site. 11. Up-to-date records must be kept of the on-site storage duration and inventory of waste. Storage duration and inventory should be minimised, for example, by ensuring that they are transferred or treated once a viable load has been established and managed on a first-in first-out basis to prevent the accumulation of aged stock. 12. You must not handle waste or its packaging in a way that might damage its integrity. You must not, for example, walk on, throw or drop waste or waste packages or cause damage from the use of mobile machinery or vehicles. 13. You must train forklift drivers in the handling of palletised goods, to minimise forklift truck damage to the integrity of containers and infrastructure. 14. Storage area drainage infrastructure must: • contain all possible contaminated run-off • prevent incompatible wastes coming into contact with each other • make sure that fire cannot spread 15. You must: • contain wash waters within an impermeable area and either discharge them to foul sewer under a trade effluent consent or dispose of them appropriately off site. • prevent run-off into external areas or to surface water drains 16. Any liquids removed from waste must be collected and stored in lidded, leakproof containers or dedicated tanks provided with appropriate secondary and tertiary containment. Containers must be kept closed when not being filled and must be stored within a dedicated area that will contain any leakage or spillage. Containers and tanks must be chemically resistant to the liquids stored in them. 17. Secondary and tertiary containment systems of waste storage areas must conform to CIRIA guidance C736 Containment systems for the prevention of pollution. 18. You must store wastes that are sensitive to air, light, heat, moisture or extreme ambient temperatures under appropriate weatherproof covering protected from such ambient conditions (for example, waste lithium metal must be protected from exposure to water, including the moisture in air or other substances) The type of covering will depend on the types and quantities of waste. It could be as simple as a lid or cover over a container for small items but in other cases may require the construction of a roofed building. Covered areas must have good ventilation. This includes containers: • held in general storage, reception storage (pending acceptance) or quarantine • being emptied, repackaged or otherwise managed For example, waste held in fibre or cardboard primary or secondary packaging must be stored in a cool, dry and well-ventilated area of a building and not exposed to rain or moisture and must be kept off the floor to prevent damage caused by damp.19. Wherever practicable you should store all other wastes under	28. FIBCs will not be handled or stored in a way that could cause damage to them. 29. Waste storage arrangements detailed within the site FPP. 30. Wastes accepted at the site are not incompatible with each other. 31. Not applicable 32. Managed within the FPP. 33. Waste will not be stored or held on site in vehicles unless the waste is being received or prepared for imminent transfer off site. 34. Inspection of waste storage area will take place as per the BATOT and the FPP. 35. Spillages will be managed as per the FPP and BATOT. 36. Fire risk activities will be managed as per the site FPP. 37. The site benefits from a drainage system as described in section 6 of the BATOT. 38. As per 37. 39. Weatherproof containers are used at the site where required. 40. Racking system used at the site will be UN Approved 41. As per Chemical Waste Appendix D. 42. Pests and vermin will be managed as described in Section 16 of the BATOT. Waste types not expected to attract pests or vermin.

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cover. Covered areas must have good ventilation. Under cover storage provides better protection for containers than open air storage and minimises the generation of contaminated water. Covered storage also: • lowers temperature fluctuations that wastes are subjected to • reduces the degradation of containers through weathering 20. You must not store hazardous chemical wastes (for example, produced from battery treatment activities) in open-topped containers. Empty open-topped containers should be kept in a building or under cover to prevent rainwater ingress. Wastes that have the potential for self-heating or self-reactivity must be stored in sealed metal containers under cover and monitored for heat build-up. 21. All waste storage containers and packages must remain fit for purpose and: • in sound condition • undamaged • not corroded • suitable for the contents (for example, its mass and other physical or chemical properties) • have well-fitting lids, where relevant • with caps, valves and bungs in place and secure, where relevant 22. You must check the condition of containers and the pallets they may be stored on as part of routine site inspections and record non-conformances. Non-compliant containers and pallets must be made safe. You must immediately and appropriately manage any unsound, poorly labelled or unlabelled containers (for example, by relabelling, over drumming and transferring the container's contents). You must risk assess, approve and record the use of storage containers, tanks or vessels: • beyond their specified design life • where you use them for a purpose, or substances, other than the ones they were designed for 23. All containers must be clearly labelled with relevant information, including their contents, date of filling or receipt and relevant hazards. They should keep the labelling they had at acceptance unless they have repackaged and relabelled. If the label is damaged or no longer legible you should replace the label with the same information. You must handle and store containers of waste so that the label is easily visible and continues to be legible. 24. Containers must be held in designated areas of the site marked with maximum stack footprint and minimum separation distances. The containers should be stored in rows and must be arranged in a way that ensures they can be safely and easily accessed for inspection or retrieval at all times without having to move others that may be blocking access, other than those in the same row. 25. Containers of waste must only be stacked if they are specifically designed for stacking, and no more than 2.2m high and on a pallet. 26. You must store all other containers (including bags and boxes) on pallets (unless they have an integral pallet at the base) and stacked no more than 1m high. Pallets must not be stacked more than 2 high, except for empty containers which can be stacked 3 high. 27. Stacked containers must be stable. They should be secured if required, for example, with banding or shrink-wrap. The containers must not extend beyond (overhang) the sides of the pallet. If shrink-wrap is used, it must be clear or transparent so that you can identify waste types, damaged containers, leaks or spillages and incorrectly stacked containers. You must be careful not to damage any packages during stacking.. 28. Flexible IBCs (FIBCs) must not be handled or stored in way that could cause damage to the container or its contents (for example, from being dropped, lifted or lowered too quickly, or impacted by machinery or sharp edges) or that would exceed its safe working load or carrying capacity. They must only be lifted and handled using equipment designed to handle FIBCs and which do not have any sharp edges or protrusions that could damage the container. They must be stored inside a building (if containing batteries) or under cover, and in a cool, dry location away from direct sunlight. All FIBCs must be stored in a way that	

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means they can be accessed safely and easily for inspection or retrieval. They must be inspected regularly to identify and address any signs of damage (for example, including loss of containment, fraying, splits, leaks, or signs of chemical contamination). 29. FIBCs must not be stacked on top of each other unless designed and approved for stacked and they are stacked and in a manner that is secure and stable and in accordance with the manufacturer's recommendations and other relevant industry guidance (for example, from the FIBCA and the HSE). FIBCs must not be stacked more than 2 high or if it could cause damage to their contents, for example, including waste at the bottom of the containers or stack. 30. You must keep incompatible chemical wastes segregated so that they cannot come into contact with one another. You must store flammable wastes apart from other wastes to prevent fire spreading between them and other materials. You must use sealed drainage systems to prevent leaks and spillages contaminating other wastes. 31. You should, where applicable and based on a recorded risk assessment, make inert the atmosphere of tanks containing liquid waste with a flashpoint less than 21°C (for example, tanks containing flammable waste electrolytes or solvents). This can be done, for example, by using nitrogen gas.32. You should pay particular attention to avoid the build-up of static electricity when you are storing or handling flammable wastes and materials. You should use leak detection systems and alarms (for example VOC alarms) and automatic fire suppression equipment based on a recorded risk assessment. 33. You must not store or hold wastes on site in vehicles or vehicle trailers unless you are receiving them or preparing them for imminent transfer (meaning that you will remove them from site within 24 hours, or 72 hours if over a weekend). 34. Waste storage areas, containers and infrastructure must be subject to daily inspection to make sure that any leaks, spillages of liquids, dust or loose material are identified and managed appropriately, and fire breaks are maintained. You must keep written records of the inspections. You must rectify and log any spillages of waste. 35. Any spillage or leakage resulting from the storage of waste must be collected without delay using equipment and procedures appropriate to the type of spillage. The collected residues must be stored in a lidded, leakproof container. Any containers or surfaces affected by the spillage must be cleaned. Sand or neutralising granules, or other equivalent materials, must be available to deal with any leaks or spills. 36. You must not carry out activities that represent a clear fire risk within waste storage areas. Examples include: • hot works, including grinding, welding, or brazing of metalwork, unless risk assessed and approved, for example, under a permit to work scheme 34 • smoking • parking normal road vehicles, except while unloading or loading • pressure washing • recharging forklift truck or power tool batteries • recharging or discharging batteries 37. All waste storage areas must have an impermeable surface which is resistant to the materials being stored. Outdoor waste storage areas must have a sealed drainage system to collect all surface water run-off and channel it to a blind sump unless it may be lawfully discharged. Indoor waste storage areas must be provided with appropriate spillage collection facilities. 38. You must keep clean water (for example, uncontaminated rainwater) separate from wastes and waste waters. 39. You must use weatherproof covering in areas used for the storage of waste containing hazardous material or fluids where this is necessary to avoid contamination of surface water, including fractions that may be persistent organic pollutant (POPs) waste. The type of covering will depend on the types and quantities of waste but must ensure the waste is protected from the weather. It could be as simple as a lid or cover over a container for small items but in other cases may require the construction of a roofed building. 40. If racking systems are used to store waste, their design and construction must be in accordance with HSG76 Warehousing and storage and consider the need for: • waste separation and segregation (including separation distances for fire prevention)	

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• the inspection and retrieval of waste • fire prevention and suppression measures Where racking systems are used for the storage of combustible or flammable wastes (for example, Li-ion batteries or wastes resulting from the treatment of Li-ion batteries), they should be made of non-combustible materials, with solid fire-resistant barriers in place to prevent the spread of fire (horizontally and vertically). The use of in-rack sprinkler systems and anti-static measures should also be considered, where appropriate. 41. Bulk storage systems (for example, used for liquids and powders), including tanks and silos, must meet the relevant requirements for Bulk storage provided in Section 4 of Chemical waste: appropriate measures for permitted facilities. 42. You must manage waste in a way that prevents pests or vermin. You must have specific measures and procedures in place to deal with wastes that are identified as causing pests or vermin.	
4.2 Additional measures for the storage and handling of waste batteries 1. Where relevant to their role, all personnel must be trained in the different types, properties and chemistries of batteries that may be received at the facility, including how they can be identified and the measures that must be taken to ensure they are stored, handled and treated safely. 2. Other than mixed loads of waste batteries that are yet to be sorted (for example, received from household collections), batteries of different chemistry must be stored separately from each other, for example, in separate dedicated storage areas or containers. Once sorted and separated, you must not mix batteries of different chemistries or types. This includes, for example, storing traction batteries and other large automotive or industrial batteries separately from smaller portable batteries of the same chemistry. Batteries that are known to contain POPs or made of a polymer that may contain POPs should be segregated from those that do not. 3. To make sure waste batteries are protected and contained during storage and handling, they must be stored and handled in appropriate containers (for example, battery boxes, drums or other suitable packages) that are: • non-conductive or provided with a non-conductive liner • protected from static where necessary (for example, if containing, or stored or handled near, lithium-ion batteries or other potentially flammable wastes or substances) • waterproof and weather resistant (unless stored within an enclosed building) • resistant to chemicals contained in the waste batteries (for example, acids or other corrosive substances) • leak-proof or provided with a strong, chemically resistant leak-proof liner • kept closed and sealed when not being filled or emptied 4. Containers of waste batteries must be stored in well-ventilated designated areas of a building or under weatherproof covering, which provide a dry and cool environment, prevents exposure to extreme temperatures and sources of heat (including direct sunlight) and away from other relevant hazards, for example, including high voltage cables, transformer cabins, flammable or corrosive gas or liquid tanks, or other storage areas for potentially dangerous materials. 5. If waste batteries are stored under weatherproof covering (including in storage tents or similar temporary structures) instead of in an enclosed building, its design and construction must: • be appropriate to the waste batteries being stored, considering their type, chemistry, quantity and potential hazards (for example, hazardous chemicals or fire) • be on level ground with an impermeable surface and sealed drainage • be secured with appropriate anchoring methods and resistant to weather conditions, for example, including direct sunlight and ultraviolet radiation, strong winds, wind-driven rain, snowfall • provide protection needed for any sensitive or reactive wastes, for example, providing sufficient shade and thermal insulation for Li-ion batteries • provide appropriate ventilation, for example, to minimise formation of condensation and aid dispersion of any hazardous gases that may be released from the waste batteries • keep the storage area dry and prevent the accumulation of water, for example, from rainfall, condensation or surface water • be subject to regular inspection and maintenance	1. Training will be provided as per the BATOT and site EMS. 2. Other than mixed loads of waste batteries that are yet to be sorted , batteries of different chemistry will be stored separately from each other 3.Waste batteries will be stored as per the BATOT and site FPP 4.As per 3. 5. Containers of waste batteries will be stored in well-ventilated designated areas of a building or undercover, which provide a dry and cool environment, prevents exposure to extreme temperatures and is away from sources of heat, including direct sunlight. 6. Lead acid batteries will be stored upright with terminals capped or insulated. Other batteries will have terminals and any wired connections insulated where practicable, particularly lithium batteries and larger batteries and battery packs from WEEE and EVs and will be packed in a way that prevents shorting or damage, for example, using a suitable packing material. 7. Batteries will be stored in accordance with the procedure outlined in Section 4 and 8 of the BATOT 8. Batteries will be stored in accordance with the procedure outlined in Section 4 and 8 of the BATOT 9. Batteries will be stored in accordance with the procedure outlined in Section 4 and 8 of the BATOT 10. Batteries that are too large to be stored in appropriate containers (for example, large battery packs and battery modules from EVs), will be stored in accordance with the procedure outlined in Section 4 and 8 of the BATOT and the FPP. 11. Waste batteries will be handled carefully to prevent damage, for example, from being dropped or other physical impact, particularly during loading and unloading activities, transport and movement around site.

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6. Lead acid batteries must be stored upright with terminals capped or insulated. Other batteries should have terminals and any wired connections insulated where practicable, particularly lithium batteries and larger batteries and battery packs from WEEE and EVs, and must be packed in a way that prevents shorting or damage, for example, using a suitable packing material, such as vermiculite. 7. Waste batteries must not be stored on-site in cut-off IBCs (Intermediate bulk containers) or loose in skips, vehicle trailers or similar large bulk containers. If lead acid batteries are loaded in to large bulk containers or trailers in preparation for imminent off-site transfer to a battery treatment facility, they must meet the relevant ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road) requirements for bulk carriage and be kept closed or sheeted (other than during loading or unloading). Transfer of the batteries to the large bulk container must be done in a careful and controlled manner that prevents and minimises damage or breakage (for example, they are not tipped or dropped from a height that could cause damage) and ensure, as far as practicable, that the batteries remain upright with terminals protected. Unless this can be reliably achieved and demonstrated, the batteries must remain in their original smaller containers (for example, rigid lidded battery boxes) for loading and loading. 8. Rigid lidded containers must be used for the storage and handling of lithium batteries, lead acid batteries, other vehicle batteries (for example, NiMH batteries from hybrid vehicles) and unsorted or mixed loads of batteries that may contain these batteries. Such containers should also be used for the storage of other waste batteries where possible to ensure they are stored securely and protected from damage. Flexible (non-rigid) containers (for example, flexible IBCs (FIBCs)) must not be used for the storage of waste batteries that contain flammable substances, corrosive substances (unless chemically resistant to them) or free liquids. If other separate or sorted types of battery are received and stored in flexible containers (for example, FIBCs) they should meet the requirements of appropriate measure 3. above and must be: • stored inside a building • stored and handled safely and carefully to protect their integrity and prevent any damage to the container or its contents, for example, from drops, falls or crushing (see appropriate measures 28 and 29 in Section 4.2) • designed to keep their shape and prevent sagging and bulging when filled (for example, FIBCs that use four-panel or baffle design bags) 9. Separate collections of lithium batteries must be stored in rigid containers that are non-conductive or provided with a non-conductive liner (for example, a UN approved steel drum with an internal plastic liner). The containers must be kept closed and stored in a dedicated area of a building or under weatherproof covering, in a cool, dry and well-ventilated location, away from sources of heating or ignition and other combustible or flammable materials (for example, including other combustible wastes or packaging materials). The batteries must have terminals or connections insulated to prevent short-circuiting or be separated by layers of vermiculite or other suitable non-conductive and non-combustible packing material. Li-ion batteries should be stored and handled in lined UN approved steel drums or other fire resistant containers to minimise the risk of fire propagation, particularly where they are stored in significant quantities. Pressure relief valves should be provided on the containers if there is the potential for the accumulation of flammable gases and spark arrestors should be fitted where necessary to reduce the risk of ignition. 10. Batteries that are too large to be stored in appropriate containers (for example, large battery packs and battery modules from EV or BESS), must be stored raised off the floor in a dedicated area of a building (constructed of non-combustible materials) that is cool, dry and well-ventilated, away from flammable or combustible materials and sources of heat or ignition, and with measures in place to protect the batteries from damage (for example, secure on pallets or in a racking system), shortcircuiting (including insulation of terminals) and overheating. Where available, they should be stored following manufacturer's instructions and remain in the packaging provided for their transportation. They must not be stacked directly on top of each other unless they are designed to be stored in this way. Where possible, prior to storage, large battery packs should be tested and, where necessary, safely discharged to minimise electrical safety and fire risks. 11. Waste batteries must always be handled carefully to prevent damage, for example, from being dropped or other physical impact, particularly during loading and unloading activities and movement around site. 12. Waste batteries must not be tipped during storage or handling activities unless it is risk assessed (for example, considering the type, chemistry and quantity of batteries) and carried out under cover or inside a building and in a careful and controlled manner	12. Batteries will not be tipped or dropped during storage and handling activities. Batteries may be tipped where integral to the loading of the treatment process. 13. Any tipping will take place within the building which is sealed or within the enclosed treatment process. 14. Not applicable 15. Lithium batteries are recognised as a fire hazard and will be marked and stored accordingly, for example, with adequate fire breaks and away from potential ignition sources and other combustible material. 16. Lithium batteries will be stored and handled with caution and in a way that prevents them from: • coming into contact with any liquids • being damaged (e.g. dropped, impacted, punctured) • short-circuiting • overheating or being exposed to high temperatures 17. SUEZ will have procedures and training in place for identifying and managing damaged waste batteries in storage. Damaged waste batteries will be managed in accordance with Waste Acceptance appropriate measures 15, 16 and 17. 18. The site will have procedures and measures in place to identify and manage any overheating batteries in a quick and safe manner. Infrared cameras or detectors (fixed or hand-held) will be used to regularly monitor the temperature of separate collections of Li-ion batteries during storage and identify deviation from the normally expected temperature. Other batteries or wastes should also be monitored where there is a risk of self-heating or overheating. Refer to FPP for further information.

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(for example, minimising tipping height and angle) that will prevent damage to the batteries and minimise associated risks, such as short-circuiting, fire or leakage or loss of materials. 13. Where tipping of waste batteries is necessary for the loading of a treatment process (including sorting) and could cause damage, leakage or loss of battery materials, it must be risk assessed (for example, considering the type, chemistry and quantity of batteries) and carried out inside a building and using enclosed plant or equipment (for example, enclosed and abated feed hopper) with appropriate measures in place to ensure that: • any materials and liquids released are appropriately collected and contained (for example, battery electrolyte) • diffuse emissions to air are prevented or controlled (for example, contained, extracted and abated), • other operational risks (for example, fire, electrical hazards, chemical reactions and corrosion) are prevented or minimised 14. If lead acid batteries are removed from containers (including large bulk containers or tailers) in preparation for on-site treatment, they must be: • handled and stored with care to prevent and minimise damage or breakage (for example, not dropped from height, crushed or impacted) • kept inside an enclosed building, in dedicated storage bays or areas that are provided with acid-resistant surfacing and self-contained drainage Any electrolyte lost from damaged batteries must be collected by the drainage system, or alternative spillage collection measures, and sent for appropriate treatment. If other materials leak or are lost from the batteries (for example, lead sulphate paste) they must be collected without delay using appropriate equipment and procedures. The collected residues must be stored in appropriate lidded, leakproof and chemically resistant containers. Any containers or surfaces affected by the spillage must be cleaned to prevent contamination leaving the storage area (for example, on the wheels of vehicles). Where necessary to prevent and control diffuse emissions to air (subject to a risk assessment of emissions (including sulphuric acid fumes, lead and other particulates) that considers the likelihood and extent to which damaged or broken batteries may be received or stored in the building and the measures taken to prevent, minimise and manage them): • the building must be kept under adequate negative pressure and provided with appropriate air extraction and abatement systems • other than when access is required, building doors and windows must remain shut to provide containment Procedures must be in place to minimise the time that waste batteries are stored in the dedicated bays or areas, prioritising the treatment of the oldest waste and ensuring that bays are regularly cleared to allow the inspection, cleaning and maintenance of surfacing and drainage systems and prevent the accumulation of waste (for example, at the back or bottom of a storage bay or area), including liquids and other residues. 15. Where lithium batteries (Li-ion or Li metal) are stored, these must be recognised as a fire hazard, marked, and stored accordingly, for example, with adequate fire breaks and away from potential ignition sources and other combustible material. 16. Lithium batteries must always be stored and handled with caution and in a way that prevents them from: • coming into contact with any liquids • being damaged (e.g. dropped, impacted, punctured) • short-circuiting • overheating or being exposed to high temperatures 17. You must have procedures and training in place for identifying and managing damaged waste batteries in storage. Damaged waste batteries should be managed in accordance with Waste Acceptance appropriate measures 15, 16 and 17. 18. The site must have storage procedures and measures in place to promptly identify, manage and, where possible, isolate any overheating Li-ion batteries in a quick and safe manner. Infrared cameras or detectors (fixed or hand-held) should be used to regularly monitor the temperature of separate collections of Li-ion batteries during storage and identify deviation from the normally expected temperature. Gas detection systems can also provide an early warning of battery thermal runaway and release of associated off-gases. The method and frequency of monitoring should be informed by risk assessment, for example, considering	

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the type and quantity of waste stored and potential for heating. The completion of these checks must be recorded. Other waste batteries should also be monitored and managed appropriately where there is a risk of self-heating or overheating.	
5. Waste treatment appropriate measures	
5.1 Preparing batteries for reuse or further treatment (including sorting, testing, charging, discharging and dismantling) 1.The sorting of mixed batteries into their different types or chemistries must take place in a dedicated area of a building. Sorting may be undertaken manually or using automated mechanical systems (for example, using infrared, X-ray, laser or optical devices). Where sorting is done manually, site operatives must receive regular training on the identification of relevant battery types and chemistries and what to do if any non-conforming batteries or other wastes are identified in a load. If batteries are sorted mechanically then you must have measures in place to monitor and assess the performance and reliability of the sorting process. Once sorted, the batteries must be repackaged in appropriate containers that are clearly labelled to identify their contents and date of sorting and stored in accordance with the relevant requirements of Section 4.2. 2. Staff involved in testing, charging and discharging batteries must be appropriately trained in how to do it safely and the equipment used must be tested and inspected regularly by a qualified electrician. Activities involving high voltage equipment and batteries (for example, the testing, charging, discharging or dismantling of EV batteries or similar) must be undertaken by appropriately trained and qualified technicians, for example, holding an IMI Level 4 certificate for diagnosis, testing and repair of electric/hybrid vehicles and components, or equivalent qualification. 3. Activities involving the testing, charging, discharging and dismantling of batteries must be undertaken in dedicated and marked, well-ventilated areas of a building, away from waste storage areas and flammable or combustible materials. Areas where such activities are carried out on large Li-ion battery packs or modules should be provided with thermal imaging equipment to monitor and identify increases in battery temperature. You must have procedures and measures in place for the safe management of damaged or self-heating batteries identified during these activities, for example, involving their safe removal and insolation. 4. To minimise potential risks such as electric shock, short circuiting and thermal runaway, large battery packs and modules (for example, from EV or BESS) should be tested and safely discharged to an appropriate level before being subject to further treatment (including dismantling, where possible). 5. Large Li-ion battery packs, for example, from EVs or BESS, may contain liquid coolants, including ethylene glycol water solutions. Where relevant, these liquids must be fully drained from the batteries prior to mechanical treatment (for example, shredding). Liquids removed from batteries must be collected and stored in appropriate sealed containers in an appropriately contained or bunded storage area and sent for appropriate recovery or disposal. Other components that should be removed from large Li-ion battery packs prior to mechanical treatment include insulation materials (for example, components containing ceramic refractory fibres) and other electronic components such as external electric cables, battery management systems and central processing units and printed circuit boards. 6. The selection and design of the battery discharging process must consider and have measures in place to mitigate and minimise relevant hazards, including, for example, electrical hazards, gas formation, battery corrosion, electrolyte leakage and temperature rise. Where possible, and practicable to do so, you should look to recover energy from battery discharging activities. 7. Where solutions and liquids are used to discharge batteries (for example, through immersion), they must be contained in an appropriate tank or container resistant to the chemicals and processes involved and provided with appropriate secondary	Detailed with Appendix B, C and D. 1. All staff that undertake manual sorting within he dedicated area of the building are full trained in the identification listed. 2. All staff involved in battery testing, charging, and discharging are fully trained in safe handling procedures. Equipment is regularly inspected by a qualified electrician, and all charging/discharging activities are conducted in designated, ventilated areas away from waste and flammable materials. 3. All of the listed activities take place within dedicated areas as per the site layout plan. The site FPP manages the management of combustible and flammable wastes. 4. Discharging of these batteries will take place prior to further treatment. 5. Not relevant 6. The discharging process has been designed for the operation described in the BATOT. 7. Not applicable 8. SUEZ will give priority to testing and preparing waste batteries where they could be reused. If they cannot be reused, SUEZ will make sure they are recycled or recovered. 9. All waste accepted at the site goes through pre acceptance procedures so identification and segregation of waste batteries that could be reused will be determined as soon as possible. 10. Waste is stored as per Section 4 of the BATOT 11.SUEZ will not identify batteries containing POPs for reuse 12.Not applicable 13.Not applicable 14.Not applicable

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containment. The liquid used must be subject to regular sampling and testing to inform its reuse or safe disposal, including the need for any treatment. 8. You should give priority to testing and preparing waste batteries where they could be reused. If they cannot be reused, you must make sure they are recycled or recovered at a suitable permitted facility. 9. You should identify and segregate all waste batteries that could be reused as soon as possible to prevent damage to them and to maximise the opportunities for reuse. 10. You must store batteries designated for reuse in appropriate containers and packaging, in a building and separate from other waste batteries. 11. Waste batteries that are subject to the POPs Regulations are not eligible for reuse. Where relevant, you should follow our guidance on how to identify and destroy waste that contains POPs and the management of waste lead acid batteries containing POPs. 12. Any batteries that are being prepared for reuse must be fully functional and electrically safe, in accordance with all relevant product safety standards and regulations. 13. If you are preparing batteries for reuse you must take precautions to make sure there is no pollution of the environment. The standards specified elsewhere in this guidance for storage of components, liquids and other materials apply equally when batteries are being tested and prepared for reuse. 14. Following preparation for reuse, an end of waste assessment must be undertaken and recorded, to make sure the batteries meet all of the conditions to be considered a non-waste product, taking into account Environment Agency guidance on the definition of waste and end of waste tests.	
5.2 General waste treatment 1. Where wastes cannot be prepared for re-use, they must be treated to maximise the recycling and recovery of materials whether that is at the same facility or by further downstream processing. 2. You must fully understand, monitor and optimise your waste treatment process to make sure you treat waste effectively and efficiently. You must not treat waste to deliberately dilute it or mix any hazardous outputs with any non-hazardous outputs. 3. The treated output material must meet your expectations, and you must fully classify and characterise them to ensure they are suitable for their intended disposal or recovery route. 4. You must identify and characterise emissions from treatment processes and take appropriate measures to control them at source. 5. You must have up-to-date written details of your treatment activities, and the abatement and control equipment you are using. This should include information about the characteristics of the waste you will treat, and the waste treatment processes, including: • simplified process flowsheets that show the origin of any emissions • details of emission control and abatement techniques for emissions to air and water, including details of their performance • diagrams of the main plant items where they have environmental relevance – for example, storage tanks, treatment and abatement plant design • details of physical treatment processes, for example shredding, separation, compaction, filtration, heating, cooling or washing • details of any treatment processes (chemical, thermal or biological) • details of any effluent treatment, including a description of any flocculants or coagulants used • an equipment inventory, detailing plant type and design parameters – for example, time, temperature, pressure • waste types to be subjected to the process • the control system philosophy and how the control system incorporates environmental monitoring information • process flow diagrams (schematics)	Detailed with Appendix B, C and D.

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• venting and emergency relief provisions • a summary of operating and maintenance procedures • process instrumentation diagrams 6. 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 may include: • unexpected releases • start up • momentary stoppages • shut down 7. You should use material flow analysis for relevant contaminants in the waste to help identify their flow and fate. You should use the analysis to determine the appropriate treatment for the waste either directly at the site or at any subsequent treatment site. Material flow analysis considers the contaminant quantity in the: • waste input • different waste treatment outputs • waste treatment emissions 8.You should use the analysis and your knowledge of the fate of the contaminants to make sure you correctly treat and either destroy or remove them. 9. The use of material flow analysis should be risk-based considering: • the hazardous properties of the waste • the restricted chemicals in the waste • the risks posed by the waste in terms of process safety • occupational safety and environmental impact • knowledge of the previous waste holders 10.A treatment process may destroy certain substances in the waste. It could also put substances into the air, water or the ground, or produce residues which are sent for disposal. You should minimise the weight of these outputs. The treatment process may produce residues for recovery or reuse, and you should maximise the weight of these outputs. 11. You must not proceed with the treatment if your risk assessment or material flow analysis indicates that losses from a process will cause: • the breach of an environmental quality standard • the breach of a benchmark • a significant environmental impact 12. The treatment plant must be specifically designed, commissioned and operated to be fit for purpose. The designs need to consider chemical process hazards and a hazard assessment of any potential chemical reactions. They also need to consider prevention and protective measures and process management, such as: • working instructions • staff training • appropriate process control measures • monitoring systems, alarms and interlocks • plant maintenance • checks • audits • emergency procedures	

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13. To track and control the process of change, you must have a written procedure for proposing, considering and approving changes to technical developments, or to procedural or quality changes. 14. Where an emission is expected, all treatment plant or vessels must be enclosed and vented to the atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief). 15. You must minimise the release of diffuse emissions to air from activities which may give rise to them (for example, shredding or granulating) by: • carrying out the activity using enclosed equipment or in an enclosed building • maintaining the enclosed equipment or buildings under an appropriate pressure • collecting and directing the emissions to an appropriate abatement system 16. You must make sure that any substances, mixtures and components removed as part of your treatment process are subsequently recovered or disposed of at an appropriately permitted facility. 17. Treatment activities must take place under weatherproof covering such as a roofed building, in a dedicated area provided with impermeable surfacing and sealed drainage and with spillage collection facilities appropriate to the materials being handled. Associated equipment, including hoppers, conveyors, storage skips or bays, must also be provided with appropriate covering to prevent emissions and exposure to rain, wind, extreme temperatures and direct sunlight. 18. Where wastes are shredded, you may use a range of separation technologies to further segregate and purify the fractions produced. For example, eddy-current separators, electrostatic separators, and density separation. Such treatment processes must be contained, extracted and abated to prevent and control emissions (including, for example, dust, metals, volatile organic compounds (VOCs) and other relevant gases, such as hydrogen fluoride (HF) and hydrogen chloride (HCl)). 19. You must fully characterise and classify fractions produced by your waste treatment processes. 20. You must make sure that any required sample is representative of the waste and has been taken by someone technically competent to do so. A representative sample is one that takes account of the full variation and any partitioning of the material. 21. Wherever possible you should sample waste fractions and residues in line with relevant guidance, for example: • WM3 Waste classification – Guidance on the classification and assessment of waste – Appendix D • EN 14899 Characterization of waste – Sampling of waste materials – Framework for the preparation and application of a Sampling Plan • CEN/TR 15310 1 Characterization of waste – Waste Collection – Part 1: Guide on the selection and application of criteria for sampling under various conditions • CEN/TR 15310 2 Characterization of waste – Waste Collection – Part 2: Guide on sampling techniques • CEN/TR 15310 3 Characterization of waste – Waste Collection – Part 3: Guide on procedures for sub sampling in the field • CEN/TR 15310 4 Characterization of waste – Waste Collection – Part 4: Guide to the packaging procedures for storage, conservation, transportation and delivery of samples • CEN/TR 15310 5 Characterization of waste – Sampling of waste – Part 5: Guide on the process of developing a sampling plan. 22. You must fully characterise and classify process solutions and effluents before determining suitable disposal options. 23. Chemical analysis carried out on waste fractions and residues produced by your treatment process must be carried out by an independent accredited laboratory, using recognised accredited methods where they are available. 24. You must only use waste codes for single material outputs, for example plastic or metal, where the treatment involved is aimed at producing a pure material fraction. Contamination by other materials must be negligible.	

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5.3 Additional measures for the treatment of waste batteries 1. Your treatment process must be specifically designed, built, operated and maintained for the type and chemistry of waste batteries that it will treat, taking into account, for example, the materials and chemicals contained in the waste, the effect of any residual charge they may contain, and the potential emissions and other risks associated with their treatment, such as chemical reactions, corrosion, fire and explosion and electrical hazards. 2. Other than initial sorting and dismantling activities (see Section 5.1), batteries should not be treated manually by hand, for example, using manual hand tools. 3. Mechanical treatment of waste batteries must take place in dedicated, enclosed treatment plant that makes sure: • all substances released during treatment are collected and contained • emissions are prevented and minimised through the provision of appropriate extraction and abatement systems, including gases (for example, steam, other vapours, mists and fumes), dusts and particulates 4. Operators must have and maintain an emissions inventory that includes information on the potential emissions to air and water from the battery treatment processes undertaken, including their source, nature, composition and fate. The emissions released from a treatment process will vary, depending upon the type and chemistry of the batteries treated and the nature of the treatment processes undertaken. Examples of potentially polluting substances, which should be considered where relevant (based upon the chemistry of the batteries being treated), may include dusts and particulates, metals (for example, lead (Pb), nickel (Ni), cobalt (Co), copper (Cu), cadmium (Cd), manganese (Mn), lithium (Li), mercury (Hg), zinc (Zn)) and VOCs, as well as other substances such as sulphuric acid, ammonium chloride, ammonia, HF, HCl, potassium hydroxide, sulphur dioxide and per-and poly fluoroalkyl substances (PFAS). See Emissions Monitoring and Limits appropriate measures for more information. 5. Where possible, the battery treatment process and associated plant and equipment should be designed and operated to minimise manual handling of waste (for example, using enclosed conveyors and hoppers, forklift trucks). 6. Any liquids released from the treatment process, including wash waters, must be collected and contained in appropriate chemically resistant and bunded containers or tanks. Containers or tanks containing potentially volatile liquids, or liquids that may produce fugitive emissions (including odour, fumes or mists), must be held in fully enclosed containers or tanks. Tank vents must be provided with appropriate abatement where necessary to prevent emissions of volatile substances. 7. Solid waste materials and residues generated and collected from waste battery treatment processes must be collected and held in appropriate containers that are resistant to the materials contained and designed to prevent or contain potential emissions (for example, including emissions of dust, volatile gases/fumes, mists, odour, liquids). 8. Where the battery electrolyte is removed as part of the treatment process (for example, during the treatment of lead acid or lithium-ion batteries), the process must be designed and operated to ensure that it is safely collected and contained, and emissions to the environment are prevented (including potential emissions of volatile gases, other gases or fumes, acid mists and odour). The treatment process must also be designed and operated to optimise the removal and collection of the electrolyte and prevent or minimise the contamination of other output factions and materials. 9. The materials and fractions resulting from the shredding of batteries may need to be treated further to remove electrolyte (for example, vacuum drying of shredded Liion battery material or washing of the shredded plastic casings of lead acid batteries). Where this is done, the treatment process must be fully enclosed and contained, with emissions directed to an appropriate abatement or collection system. 10. The breaking of lead acid batteries must be undertaken using specialised battery breaking equipment and not using manual tools or other machinery, and in a way that prevents, or where that is not possible, minimises human contact and exposure. Batteries must not be dropped from or crushed by vehicles or mobile equipment. If mechanical saws are used to open batteries, this should be done in a contained enclosure with necessary measures in place to provide sufficient ventilation, extraction and abatement of emissions, safe collection of acid, and protection measures for site operatives (example of a ventilated battery saw). Battery acid must be directly collected and contained from battery breaking operations and held in enclosed acid-resistant tanks or	1. Detailed within section 3 of the BATOT. Maintenance is detailed within section 10.3. 2. After sorting and dismantling wastes are not treated manually. 3. Wastes are mechanically treated within an enclosed process detailed within section 3 of the BATOT. 4. Once operational, SUEZ will undertake emissions monitoring and produce an emissions inventory. 5. Methods are used to reduce the manual handling of waste. 6. No liquids are released from the treatment process. The site benefits from an appropriate drainage system. 7. Section 4.8 of the BATOT details the storage arrangements of waste outputs pending transfer. 8.Not applicable. 9.All treatment process are fully enclosed. 10.Not applicable, lead acid batteries accepted for transfer only. 11. Abatement described in section 4 of the BATOT. 12. Storage detailed within the BATOT and FPP. 13. Treatment process detailed within section 3.0 of the BATOT. 14.Monitoring and control detailed within sections 10 and 17 of the BATOT. 15.Inspection and maintenance detailed within 10.3 of the BATOT. 16. The FPP will manage flammable wastes at the site. 17.As per 16. 18.As per 16. 19.As per 16. 20. The goal of the operation is to maximise the recovery of output fractions and materials. 21. All treatment takes place within an enclosed unit.

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containers provided with appropriate secondary and tertiary containment, and not allowed to collect, drain or accumulate on open surfaces. 11. Dust and acid mist emissions from lead acid battery treatment processes must be collected and passed to an appropriate abatement system (for example, a bag filter or wet scrubber). If gas containing acid mist is sent to a bag filter, mist filters should be installed. Scrubbing water must be sent to an adequately designed waste water treatment plant to treat the pollutants contained (for example, acids and metals). 12. Lead acid battery storage and treatment areas must be provided with acid resistant surfaces and sealed drainage systems to collect any spillages, which are connected to dedicated waste acid storage tanks or an on-site effluent treatment plant. All equipment used must be acid-resistant. 13. Any mechanical treatment of lithium batteries, or other batteries or wastes containing flammable substances (for example, electrolytes or solvents), must be done using specialised processes and plant that are designed and operated to prevent and minimise the risk of fire or explosion. The shredding of such wastes must be done safely under controlled conditions (for example, using an inert gas, under vacuum or in water) to prevent explosions or ignition of the flammable electrolyte and other combustible or flammable substances or materials. Where forced ventilation is used to prevent the risk of explosions, gas concentrations must be kept below 25 % of the lower explosive limit. 14. Your plant must be fitted with appropriate process monitoring and control systems, for example, to: • detect any build-up of explosive or other hazardous gases • detect changes in operation conditions, for example, temperature, pressure, oxygen concentration, air flow • trigger appropriate automatic measures being taken (including, where necessary, safe plant shutdown) when relevant safe operating conditions and limits are approached or exceeded, for example, exceedance of oxygen concentration or lower explosive limit 15. You must take measures to prevent the corrosion of plant, equipment or other site infrastructure (including pipework, conveyors, vessels, flanges and fittings) that could come into contact with corrosive substances. Examples of corrosive substances include battery electrolytes (for example, sulphuric acid from lead acid batteries and potassium hydroxide from alkaline batteries) and associated substances or breakdown products (for example, hydrogen fluoride from the reaction between Li-ion battery electrolyte lithium hexafluorophosphate and water). Measures should include: • use of corrosion resistant materials • preventing or minimising the formation or deposit of corrosive substances • regular inspection and maintenance 16. Shredded lithium-ion battery material that contains the electrolyte and associated organic solvents should be considered flammable unless tested and demonstrated otherwise. The battery treatment process should be designed and operated as a contained and abated system whereby electrolyte is promptly removed and collected from the shredded material as an integral part of the treatment process and prior to its storage. Treatment to remove the battery electrolyte typically involves drying and evaporation (usually under vacuum) or washing of the shredded material. Treatment processes carried out on shredded battery material must be carried out in a controlled or inert atmosphere unless it has been treated to remove the electrolyte and organic solvents. 17. Any organic solvents or other flammable liquids or gases collected from battery treatment processes must be stored in appropriate vessels that are approved for the safe storage of the chemicals in question and in accordance with all other relevant guidance, for example, HSG 51 The storage of flammable liquids in containers, HSG 176 The storage of flammable liquids in tanks and HSG 140 Safe use and handling of flammable liquids. 18. Certain wastes (for example, Li-ion batteries and associated waste liquids, fractions and residues) may contain substances (for example, organic solvents) that have the potential to form explosive atmospheres. Areas of the site where flammable or explosive atmospheres may occur (for example, waste storage, handling and processing areas) should be assessed and, where	

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appropriate, classified into hazardous zones, in accordance with the requirements of DSEAR. Further guidance on DSEAR and hazardous area classification can be found on the HSE's website and in the Approved Code of Practice and guidance (L138). 19. Output fractions from lithium battery treatment processes may pose a fire risk if they contain substances such as residual electrolyte, organic solvents, or lithium and aluminium metal. Some fractions may also contain reactive chemicals that can generate harmful compounds if they come into contact with water (for example, thionyl chloride can react to produce hydrogen chloride and sulphur dioxide; lithium hexafluorophosphate can react to produce hydrogen fluoride). Such materials, including black mass, must be held in appropriate sealed containers, for example, UN approved steel drums, and stored under cover in a dry, well-ventilated location and away from potential sources of heat or ignition (including direct sunlight) and other flammable or combustible wastes. Pressure relief valves should be provided on containers if there is the potential for the accumulation of gases and spark arrestors should be fitted where necessary to reduce the risk of ignition of flammable gases. 20. Treatment processes must be designed and operated to maximise the recovery of output fractions and materials. Recovered materials include battery electrolytes, which can be recovered for re-use, for example, in the manufacture of new batteries or, in the case of sulphuric acid, used to produce gypsum. The metals used in battery electrodes, for example, the lead plate in lead acid batteries and the copper and aluminium foils in Li-ion batteries, can be recycled. The black mass recovered from the mechanical battery treatment processes can be treated further to recover metals (for example, cobalt, nickel, lithium, manganese and zinc) and graphite, typically involving the use of thermal or hydrometallurgical processes. Battery casing materials (for example, polypropylene from lead battery casings and metal casings from other types of batteries) should also be separated and recycled where possible. 21. Washing and rinsing processes (for example, for cleaning plastics or other recovered fractions or residues) must be undertaken in dedicated and contained plant and equipment, designed, monitored and maintained to provide effective washing to suitable a specification, and enclosed to contain potential fugitive emissions (for example, including VOCs, fumes, mists, spray and steam). Emissions must be collected and directed to appropriate abatement. Where possible, wash water should be reused and treated on-site using an appropriately designed waste water treatment plant or sent for further treatment at an appropriately permitted facility.	
5.4 Treatment of waste containing POPs 1. You must identify, separate and remove any plastic containing BFRs for further treatment. Some BFRs are POPs. 2. You must not mix batteries containing POPs with other batteries during treatment. They must be treated separately. You may only treat batteries containing POPs if the treatment process separates the components or materials containing POPs for further treatment. Lead acid batteries with cases made of polymers other than polypropylene, particularly ABS, are likely to contain brominated flame retardants including POPs. Further information is available on the management of waste lead acid batteries containing POPs. 3. You must make sure that any components or materials derived from the treatment of waste batteries that are POPs waste (as defined by Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants) are treated as required by that regulation. This means the treatment must make sure the POP content is destroyed or irreversibly transformed. The only known cost effective way of doing this is by incineration or similar thermal treatment. You must not recycle these materials containing POPs. 4. The treatment of batteries that are not POPs waste, but which may contain POPs in some components or materials, may result in fractions where the POPs threshold is exceeded. You must assess such fractions to establish whether the threshold is exceeded and, where it is, manage those fractions as POPs waste 5. You may treat materials (for example, plastic) that is POPs waste to separate the POPs containing fractions from the non-POPs containing fractions. For example, density separation can be used to separate plastic containing POPs from that which does not. The non-POPs fraction may then be recycled. You must demonstrate that your process reliably achieves a satisfactory separation.	It is understood that wastes accepted at the site do not contain POPs. If necessary SUEZ will assess materials containing plastics for POPs in line with published environmental guidance in POPS contained in different wastes. Materials containing POPs will be sent for onwards treatment.

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6. You must fully characterise and classify (including for POPs) process solutions and washings from treatment processes, for example, density separation, before determining suitable disposal options. Where these originate from the treatment of POPs waste, any POPs must be destroyed. 7. If you separate POPs containing fractions (for example, containing BFRs) from non-POPs containing fractions, you must monitor at least once every 3 months how much POPs material is present in any fraction destined for recycling. 8. Other hazardous chemicals may be used as flame retardants. For example, antimony trioxide has been widely used as a synergist with a range of BFRs, not just those that are POPs. It is present in some plastics at concentrations exceeding the hazardous waste threshold. You must consider antimony trioxide when you are classifying plastic containing fractions from the treatment of waste batteries.	
6. Emissions control appropriate measures	
6.1 Point source emissions to air 1. You must contain waste treatment processes to make sure that you collect, extract and direct all process emissions to an appropriate abatement system for treatment before release. 2. You must identify the main chemical constituents of the site's point source emissions as part of the site's inventory of emissions to air. You must include the speciation of volatile organic compounds (VOCs) if you have identified them in the emissions inventory. 3. You must assess the fate and impact of the substances emitted to air, following the Environment Agency's air emissions risk assessment methodology. 4. To reduce point source emissions to air (for example, dust, metals (particulates and vapours), volatile organic compounds and odour) from the treatment of waste, you must use an appropriate combination of abatement techniques, including one or more of the following systems: • adsorption • fabric filter • wet scrubbing • HEPA filter • condensation and cryogenic condensation • cyclone • electrostatic precipitator (ESP) • thermal oxidation This applies to all point source releases to air from waste treatment plant, including releases that are made inside a building, to help make sure that emissions are controlled at source and diffuse emissions are prevented. 5. You must ensure that waste gas treatment systems are appropriately designed (e.g. considering the maximum flow rate and pollutant concentrations), operated within their design ranges, and maintained (through preventive, corrective, regular and unplanned maintenance) to ensure optimal availability, effectiveness and efficiency of the equipment. 6. You must assess and design vent and stack locations and heights to make sure dispersion capability is adequate. 7. Where monitoring is required, including for odour, you must install a suitable monitoring point. Monitoring points will be required to meet MCERTS standards. 8. Your procedures must make sure you correctly install, operate, monitor and maintain abatement equipment. For example, this includes monitoring and maintaining: • appropriate flow and chemical concentration of scrubber liquor • the handling and disposal or regeneration of spent scrubber or filter medium	Emissions to air detailed within the Air Emissions Risk Assessment and Section 13 of the BATOT.

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6.2 Fugitive emissions to air (including odour) 1. You must use appropriate measures to prevent emissions of dust, mud, litter and odour. See our guidance on suggested appropriate measures to control dust, mud and litter, and to control odour.2. You must design, operate and maintain storage and treatment plant in a way that prevents fugitive emissions to air, including dust, volatile organic compounds, mists and odour. Where that is not possible, you must minimise these emissions. • storage and treatment plant includes associated equipment and infrastructure such as: ○ shredders ○ sorting equipment ○ conveyors ○ skips or containers ○ building fabric, including doors and windows ○ pipework and ducting 3. You must make sure fugitive emissions are collected and directed to appropriate abatement and your treatment plant must use high integrity components (for example, seals or gaskets). 4. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any of these wastes you must: • take appropriate, risk assessed measures to prevent and control emissions • prioritise their treatment or transfer 5. To prevent fugitive emissions to air from the storage and handling of odorous or dusty wastes, you should use a combination of the following measures: • store and handle such wastes within a building or enclosed equipment • keep buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system • where possible, locate air extraction points close to potential emissions sources • use fully enclosed material transfer and storage systems and equipment, for example, conveyors, hoppers, containers, tanks and skips • keep building doors and windows shut to provide containment, other than when access is required for loading or unloading • minimising drop heights • use misting systems and wind barriers 6. Where a dust management plan is required, you must develop and implement it following our guidance on emissions management plans for dust. **Maintenance and cleaning** 7. You must set up a leak detection and repair programme. You must use it to promptly identify and mitigate any fugitive emissions from treatment plant and associated infrastructure (such as pipework, conveyors, tanks). 8. 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. 9. Your maintenance and cleaning schedules must make sure that your plant is regularly cleaned to avoid large-scale decontamination activities. 10. You must take measures to prevent the corrosion of plant and equipment (for example, including treatment plant, conveyors or pipes that may come into contact with corrosive battery electrolyte or associated substances, such as hydrogen fluoride). This includes: • designing treatment processes to prevent or minimise the formation or deposition of corrosive substances	1. The management of dust, mud, litter and odour are covered in sections 14 and 16 of the BATOT. 2. The treatment process is fully sealed and is within a sealed building. 3. The abatement system is discussed in section 4 of the BATOT. 4. Waste acceptance is discussed in section 8 of the BATOT. 5. Management of dust, mud, litter and odour are covered in sections 14 and 16 of the BATOT. 6. Dust management plan not required. 7. Daily inspections of the site building and external areas are undertaken to check for leaks and spillages to ensure that any leaks and spillages identified are contained within the site. 8. Inspection and Maintenance detailed in section 10.3 of the BATOT. 9. Cleaning procedures will be detailed in the site EMS. 10 & 11. Maintenance detailed in section 10.3 of the BATOT. 12-19. Odour management is detailed in section 12 of the BATOT.

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• selecting and using appropriate construction materials • lining or coating equipment with corrosion inhibitors • regularly inspecting, cleaning and maintaining plant 11. You must have an appropriate regular maintenance programme covering all buildings, plant and equipment. This must also include protective equipment such as air ventilation and extraction systems, curtains and fast-action doors used to prevent and contain fugitive releases. **Odorous wastes** 12. 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. 13. 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 masking agents to be appropriate measures for the treatment of odorous emissions. 14. You must monitor and maintain 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. 15. Contaminated waters have potential for odours. You must store them in containers or enclosed tanks that are vented to an abatement system. 16. Where you expect odour pollution at sensitive receptors, or it has been substantiated, you must periodically monitor odour emissions using European (EN) standards. For example, either: • dynamic olfactometry according to EN 13725 to determine the odour concentration • EN 16841-1 or -2 to determine the odour exposure 17. If you are using alternative methods for which no EN standards are available (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. 18. Where you expect odour pollution at sensitive receptors, or it has been substantiated, you must also set up, implement and regularly review an odour management plan. It must be part of your management system and include all of the following elements: • actions and timelines to address any issues identified • a procedure for conducting odour monitoring • a procedure for responding to identified odour incidents, for example, complaints • an odour prevention and reduction programme designed to identify the source(s), to characterise the contributions of the sources and to implement prevention and reduction measures 19. Where an odour management plan is required, you must develop and implement it following our guidance on odour management plans.	

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6.3 Emissions of noise and vibration 1. You should design the layout of the facility to locate potential sources of noise (including building exits and entrances) away from sensitive receptors and boundaries. You should locate buildings, walls, and embankments so they act as noise screens. 2. You must use appropriate measures to control noise, for example, including, but not limited to: • adequately maintaining plant or equipment parts that may become noisier as they deteriorate – such as bearings, air handling plant, building fabric, and specific noise attenuation kit associated with plant or machinery • closing doors and windows of enclosed areas and buildings • avoiding noisy activities at night or early in the morning • minimising drop heights and the movement of waste and containers • using broadband (white noise) reversing alarms and enforcing the on-site speed limit • using low-noise equipment, for example, drive motors, fans, compressors and pumps • adequately training and supervising staff • where possible, providing additional noise and vibration control equipment for specific noise sources – such as noise reducers or attenuators, insulation, or sound-proof enclosures 3. Where you expect noise or vibration pollution at sensitive receptors, or it has been substantiated, you must create, use and regularly review a noise and vibration management plan. This must be part of the environmental management system and must include: • actions and timelines to address any issues identified • a procedure for conducting noise and vibration monitoring • a procedure for responding to identified noise and vibration events, for example, complaints 4. The noise and vibration management plan should also include a noise and vibration reduction programme designed to: • identify the sources of noise and vibration • measure or estimate noise and vibration exposure • characterise the contributions of the sources • implement prevention and reduction measures 5. Where a noise and vibration management plan is required, you must develop and implement it following our guidance on noise and vibration management plans.	1-5. Control of noise managed in section 11.0 of the BATOT
6.4 Point source emissions to water and sewer 1. 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. 2. You must assess the fate and impact of the substances emitted to water and sewer following the Environment Agency's risk assessment guidance. 3. Except for uncontaminated surface water (for example, roof drainage), discharges to water must comply with the conditions of an environmental permit, and trade effluent consent if to sewer. Relevant sources of waste water include (but are not limited to): • waste waters collected from treatment processes • waste compactor runoff • vehicle washing • vehicle oil and fuel leaks • washing of containers • spills and leaks in waste storage areas	Control of Emission to Groundwater, Surface Water and Sewer detailed within section 15.0 of the BATOT.

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• loading and unloading areas • uncovered storage areas 4. POPs may leach or wash out in particulates from some wastes, such as shredded plastic, if exposed to the weather. You must prevent the release of POPs to water or sewer by storing these wastes and any other shredded POPs waste under weatherproof covering. Waste waters from processes that treat POPs waste, which may contain POPs, must not be discharged to water or sewer. 5. To reduce emissions to water and sewer, if you need to treat waste water before discharge or disposal, you must use an appropriate combination of treatment techniques, including one or more of the following: • preliminary or primary treatment – for example, equalisation, neutralisation or physical separation • physico-chemical treatment – for example, adsorption, distillation or rectification, precipitation, chemical oxidation or reduction, evaporation, ion exchange, or stripping • biological treatment – for example, activated sludge process or membrane bioreactor • nitrogen removal – for example, nitrification and denitrification • solids removal – for example, coagulation and flocculation, sedimentation, filtration or flotation	
6.5 Fugitive emissions to land and water 1. You must use appropriate measures to control potential fugitive emissions and make sure that they do not cause pollution. See the guidance on emissions to water and leaks from containers. 2. You must have these in all operational areas of the facility: • an impermeable surface • sealed construction joints • spill containment kerbs • sealed drainage system 3. Your sealed drainage system must collect all surface water run-off and channel it to a blind sump unless it may be lawfully discharged to water or sewer. 4. You must collect and treat separately each water stream generated at the facility, for example, surface runoff water or process water. Separation must be based on pollutant content and treatment required. You must make sure you segregate uncontaminated water streams from those that require treatment. 5. You must use suitable drainage infrastructure to collect surface drainage from areas of the facility where you store, handle and treat waste. You must also collect washing water and spillages. 6. Depending on the pollutant content, you must either: • recirculate what you have collected • discharge it in accordance with an environmental permit or trade discharge consent • send it for further treatment 7. You should provide appropriate buffer storage capacity at your facility to store waste waters, considering: • potential abnormal operating scenarios and incidents • the nature of any polluting substances and their impact on the downstream waste water treatment plant and receiving environment 8.You must have appropriate measures in place to monitor, treat and reuse the water held in the buffer storage before discharging. 9. You must have measures in place to prevent overflows and failures from tanksand vessels, including where relevant:	Detailed with Appendix B, C and D.

Appropriate Measure	Compliance
• overflow detectors and alarms • directing over-flow pipes to a contained drainage system • locating tanks and packaged liquids in suitable secondary containment(bunds) • providing isolation mechanisms (for example, closing valves) for tanks, vessels and secondary containment 10.You must have design and maintenance provisions in place to detect and repair leaks. These must include regularly monitoring, inspecting and repairing equipment and minimising underground equipment and infrastructure. 11. You must take measures to prevent emissions from washing and cleaning activities, including: • directing liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for off-site disposal – you must not discharge them to surface or storm drains • where possible, using biodegradable and non-corrosive washing and cleaning products • storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains • preparing cleaning or disinfection solutions in contained areas of the site and never in areas that drain to the surface water system 12. Where relevant, you must have measures to prevent pollution from the on-site storage, handling and use of oils and fuels. Follow the guidance on oil storage regulations for businesses. **Spill response plan** 13. You must produce and implement a spillage response plan and train staff to follow it and test it. 14. Your procedures and associated training must make sure you deal with spillages immediately. 15. You must keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. Make sure kits are replenished after use. 16. You must take measures to stop spillages from entering drains, channels, gullies, watercourses and unmade ground. You must make available proprietary sorbent materials, sand or drain mats for use when required. 17. You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage. **Designing and maintaining surfacing and subsurface structures** 18. For subsurface structures, you must: • establish and record the routing of all site drains and subsurface pipework • identify all sub-surface sumps and storage vessels • engineer systems to minimise leakages from pipes and make sure they are detected quickly if they do occur, particularly where hazardous substances are involved • provide secondary containment or leakage detection for sub-surface pipework, sumps and storage vessels • establish an inspection and maintenance programme for all subsurface structures, for example, pressure tests, leak tests, material thickness checks or CCTV 19. For surfacing, you must design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account: • collection capacities • surface thicknesses • strength and reinforcement • falls • materials of construction • permeability	

Appropriate Measure	**Compliance**
• resistance to chemical attack and corrosion • inspection and maintenance procedures 20. You must have an inspection and maintenance programme for impermeable surfaces and containment facilities. **Tanks and bunding** 21. You must bund all above-ground tanks containing liquids whose spillage could be harmful to the environment. Bunds must: • be impermeable and resistant to the stored materials • have no outlet (that is, no drains or taps) and drain to a blind collection point • have pipework routed within bunded areas with no penetration of contained surfaces • be designed to catch leaks from tanks or fittings • have a capacity greater than 110 percent of the largest tank or 25 percent of the total tankage, whichever is the larger • have regular visual inspections – any contents must be pumped out or otherwise removed under manual control after checking for contamination • be fitted with a high-level probe and an alarm (as appropriate) if not frequently inspected • have tanker connection points within the bund (where possible), otherwise provide • adequate containment • have programmed engineering inspections – normally visual, but extending to water testing if structural integrity is in doubt • be emptied of rainwater regularly to maintain their containment capacity	
7. Emissions monitoring and limits appropriate measures	
7.1 Point source emissions to air 1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to air, such as the: • average values and variability of flow and temperature • average concentration and load values of relevant substances and their variability • flammability, lower and higher explosive limits and reactivity • presence of other substances that may affect the waste gas treatment system or plant safety ○ for example, oxygen, nitrogen, water vapour, dust 2. Monitoring locations must meet MCERTS standards. Monitoring must be carried out using MCERTS qualified accredited methods and MCERTs certified staff. Further guidance can be found in our guidance M1 sampling requirements for stack emissions monitoring. 3. You must carry out emissions monitoring when the plant is operating at or near to full treatment capacity. Information regarding the plant treatment processing rate and air flow rate at the time of monitoring must be recorded and submitted with the monitoring results. 4. You must monitor point source emissions to air from your treatment plant for the following substances using the monitoring standards stated. You must monitor at the frequencies stated and meet the specified emission limits unless your permit states alternative requirements. **Channelled emissions to air from the mechanical treatment of waste batteries** **Dust** Monitoring standard – EN 13284-1 Frequency – every 6 months	Emissions to air detailed within the Air Emissions Risk Assessment and Section 13 of the BATOT.

Appropriate Measure	Compliance
Emission limit – 5 mg/m³ In addition, you should monitor for the following substances and meet the specified emission limits where the substance concerned is identified as relevant based on your facility's emissions inventory unless your permit states alternative requirements. **TVOC (Total Volatile Organic Compounds)** Monitoring standard – EN 12619 Frequency – every 6 months Emission limit – 30 mg/m³ **Dioxin-like Polychlorinated biphenyls (PCBs)** Monitoring standard – EN 1948-1, -2 and -4 Frequency – every 12 months **Dioxins and Furans (PCDD/F)** Monitoring standard – EN 1948-1, -2 and -3 Frequency – every 12 months **Brominated flame retardants (BFRs)** Frequency – every 12 months **Metals and metalloids excluding mercury** (including As, Cd, Co, Cr, Cu, Mn, Ni, Pb, Sb, Se, Tl, V) Monitoring standard – EN 14385 Frequency – every 12 months **Total mercury** Monitoring standard – EN 13211. Frequency – every 3 months Emission limit – 7 µg/m³ **Sulphuric acid** Monitoring standard – US EPA method 8 Frequency – every 6 months Emission limit – 10mg/m3 **Hydrogen Chloride** Monitoring standard – EN 1911 Frequency – every 6 months Emission limit – 10mg/m3 **Hydrogen Fluoride** Monitoring standard – EN TS 17340 Frequency – every 6 months	

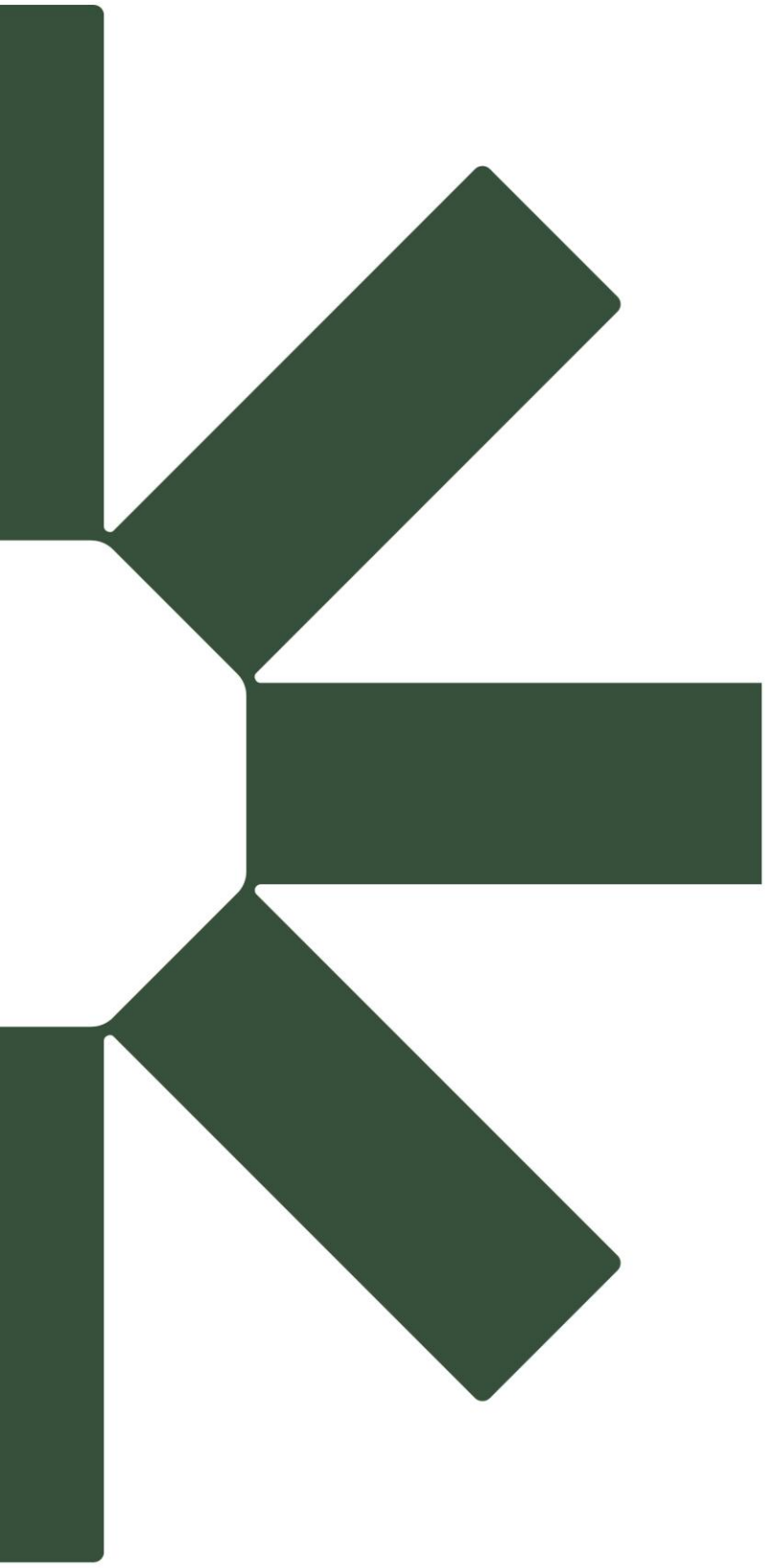
Appropriate Measure	Compliance
Emission limit – 1mg/m3 **Sulphur Dioxide** Monitoring standard – EN 14791 or CEN TS 17021 Frequency – every 6 months Emission limit – 150mg/m3 **Ammonia** Monitoring standard – EN ISO 21877 Frequency – every 6 months Emission limit – 10mg/m3 Periodic monitoring results should 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 (for example, dioxins and furans and dioxin-like PCBs should be monitored over a single period of at least 6 hours). Monitoring frequencies may be reduced if emission levels are proven to be sufficiently stable over time. Other monitoring requirements and limits may also apply to other relevant substances that are identified through you emissions inventory, depending upon the type and composition of the waste batteries treated and nature of your treatment process	
7.2 Point source emissions to water or sewer 1. Your facility's emissions inventory must include information about the relevant characteristics of point source emissions to sewer or water, such as: • average values and variability of flow, pH, temperature, and conductivity • average concentration and load values of relevant substances and their variability – for example, COD (chemical oxygen demand) and TOC (total organic carbon), nitrogen species, phosphorus, metals, priority substances or micropollutants • data on bio-eliminability – for example, BOD (biological oxygen demand), BOD to COD ratio, Zahn-Wellens test, biological inhibition potential, for example, inhibition of activated sludge 2. For relevant emissions to water or sewer identified by the emissions inventory, you must carry out monitoring of key process parameters (for example, waste water flow, pH, temperature, conductivity, or BOD) at key locations. For example, these could either be at the: • inlet or outlet (or both) of the pre-treatment • inlet to the final treatment • point where the emission leaves the facility boundary 3. For the following types of discharges, you must monitor point source emissions to water or sewer for the substances listed using the monitoring standards stated. You must meet the specified emission limits unless your permit states otherwise. **Direct discharges to water from the treatment of waste batteries** **TOC** Monitoring standard – EN 1484 Frequency – every month Emission limit – 60 mg/l	There will be no process or trade effluent discharges to water or sewer from the site.

Appropriate Measure	Compliance
COD Frequency – every month Emission limit – 180 mg/l The requirement is to monitor for either total organic carbon or chemical oxygen demand **Total suspended solids** Monitoring standard – EN 872 Frequency – every month Emission limit – 60 mg/l **Direct or indirect discharges to water from the treatment of waste batteries** **Hydrocarbon oil index** Monitoring standard – EN ISO 9377-2 Frequency – every month Emission limit – 10 mg/l **Direct or indirect discharges to water from the treatment of waste batteries, when the substance concerned is identified as relevant based on your facility's emissions inventory** **Metals and metalloids** Monitoring standard – various EN standards available Frequency – every month Emission limits: • arsenic, 0.05 mg/l • cadmium, 0.05 mg/l • chromium, 0.15 mg/l • copper, 0.5 mg/l • lead, 0.1 mg/l • nickel, 0.5 mg/l • mercury, 0.005 mg/l • zinc, 1.0 mg/l • manganese (limit set based upon environment risk assessment) • cobalt (limit set based upon environment risk assessment) **Perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS) and Decabromodiphenyl (deca-BDE)** Frequency – every 6 months. Monitoring frequencies may be reduced if the emission levels are proven to be sufficiently stable over time. Monitoring frequencies for discharges to sewer may be reduced if the downstream waste water treatment plant abates the pollutants concerned.	
8. Process efficiency appropriate measures	

Appropriate Measure	Compliance
8.1 Energy efficiency (installations only) 1. You must create and implement an energy efficiency plan at your facility. This must: • define and calculate the specific energy consumption of the activity (or activities) you carry out and waste stream(s) you treat • set annual key performance indicators – for example, specific energy consumption (expressed in kWh/tonne of waste processed) • plan periodic improvement targets and related actions 2. You must regularly review and update your energy efficiency plan as part of your facility's management system. 3. You must have and maintain an energy balance record for your facility. This must provide a breakdown of your energy consumption and generation (including any energy or heat exported) by the type of source (electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). You should provide Sankey diagrams or energy balances to show how energy is used in your waste treatment processes. 4. You must regularly review and update your energy balance record as part of your facility's management system, alongside the energy efficiency plan.5. You must have operating, maintenance and housekeeping measures in place in relevant areas, for example, for: • air conditioning, process refrigeration and temperature exchange systems (leaks, seals, temperature control, evaporator or condenser maintenance) • the operation of motors and drives • compressed gas systems (leaks, procedures for use) • steam distribution systems (leaks, traps, insulation) • space heating and hot water systems • lubrication to avoid high friction losses • boiler operation and maintenance, for example, optimising excess air • other maintenance relevant to the activities within the facility 6. You must have measures in place to avoid gross energy inefficiencies. These should include, for example: • insulation • containment methods (such as seals and self-closing doors) • avoiding unnecessary discharge of heated water or air (for example, by fitting simple control systems such as timers and sensors) 7. You should implement additional energy efficiency measures at the facility as appropriate, following our guidance on energy efficiency standards for industrial plants.	Detailed with Appendix B, C and D.
8.2 Raw materials (installations only) 1. You must maintain a list of the raw materials used at your facility and their properties. This includes auxiliary materials and other substances that could have an environmental impact. 2. You must regularly review the availability of alternative raw materials and use any suitable ones that are less hazardous or polluting. This should include, where possible, substituting raw materials with waste or waste-derived products. 3. You must justify the continued use of any substance for which there is a less hazardous alternative. 4. You must have quality assurance procedures in place to control the content of raw materials.	Detailed within Section B, C and D.

Appropriate Measure	**Compliance**
8.3 Water use (installations only) 1. You must take measures to make sure you optimise water consumption to: • reduce the volume of waste water generated • prevent or, where that is not practicable, reduce emissions to soil and water 2. Measures you must take include: • implementing a water saving plan (involving establishing water efficiency objectives, flow diagrams and water mass balances) • optimising the use of washing water (for example, dry cleaning instead of hosing down, using trigger control on all washing equipment) • recirculating and reusing water streams within the plant or facility, if necessary after treatment • the use of water for vacuum generation (for example, using liquid ring pumps with high boiling point liquids), where relevant 3. You must carry out a regular review of water use (a water efficiency audit) at least every 4 years. 4. You must also: • produce flow diagrams and water mass balances for your activities • establish water efficiency objectives and identify constraints on reducing water use beyond a certain level (usually this will be site specific) • identify the opportunities for maximising reuse and minimising use of water • have a timetabled improvement plan for implementing additional water reduction measures 5. To reduce water use and associated emissions to water, you should apply these general principles in sequence: • use water efficient techniques at source where possible • reuse water within the process, by treating it first if necessary – if not practicable, use it in another part of the process or facility that has a lower water quality requirement 6. If you cannot use uncontaminated roof and surface water in the process, you should keep it separate from other discharge streams – at least until after you have treated the contaminated streams in an effluent treatment system and have carried out final monitoring 7. You should establish the water quality requirements associated with each activity and identify whether you can substitute water from recycled sources. Where you can, include it in your improvement plan. 8. Where there is scope for reuse (possibly after some form of treatment) you should keep less contaminated water streams, such as cooling waters, separate from more contaminated streams. 9. You must minimise the volume of water you use for cleaning and washing down by: • vacuuming, scraping or mopping in preference to hosing down • reusing wash-water (or recycled water) where practicable • using trigger controls on all hoses, hand lances and washing equipment 10. You must directly measure fresh water consumption and record it regularly at every significant usage point, ideally on a daily basis.	Detailed within Section B, C and D.

Appropriate Measure	Compliance
8.4 Waste minimisation, recovery and disposal 1. You must have and implement a residues management plan that: • minimises the generation of residues arising from waste treatment • optimises the reuse, regeneration, recycling or energy recovery of residues, including packaging • makes sure you properly dispose of residues where recovery is technically or economically impractical 2. Where you must dispose of waste, you must carry out a detailed assessment identifying the best environmental options for waste disposal. 3. You must review options for recovering and disposing of waste produced at the facility on a regular basis. You must do this as part of the management system to make sure you are: • still using the best environmental options • promoting the recovery of waste where technically and economically viable	Detailed within Appendix B, C and D.



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