Swanscombe Solar Panel Recycling Facility

Environmental Management System

For

UBH Group
Solar Recycling Solutions
Unit B3
Manor Way business Park
Manor Way
Swanscombe
DA10 0PP

V.2D - December 2025

Table of Revisions & Reviews – Environmental Management System

Review Date	Revision Number	Date Of Issue	Reason for Review	Reviewed by:	Approved by:
09/25	V.1	09/25 - 10/25	Framework For New EMS for new solar panel recycling site	MRT/UBH	
09/25	V.2	10-12/25	Application Version comprising base documents for Permit Application	MRT/UBH	
06/26	V.3	02/26	Initial Operating Version incorporating any changes required by Environmental Permit and Final Commissioning	MRT/UBH	
			Annual Review of Previous Version		
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Document to be reviewed (and amended as necessary) as part of any upgrading or change of plant and/or in light of any incident or accident investigation.

Notwithstanding the above, this document will be reviewed annually as a minimum.

Contents

Text

Appendices

Drawings & Figures

Attached as File UBHSWAN25-02-EMS-Detailed Site Plan & Building Ground Floor - V1.pdf.

D.5 Site Drainage Plan – SRS Swanscombe
Attached as File UBHSWAN25-02-EMS-Site Drainage Plan-V1.pdf

Other plans relevant to the Fire Prevention Plan are presented in Appendix 3 - SRS Swanscombe Fire Prevention Plan.

1.0 Preface

1.1 This EMS and associated documents have been prepared with all reasonable care, skill & diligence by Mike Thompson Partnership Ltd (MTP) and associated consultants as necessary.

Information contained herein is based on the interpretation of data collected from various sources – mainly the client - which has been accepted in good faith as being accurate and valid.

These documents are for the exclusive use of the client named in the document header and only for the project also detailed in the header.

No warranties are expressed or should be inferred by any third parties. These documents should not be relied upon by other parties without written consent from MTP.

MTP disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the works.

Evaluations and conclusions detailed herein do not preclude the presence of other issues on site, which could not be reasonably have been revealed by these reports or any assessments detailed herein.

2.0 Introduction

2.1 Environmental Management System

This document constitutes the Environmental Management System (EMS) for the Solar Panel Recycling Plant located at the Swanscombe site operated by SRS Ltd / UBH Ltd.

This EMS has been generated to cover the Plant operations only and complies with current Environmental Permitting and WEEE Recycling Guidance and legal requirements.

Overall operations and management of the Swanscombe Plant are governed by this EMS. Admin and support functions detailed herein will be carried out by the current UBH and Swanscombe Admin Team.

2.2 Compliance with WEEE Recycling Guidance

Section 24 of this document will set out how this site, and operations complies with the requirements of the current WEEE Recycling Guidance where individual requirements are not detailed within the EMS main text, Sampling & Inspection Plan or accompanying documents.

3.0 Non-Technical Summary

3.1 Solar Recycling Solutions (SRS) are a trading arm of UBH Group Limited (UBH), a company specialising in the recycling/recovery of more awkward waste streams.

3.2 UBH/SRS have developed a way of recycling end-of-life solar panels using a novel technology developed in co-ordination with a number of Chinese technology suppliers.

3.3 This development has taken a number of years and the technology development has progressed to the point of the equipment being evaluated and CE marked as being safe and suitable for use within the UK.

The technology is specifically designed to process silicon/glass solar panels – as used in all the current domestic and commercial/industrial applications.

3.4

Due to issues with the presence of cadmium telluride and/or gallium arsenide, thin layer panels will not be processed at the site.

These compounds are deemed hazardous waste and the site is not planning to accept these panels due to their presence within the panels.

Therefore, this EMS will cover only the recycling od silicon/glass panels.

Should this situation change at some point in the future, the Environmental Permit will be amended to cover thin layer panels.

When/if required, this will entail amending the site processes, EMS and all associated systems and documents in co-ordination with E.A. advice

3.5 The current site was developed from late 2024 and comprises 3 bays of an existing warehouse/industrial unit (with a small external storage area) located in Swanscombe.

Location & infrastructure details may be found in later sections of this document

3.6 The deconstruction process comprises a fully automated line which, after inspection & manual removal of the junction/inverter boxes and cabling, deframes the panels and reduces the glass/silicon panel to its component materials.

All materials (except plastics) are produced in a format and purity that allows direct use as a replacement to virgin materials, enabling the products to be classed as End-of-Waste.

The End-of-Waste process & document systems will be generated in collaboration with the end-users of the materials, so ensuring that the quality required for the materials to replace virgin resources are attained and maintained.

Any plastics are recovered in granular form and, due to the potential presence of POPs in this material, are all sent for thermal recovery at a suitably permitted facility off site.

3.7 Due to the nature of the construction of solar panels, the waste units received at SRS are unsuitable for refurbishment and re-use.

Up until now, “recycling” of end of life solar panels has entailed deframing the panels, removing junction/invert boxes and cabling and landfilling the glass/silicon sheets as it has been impossible to viably split these materials.

SRS Swanscombe is the first site in the UK able to deconstruct and recycle solar panels to the point that over 96% of the panel by weight may be returned to marketplace in the form of constituent materials suitable for re-use as direct replacement of virgin resources.

3.8 All panels sent to SRS Swanscombe are deconstructed and recycled.

None are refurbished for re-use as a solar panel.

Therefore, the refurbishment, testing and quality control requirements for refurbished WEEE to be returned to marketplace (as set out in the WEEE Appropriate Measures Guidance) will not apply to the activities undertaken at Swanscombe.

3.9 As part of the Bespoke Permitting process, UBH were asked to confer with the Pre-Application Service with regard to the EWC Codes to be used for the incoming waste.

3.10 This had led to the waste codes listed in Section 7 being used, which include a number of codes covering the processing of WEEE containing hazardous materials.

3.11 Due to the site only accepting glass/silicon panels, the only item within the panels that may be considered hazardous is the c.0.1% of each panel (by weight) of lead contained in the solder locked into the panel.

3.12 The solar panels received on site comprise the following elements/resources by weight:

Material	Percentage
Glass (with max 0.2% Antimony Oxide)	70
Aluminium	12.5
Ethylene vinyl acetate (polymer 1)	6.7
Poly vinyl fluoride (polymer 2)	3.7
Silicon	2.7
Copper	1.3
Glass reinforced polymer/ polyamide (from J box)	1.6
Silicone	1.25
Lead (within soldered joints)	0.1
Tin	0.1
Silver	0.05

Apart from the plastics (sent for thermal energy recovery to counter any potential POPs present) all the other elements within the solar panel will be returned to the market place at a quality that will allow it to be used in replacement of virgin resources.

3.13 A Sampling and Inspection Plan (S&IP) is attached to this EMS and this sets out the quality control processes and systems followed on site.

This S&IP ensures compliance with the requirements of the site's registration as an AATF, the requirements of the PCS (Beyondly) that SRS are associated with and many of the requirements of the WEEE Appropriate Measures Guidance).

3.14 Should any part of the WEEE Appropriate Measures Guidance be not covered in this EMS and the attached documents, it will be specifically dealt with in Section 24 of this EMS.

4. Site Description

4.1. Area Location & Description

The SRS Swanscombe solar panel recycling site is located at Solar Recycling Solutions, Unit B3, Manor Way business Park, Manor Way, Swanscombe DA10 0PP.

The site lies just north of the A226 road and just west of the main London to Ashford railway line.

The immediate area around the site comprises a large industrial estate with various industrial units housing mainly vehicle maintenance works, vehicle breakers yards, etc.

Within 200m of the site (to both north & south) lie a number of the elements of the Swanscombe Peninsula SSSI.

The main site access is along Manor Way, an unadopted highway accessed from the roundabout on Tilman Avenue, some 60m north of the A226 London Road.

The National Grid Reference for the site is: TQ 60718 75042

The What3Words codes relevant to the site access are:

- A226 London Road Junction: NEAT.INVEST.VIBES
- Tillman Avenue Roundabout: BASIS.MOVIE.BEARD
- Site Main Entrance: INPUT.PLUS.AHEAD

4.2. The Swanscombe Site Structure

The site comprises 3 bays of a row of enclosed industrial/warehousing units, each bay measuring approximately 16m x 38m.

The warehouse units are constructed of brick/block work with some stell cladding.

The fibre cement roof is supported by reinforced concrete trusses. There are a number of translucent panels in the roof to allow some natural light into the building. The trusses are supported by reinforced concrete legs. Where walls are present, these are located between these legs.

The building has 3 large roller shutter doors to the northern side and a single door on the southeastern corner to provide vehicular access.

All sides of the building (apart from the common wall on the eastern boundary) are provided with personnel doors to give access and fire escapes.

Inside the building are a number of steel framed mezzanine floors providing storage and viewing areas. Inside the 2 end bays of the building lie two 2 storey 2 office/amenity areas. These are constructed of block work within the envelope of the main building. These do not rise to roof height but are flat roofed some 1-2m below the main roof.

The building is floored with a float-finished reinforced concrete floor. This is to be kerbed to a depth of 150mm at each external opening to provide a measure of bunding to control spillages/fire water.

There is an unloading area in front of the buildings, to the north. This lies in front of the main access to the buildings & the site reception area.

To the west lies another unloading/storage area with sealed hardstanding and drainage.

To the south lies an unsealed hardstanding area, with drainage gulleys present.

All external areas of the site are secured using 2.1m high palisade fencing with numerous locked gates providing vehicular access.

The northern side of the Main entrance for the site is on the north side of the building, alongside the unloading area.

All the buildings have a sealed, concrete floor and the unloading area to the north also has a sealed concrete floor.

The site is furnished with a CCTV system and fire alarm – both monitored by SRS staff.

4.3. Site Plans

Site plans are attached in the drawings section at the end of this document.

4.4. Site Use

Located in a partially quarried area, the site and buildings have had a number of uses in the past, including storage of various materials and, recently, a printing company.

4.5. Site Utilities

The site is supplied with mains power, water and gas.

4.6. Effluent Discharge & Drainage

The site does not operate under a Trade Effluent Consent as no effluent is produced.

Sewage from the amenity facilities goes to the public sewer under Manor Road to the north.

Drainage from the sealed unloading areas to the north & west of the building also go to the public sewer under Manor Road to the north.

Drainage from the hardstanding southern area is allowed to drain to ground through the surface of the yard.

No gulleys or interceptors are provided as no leachable materials or vehicles are stored here and all waste (which does not contain any leachable materials) is stored in sealed shipping containers.

4.7. Flood Risk

The site falls in a Flood Risk Zone 3 but the operations pose little environmental risk in the event of flooding.

The operations make no change to the buildings or infrastructure that have been site for 20+ years.

The operations do not generate, store or use large amounts of liquids. Those liquids that are present on site are stored in double bunded containers.

No waste materials, plant or infrastructure on site will float.

No materials on site are water soluble or will leach into standing flood water.

The site is located in a such a position that it will not be subjected to major flows of running flood water so there is nothing that could be washed away and cause issues downstream.

5. Contact Details – Site, Operators, Regulators & Stakeholders

Site Address:
Solar Recycling Solutions
Unit B3
Manor Way business Park
Manor Way
Swanscombe
DA10 0PP

5.2. Site Operator:

UBH Limited
Trading as
Solar Recycling Solutions
Unit B3
Manor Way business Park
Manor Way
Swanscombe
DA10 0PP

5.3. Key Contacts List

CONTACT	DESCRIPTION	OFFICE HOURS	OUT OF HOURS
Michele Foulds	Site Manager/TCM	01892 506916	07939 997260
Darent Velley Hospital Darent Valley Hospital, Darenth Wood Road, Dartford, Kent DA2 8DA	Local NHS Hospital (Main) & Accident & Emergency (A&E)	01322 428100 & 999 - Emergency	999
North Kent Police Station, Thames Way, Northfleet, Gravesend, Kent, DA11 8BD	Local Police	01622 690690 & 999 - Emergency	999
Dartford Fire Station, Powder Mill Lane, Dartford, Kent, DA1 1NS.	Fire & Rescue Service	01622 692121	999
Environment Agency, Orchard House, Endeavour Park, London Road, Addington, West Malling, Kent, ME19 5SH	Environmental Regulator	0370 850 6506	0800 80 70 60
Swanscombe & Greenhithe Town Council, 16, The Grove, Swanscombe, DA10 0AD	District Council General Enquiries	01322 385513	01322 385513

Kent County Council, County Hall, Maidstone ME14 1XQ	County Council (Waste Planning Authority) General Enquiries	0300 041 4141	0300 041 4141
Mike Thompson, Mike Thompson Partnership Ltd.	Specialist Waste & Permitting Consultant	07773 812410	07773 812410

6. Operating HoursWaste Reception & Recycled Product Despatch

Waste reception, unloading, bin washing and reloading operations will take place during the following hours:

Monday – Friday	06:00 to 18:00
Saturday	06:00 to 14:00
Sundays	06:00 to 14:00
Bank Holidays	06:00 to 14:00

No working will take place on Christmas Day, Boxing Day or New Year's Eve.

6.2. Solar Panel Recycling Plant

The Solar Panel Recycling Plant will operate for the same hours as waste reception and product despatch.

The site will be manned continuously during operating hours.

6.3. Maintenance Works

There may be some requirement to undertake maintenance, repair or development works at the plant outside the above operating hours.
Should that be required, the Environment Agency will be informed and the works required will be recorded in the site diary.

7. Waste Types, Capacities and ActivitiesWaste Types to be processed by the Solar Panel Recycling Plant

The Plant will only receive and process end of life silicon/glass solar panels, as it is specifically designed to only process this material.

Due to the nature of the materials used in the production of the solar panels, there may be the potential for some plastics to contain POPS.

The panels also contain lead, locked into the panel structure as solder.

Due to the presence of these materials (albeit in very small quantities), the use of EWC codes including hazardous wastes have been included in the list.

The proportions of the elements of typical glass/silicon solar panels are shown below:

Material	Percentage
Glass (with max 0.2% Antimony Oxide)	70
Aluminium	12.5
Ethylene vinyl acetate (polymer 1)	6.7
Poly vinyl fluoride (polymer 2)	3.7
Silicon	2.7
Copper	1.3
Glass reinforced polymer/ polyamide (from J box)	1.6
Silicone	1.25
Lead (within soldered joints)	0.1
Tin	0.1
Silver	0.05

Therefore, all panels will be assessed before reception at the plant to determine the best way to process them without risk and all plastics produced by the plant (c.1% by weight of the panel) will be sent for energy recovery at a suitably Permitted facility to avoid the possibility of any plastic containing POPS being returned to the marketplace.

To cover the potential classification of this incoming waste stream, the following waste types are included in this Permit (as advised by the Pre-Application Service on 24th Sept 2025):

Waste Code	Description
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 02	wastes from electrical and electronic equipment
16 02 13*	discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12 (if the hazardous substances are present – as outlined above)
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 15*	hazardous components removed from discarded equipment (again, this will be if hazardous substances are present)
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01	separately collected fractions (except 15 01)
20 01 35*	hazardous components removed from discarded equipment (if hazardous substances are present)

20 01 36*	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35.

Following advice from the Pre-Application Service, no thin layer solar panels will be received on site due to the potential presence of hazardous substances.

The assessment system for classifying panels and determining their suitability for processing is detailed in the Sampling & Inspection Plan (Appendix A.8) and Sections 10 & 12 of this EMS.

The Pre-Application Service advice is reproduced below:

> In terms of waste coding, because of the Hazardous substances that may be present in some types of photovoltaic panels – including lead, cadmium telluride, gallium arsenide, PFAS (short for perfluoroalkyl and polyfluoroalkyl substances) amongst other things so we cannot assume they are non-hazardous. There are 2 main types of photovoltaic panels – silicon and thin-layer, and it is the thin layer panels that contain the cadmium telluride and /or gallium arsenide which needs removing. As an operator you will have carry out waste classification assessment to determine the hazardous / non-hazardous nature of the panels that you receive: Waste classification technical guidance - GOV.UK (www.gov.uk) .

7.2. Waste Tonnages to be processed by the Site

The maximum annual throughput of the Solar Panel Recycling Plant is 400,000 panels per year when working at full capacity.
As solar panels can weigh up to c.25kg each, this means the Plant is capable of processing c.100,000 tonnes per annum.

The maximum total annual tonnage throughput of the Solar Panel Recycling Plant is: 100,000 tonnes per annum giving a maximum daily throughput of 400tonnes.

The maximum total treatment capacity of hazardous waste material will be 9.5 tonnes per day/2,500 tonnes per annum.

7.3. Waste Storage Capacity

The maximum waste storage capacity at the Swanscombe Site will be 5,000 tonnes, stored in a manner to ensure compliance with the requirements of this EMS and the Site Environmental Permit.

This storage capacity allows for maintenance/breakdown cover and to even out the processing capacity of the plant itself.

All waste stored will be effectively non-flammable and will not produce leachable contamination due to the nature of the solar panels being processed.

Lead from solder and plastics potentially containing POPs will also be stored on site in their final granulated form whilst awaiting despatch for either thermal recovery or onwards re-use.

The total storage capacity of these elements within the granulated form will be c.40 tonnes in segregated, sealed & labelled containers.

7.4. Waste Activities to take place at the Swanscombe Site

The waste recycling and processing activities undertaken at the Site are as follows:

- **R4: Recycling or reclamation of metals and metal compounds**
- **R5: Recycling or reclamation of other inorganic materials**
- **R13: Storage of waste awaiting recovery**

8. Site Noticeboard & SecuritySite Noticeboard

8.1.1. The Site Noticeboard will be located on the front of the building (north side) next to the Reception entrance.

8.1.2. The Site Noticeboard will display the following information:

- Site Name and Address
- Site Environmental Permit Holder Name
- Site Operator Name
- Environmental Permit Number
- Emergency Contact Name and Telephone Number
- Statement that “The Site is permitted by the Environment Agency”
- Environment Agency contact numbers
- Days and Hours Site is open to receive waste

8.2. Site Security

8.2.1. Vehicle access to the site yards are via a gated access managed by the site operations staff and kept locked except when deliveries are booked to arrive.

8.2.2. Access to the main building is via a number of roller shutter & personnel doors, kept closed except for when materials are being moved in and out of the building.

These doors are locked when the site is non-operational.

8.2.3. All vehicles entering the site, for whatever purpose (apart from staff vehicles), will be pre-booked.

No ‘on spec’ discharge of waste will be allowed at the site.

This is possible due to the nature of the waste processed at the site and also the supply contracts that will cover the site’s operation.

8.2.4. All operation of the Solar Panel Recycling Plant will take place within the main site building, as shown on the attached detailed site plan (D.4).

8.2.5. Any visitors, contractors or other persons coming to site will receive a full H&S induction within the Administration/Reception Area prior to accessing the main operating building.

Site safety instructions are to be followed including observing requirements related to appropriate PPE and any relevant access restrictions.

8.2.6. As all operations and equipment pertinent to the running of the site will be within the main building, which will be locked and covered by CCTV inside and out at all times, the site’s infrastructure is inherently secure.

8.2.7. The site will be equipped with a security system accredited against SIA (Security Industry Authority) and the NSI (Gold) (National Security Inspectorate).

The system monitors activity on site through CCTV cameras covering the interior and exterior of the building which alert the monitoring station to any perimeter breaches.

Thermal imaging cameras cover high risk areas which alert the monitoring station to increases in temperature potentially caused by fire.

The cameras automatically alert a number of SRS staff members who will notify the Police & Fire Rescue Service and will attend site if required.

8.2.8. The notification escalation procedure for the monitoring system is as follows:
- Site Shift Manager
- Site Manager
- Company Owner/CEO/Director

8.2.9. There are no Public Rights of Way or third-party access agreements that impinge on the site.

8.2.10. All CCTV footage is recorded and backed up off site and can be viewed at any time to investigate any issues that may have arisen.

9. Operational Management StructurePhysical Management Structure

The Swanscombe Site operates as the head office for SRS Ltd and a satellite office for UBH Ltd.

All Site and Plant control and administration functions are carried out within the on-site offices.

9.2. Personnel Management Structure

The Personnel Management Structure is as follows:

- Company Owner/CEO : Bryan Hughes
- Operations Director: Sal Rogers
- Financial Controller: Bryan Hughes
- Site Manager: Michele Foulds
- Technically Competent Manager: Michele Foulds

10. Site Operational Processes

This section details the hands-on service & operational processes associated with the Solar Panel Recycling plant.

10.1. Waste Reception & Recording

10.1.1. All incoming booked with Site Admin prior to admission to the site.

All incoming panels will be booked through the Contract Pack System (detailed in Section 12).

The deliveries will take place using HGV vehicles of a size to be determined under the Contract Pack.

There is no limit to the vehicles to be accepted during the working day, but the deliveries will be managed to ensure the site operations are not swamped.

Most deliveries will be by curtain-sider HGVs and will be covered by a Waste Carriers License.

10.1.2. Loads are received and unloaded in the loading/unloading area immediately outside the front of the process buildings.

10.2. Waste Inspection & Weighing

10.2.1. 5 panels are weighed from each load to give an average panel weight for the load. This is then multiplied by the number of panels in the load to give an accurate overall weight.

10.2.2. Incoming panels are inspected for signs of contamination with other wastes and contaminated panels are rejected if they are not processable.

10.2.3. Whilst such rejection is rare, it is recorded as required and the client informed before alternative disposal is arranged.

10.2.4. All rejected panels are placed in a covered, locked skip in the storage yard whilst awaiting disposal at a suitably Permitted facility.

This quarantine storage is clearly labelled to ensure the materials contained therein are not inadvertently processed on Site.

10.3. Truck Unloading, Waste Reception & Storage

10.3.1. The panels arrive palletised and are offloaded by forklift.

10.3.2. Upon offloading & inspection, the palletised panels are covered and the top panel turned upside down to prevent solar warming while in storage.

10.3.3. All incoming panels are stored in a secure location whilst awaiting processing, as shown on the detailed site plan (D.4).

10.3.4. The storage of unprocessed solar panels will be either in the eastern storage/unloading area or within the main building itself. All panels will be covered to prevent rainwater ingress.

This ensures the palletised panels are stored on a sealed surface with a sealed drainage system where appropriate.

10.4. Solar Panel Recycling Plant - Operational Processes

10.4.1. Solar panels are again inspected prior to processing.

The number of panels processed is recorded to ensure compliance with the relevant Waste Transfer/Duty of Care documentation and allow accurate Certification of Recycling to be undertaken for each load/client.

10.4.2. The junction/inverter boxes and cabling are removed manually and the panels placed onto the end of the stripping line, being inspected as they are loaded.

The junction/inverter boxes and cables are stored separately for granulation elsewhere on Site to recover copper, metals and plastics.

10.4.3. Once on the process line, the aluminium frame is pulled off the panel as a first operation. The aluminium frame pieces are placed in a skip for despatch off site & onwards processing at a smelter.

10.4.4. The toughened glass panel will crack when the frame is removed.

This panel, together with the silicon backing still attached, is placed glass-down on the deglazing unit and the glass is removed from the cells underneath by a patented milling system which grinds the glass off the silicon backing.

10.4.5. Once the glass is removed, it is ground to a fine (c.2mm) powder to allow further removal of any tramp material prior to being stored in bulk 1 tonne bags for onwards sale, despatch and re-use – directly to a glass factory as raw materials for their processing.

10.4.6. There may be a requirement to store the glass panels with the silicon backing after frame and junction/inverter box & cable removal.

If this is required, the glass/silicon sheets will be palletised, with either the top sheet placed glass down or the loaded pallet covered.

These pallets will be stored in locked, sealed containers located in the rear storage yard. Storage in this manner complies with WEEE Guidance.

10.4.7. The silicon backing cells are left as a single mat once the glass is removed. This is then shredded and granulated to allow the separation of the silicon from the metals included in the backing in the form of circuitry.

10.4.8. The silicon and metals are reduced to a granular form and then separated using a proprietary technology unique to this plant line to produce copper, silver, lead, silicone and plastics as granulated separated products or a purity suitable for onwards re-use.

The system granulators are designed so that minimal dust is produced, ensuring potentially harmful/hazardous materials (such as lead) are not reduced to respirable form and are delivered as part of a product stream that may be usefully and safely recycled by onwards processing and returned to the marketplace in a safe, usable form.

10.4.9. These products are stored in sealed bulk bags for onwards sale, despatch & re-use or, in the case of the plastics, for despatch for thermal recovery due to the potential for POPS to be present in the materials.

10.4.10. Copper cables and the junction/inverter boxes are granulated separately to produce copper and plastic granules.

10.5. Materials Granulation & Separation Processes

10.5.1. All products from the deconstruction process are reduced to either granular or powder form, either direct from the process line or from a separate granulation line.

10.5.2. The products from the main process line are separated and cleaned as part of the main line deconstruction operation.

Products are delivered to sealed bulk bags from the main line after separation using a number of proprietary methods included as part of the line process.

10.5.3. The junction/inverter boxes and cables manually removed from the panels are granulated on a separate process line.

This produces separated copper and metals in a form and purity sufficient to be sent straight for re-use.

Plastics are also produced in granular form from this process.

Plastics are sorted in sealed bulk bags whilst awaiting despatch, as are the granulated metals produced.

10.5.4. Products are delivered from the line in a form and purity ready for despatch for onwards re-use/recycling.

The only product not recycled is the granulated plastics generated from the granulation of the junction/inverter boxes and cables. As there is a chance of POPs being present in this product stream, this material is sent for thermal recovery to ensure any POPs present are removed from the marketplace completely.

10.6. **Product Sampling & Quality Control – Recycled Materials**

10.6.1. Products are sampled from the bulk bags as they are produced.

All samples are labelled with the date, time, contract number and bulk bag number to ensure traceability.

Where sampling and analysis is undertaken by a product end-user to confirm quality and, therefore, payment to SRS, these sample results will be labelled as externally generated and attached to the contract pack records for that particular batch of panels recycled.

10.6.2. The sampling regime and specification for each product is set by the end user, and the quality of the product determines the price.

10.6.3. As all the recycling products are generated through a defined system with tight quality control standards and are produced to comply with set quality standards that allow their use in place of virgin resources, SRS Swanscombe will be categorising these materials as End of Waste. The details for this may be found in the relevant sections of this document.

10.7. **Storage of Recycled Materials**

10.7.1. All deconstruction line products are stored in sealed, labelled bulk bags within the main process building.

10.7.2. Storage is on a sealed floor, under cover of the main building roof and protected by the building's security system.

10.7.3. The aluminium frame pieces are stored in a covered, labelled and locked skip in the rear yard whilst awaiting despatch to the smelter.

10.8. **Product Sale & Removal**

10.8.1. Apart from separated plastics – destined for thermal treatment – all products generated by the deconstruction process will be produced to a quality and purity (agreed with their end-users) that will enable them to be a direct replacement for virgin materials.

In this way, all products will be certified as End-of-Waste by SRS prior to despatch from the Swanscombe site.

10.8.2. All the production, sampling & analysis results will be retained for a period of 5 years to allow stakeholders to audit the deconstruction, recycling and End-of-Waste system to confirm compliance with regulations and any contract or PCS schemes clients are using.

10.8.3. Products are removed from site either by articulated HGV loads of bulk bags (granulated/powder products) or by skip (aluminium frame pieces) directly to their end-user to maintain security of the supply chain and ensure the quality of the product direct to the end-user.

10.8.4. All despatch movements are pre-booked prior to product being removed to ensure the site is either overcrowded with delivery/despatch vehicles or storing excess products.

If possible, the same trucks delivering the palletised solar panels will be used to backload the products, so reducing the transport impact of the overall operation and increasing efficiency/reducing transport costs.

10.8.5. All despatch documents will record the individual bulk bag numbers despatched, so allowing complete traceability for the client and any audited schemes.

Despatch records will be sent to the end-user and a copy attached to the relevant contract pack, so closing the contracted deconstruction/recycling operation.

10.9. **Control, Hazard Assessment & Storage – Waste Materials**

10.9.1. The site produces relatively small quantities of waste materials.
Waste is mainly generated through the site amenity and office block (break room and office waste) and plant maintenance (wiping cloths, spent lubricant, misc. maintenance waste) with very little waste produced from the process line itself as c.96% of the solar panel deconstructed is returned to the market place as an End-of-Waste product suitable for use as a direct replacement for virgin material.

10.9.2. Due to the nature and quantity of the wastes produced on site, their hazard level is extremely low.

The only wastes deemed Hazardous on site will be the spent lubricants and wiping cloths generated by maintenance of the site plant.

Disposal of these wastes will be managed through the use of Hazardous Waste Consignment Notes, usually generated by the collection/disposal contractor.

10.9.3. All wastes produced on site are stored in closed containers, either in the admin/amenity area (waste bins), maintenance area (closed containers) or the rear yard (closed, locked, labelled waste containers) whilst awaiting collection and disposal at a suitably Permitted facility.

10.9.4. Wastes are removed from site for safe disposal as soon as is practical after their generation. All wastes are removed by licensed contractors for disposal at a suitably permitted facility.

10.9.5. Records of all waste removal, including Duty of Care Notes and Hazardous Waste Consignment Notes are retained within the admin offices on site.

10.9.6. Any inspected and refused incoming solar panels will, if possible, be reloaded onto the vehicle & sent back to the client site.

10.9.7. All quarantined incoming wastes will be retained in a closed, locked and labelled bin in the rear yard whilst awaiting prompt collection and disposal at a suitably permitted facility.

10.10. **Emissions Control System Operations & The Storage and Control of Emissions Control System Waste**

10.10.1. The details for the operation of the dust extraction & filtration units may be found in Sections 23.2 & 23.3 of this EMS.

10.10.2. The collected dust from the extraction & filtration system is dropped from the bag filter units into sealed bulk bags stationed under the filter unit.

When these bags are full, they are removed, tied shut and stored within the process building.

10.10.3. The waste within the bulk bags is, by its nature, dusty and so will require disposal at a suitably permitted facility able to receive the material.

10.10.4. As most of the dust in the bags will be glass or silicon, it may be able to send these on for further purification & recycling at another suitable facility.

UBH/SRS will sample each bag of dust filtration plant waste to ascertain if this is possible.

If it can be achieved, this EMS will be amended to reflect the new procedure.

11. Maintenance Chemical Storage Maintenance fluids for the Solar Panel Recycling Plant comprise mainly lubrication oils and greases and cleaning fluids, such as detergents and similar.

11.2. The chemicals will be stored in a locked double bunded storage area, away from any sources of heat or naked flame.

This storage area is shown on the detailed site plan (D.4).

11.3. Any empty chemical containers, wipes or contaminated servicing materials will be stored in a secure, locked water proof container, clearly labelled and located in the southern yard on site.

These materials will be disposed of as soon as is reasonably practicable.

11.4. Waste lubrication fluids and cleaning chemicals will be stored in a secure, locked water proof container, clearly labelled and located in the maintenance storage area (as shown on the detailed site plan (D.4) prior to despatch to a suitably Permitted facility for disposal as soon as is reasonably practicable.

12. Administration, Records Keeping & Reporting (inc. Contract Pack Generation)Administration & Records Keeping

12.1.1. All administration and records keeping functions will be carried out within the SRS Admin Offices located on site.

12.1.2. All Duty of Care documentation (and solar panel Deconstruction/Recycling Contract documents) will be retained within these offices, with electronic copies held in secure cloud storage.

These documents will be made available to any stakeholders on request.

12.1.3. All Duty of Care documentation will be retained for a minimum of five years from date of generation.

12.2. Reporting

12.2.1. Waste Reporting

All reporting as required under the operating Permit will be undertaken by the Admin Office as part of the overall administration and document control required for the compliant operation of the Site Plant.
These reports include:

- Quarterly Returns
- Client Reporting
- Consignee Returns
- Waste Operator Returns
- AATF Returns
- Hazardous Waste Documentation (if required)

Further reports may be generated as required by clients, stakeholders and/or regulatory bodies.

12.2.2. Additional Reporting Requirements

Additional reporting will also be undertaken by the Admin Office.
These include:

- Water Consumption
- Emissions to Air Monitoring Reports
- Energy Usage
- Water Usage
- Raw Material Consumption

12.3. Recycling Contract Document

12.3.1. Initial enquiries are handled by the company sales team.

12.3.2. Successful deconstruction/recycling enquiries and pricing exercises will result in a Contract Pack being generated as part of the confirmation process.

12.3.3. The Contract Pack will contain the following information:

- Source of WEEE (site name and address within UK)
- Number of panels to be recycled
- Packaging method (usually palletised for removal by articulated truck)
- Panel manufacturer, model number & year of construction
- Panel specifications, technical details & component/constituent list
- Confirmation that no hazardous material is present within the panels
- Panel characteristics (size, weight, type, age, details of any damage, etc)
- Overall weight of end-of-life panels included in contract (number of panels x individual weight)
- Confirmation of EWC Code

- Collection point (includes collection method, loading point & any site-specific access issues)
- Client/WEEE producer (address, contact details, SIC code)
- Date of panel uplift from site
- Details of waste carrier registration (usually UBH/SRS)

12.3.4. These details allow the block booking of transport for the panels and also programming the reception, storage and processing of the panels at SRS Swanscombe.

12.3.5. The contract documents are held at SRS Swanscombe and the relevant Waste Transfer Notes for the incoming loads are attached to the contract documentation so that an accurate check on the number & weight of panels recycled under the contract can be maintained.

12.3.6. Upon completion of the contracted deconstruction & recycling, a copy of the complete contract pack is sent to the client and one is retained in the Admin Offices on site.

12.4. Duty of Care Documentation

12.4.1. Waste Transfer Note

The incoming loads under contract will each have a Waste Transfer Note as required under the Duty of Care Regulations.
As a minimum, the Waste Transfer Notes will contain the following information:

- Individual, traceable Waste Transfer Note number
- Source of WEEE (collection site name and address within UK)
- Number of panels within load
- Packaging method (usually palletised)
- Waste Description
- Overall weight of load (number of panels x individual weight)
- Confirmation of EWC Code
- Confirmation of Client SIC Code
- Client/WEEE producer (address, contact details, SIC code)
- Date of panel uplift from site
- Date of panel delivery to SRS Swanscombe
- Details of waste carrier registration (usually UBH/SRS – including company address)
- Registration number of delivery vehicle
- Signatures and names of driver & receiving member of SRS staff
- Confirmation of Permit/Exemption number & address for SRS Swanscombe

A sample Waste Transfer Note is included in the Appendices to the Sampling & Inspection Plan.

A copy of the signed, completed WTN will be held at SRS Swanscombe attached to the original Contract Document.

A copy will also be given to the driver, if the haulier is not SRS/UBH.

A third copy will be retained until the end of the contract and sent, on completion of the contract, as part of the overall contract/invoicing pack to the client/waste producer.

12.4.2. Hazardous Waste Consignment Note

Any hazardous waste generated by the site (maintenance waste, for example) will be disposed of under a Consignment Note generated by the waste disposal contractor.

This will be retained within the Admin Offices on site, along with the collection notes if a term Consignment Note is used to cover multiple up lifts.

As the site receives no hazardous waste materials, UBH/SRS will not require Consignment Notes for incoming wastes.

12.4.3. Operational Recording – Waste Processing

As part of the day to day operational information gathering for the site, the following information will be entered into the site diary:

- Start time for processing plant
- End time for processing plant
- Details of any process interruptions
- Details of any incoming WEEE loads
- Panel count for each operational period
- Contract & WTN number for panel batches processed during operational period
- Estimate of weight of products generated during each operational period (to be confirmed on weighing and despatch)
- Bag numbers for any filled bulk bags removed from plant during operational period
- Sample numbers & bag numbers for any product samples taken during operational period for compliance with End-of-Waste Quality control system
- Details of any products despatched from site with bag numbers where available (aluminium is not bagged)
- Names of operators
- Site Foreman signature

The above information will be retained in the Site Diary and ensures complete traceability from the initial contract, through delivery, processing & final product despatch for each batch of end-of-life solar panels covered by a recycling contract.

A copy of the processing information relevant to each contracted batch will be attached to the original Contract Document along with the WTNs and this will be retained at SRS Swanscombe.

A copy of the processing information relevant to each contracted batch will be retained until the end of the contract and sent, on completion of the contract, as part of the overall contract/invoicing pack to the client/waste producer.

12.4.4. Waste Recycling – Recycling Certificate

If required, a summary of the overall recycling information for each contracted batch of end-of-life panels can be supplied to a client/waste producer at the end of the contract.

This document will contain the following information:

- Client Company Name
- Source of WEEE (site name only)
- Contract Number
- Start & End Date of Recycling/Deconstruction Contract
- Number of Panels Recycled
- Overall weight of Panels Recycled Under Contract (number of panels x individual weight)
- Breakdown of Material Recycling Volumes

The information may be anonymised (removal of the site & contract details) if the client requires the Certificate for PR purposes.

Any information required for PCS/Warranty purposes will be available in the separate end of Contract Pack.

If generated, a copy of the Recycling Certificate will be retained with the relevant Contract Pack at SRS Swanscombe.

An example of a Recycling Certificate is included in the Appendices of the Sampling & Inspection Plan.

12.4.5. Product Sampling & Analysis Procedures

All granulated bulk bagged products will be sampled in line with end-user and the company End of Waste system requirements.

For each sample, a Sample Record & Dispatch Sheet will be completed. This document will contain the following information:

- Date of Sample
- Individual Sample Number
- Description of Product Being Sampled
- Bulk Bag Number for Sampled Product
- Approximate Weight of Sample
- Analysis Required
- Address of Sample Analysis Laboratory
- Identification Number for Laboratory Sample Acceptance Paperwork (copy of Laboratory SAP to be attached to Sample Record & Dispatch Sheet)
- Date of despatch to Laboratory

Results of sample analysis will be attached to the Sample Record & Despatch Sheet and retained at SRS Swanscombe.

The client will receive confirmation of the tonnages of recycled product generated from the end-of-life solar panels as part of the Contract Pack issued on the closure of the disposal contract.

12.4.6. Forecasting Weight of Incoming Waste

The forecasted weight of incoming waste is calculated on a per-contract basis.

The calculation is simple – the panels under a contract will all have a known weight and the number of panels will be known prior to contract commencement.

Total weight of incoming waste under the contract will be calculated by multiplying individual panel weight by the number of panels.

The total weight is then notes on the Contract Document.

Shound there be any variation in the number of panels, this will be noted as a variation to the Contract Document.

12.4.7. Recording Actual Weight of Incoming Waste

For each incoming load, 5 panels will be selected at random and weighed to give an average weight per panel.

This will then be multiplied by the number of panels (counted on inspection) to give an actual weight to be used on the Duty of Cate Waste Transfer Note issued for the load.

Copies of all Waste Transfer Notes pertaining to an individual contract will be retained by SRS Swanscombe, attached to the original Contract Document.

At the end of the contract, the number of panels processed are agreed with the client, the contract is closed and copies of all the Duty of Care WTNs are attached to the completed Contract Pack..

12.4.8. Recording Weight of Outgoing Recycled Products

All outgoing recycled products are weighed.

Bulk bags are weighed individually using the scales on site prior to loading and the weight noted against the bag number on the despatch note.

Aluminium frame sections are exported in skips and these are weighed by the smelter using their weighbridge on delivery of the product and the weight confirmed with UBH/SRS.

Granulated products are sold in bagged form for onwards re-use.

The correlation % of exported End of Waste products to incoming solar panels is calculated on a per Contract basis to ensure accurate figures for each client.

12.4.9. Recording Weight of Outgoing Waste For Recovery

Granulated plastics from the solar panels are the only main product that is sent for thermal recovery instead of onwards processing.

The plastics are sent for thermal recovery as there is a small chance that the material may contain POPS so UBH/SRS will not return any of this material for re-use, so ensuring the POPS are removed from the marketplace completely and destroyed at a suitable Permitted facility.

The granulated plastics are not produced to End of Waste standards.

The granulated plastics are collected in numbered, sealed bulk bags.

Should an end-user require it, the plastics may be sampled to determine purity and calorific value prior to despatch for recovery. The sampling procedure will follow the protocols laid down in the Sampling & Analysis Plan for the site (Appendix A.8).

The despatch of the plastics will be recorded on a Waste Transfer Note, with the numbered bags and total weight being entered on the WTN.

12.4.10. Recording Weight of Outgoing Waste

Waste generated by the site will comprise mostly of maintenance wastes (wipes & spent lubricants) and amenity/office/break room waste.

All of this will be removed from site by a suitably licensed contractor.

WTNs and Consignment Notes will be generated by the contractor, most probably on an annual basis, with each uplift being recorded.

As the weights will be minimal, a charge per uplift will be used and an average weight used for the Duty of Care Paperwork.

Any non-conforming waste solar panels or quarantined solar panels will either be returned to the client or despatched to a suitably Permitted facility for disposal.

The weight of this material will be assessed by multiplying individual panel weight by the number being removed from site. This will be used in any required Duty of Care documents.

All waste removals from site will be recorded in the Site Diary.

13. Maintenance Procedures & Records

The Site follows a program of preventative maintenance and servicing.

This reduces breakdowns, down time and loss-of-service costs appreciably.

13.2. In order to ensure that all equipment is functioning correctly the Site plant and equipment are serviced in line with the manufacturer's servicing schedules, either by the Site operatives (where competent) or the supplier's own maintenance team.

13.3. All servicing is recorded in the service records for the individual item of Plant or machinery.

13.4. Only SRS/UBH certified competent operatives are allowed to use plant and equipment on Site. These operatives follow a rigorous system of daily checks for each piece of equipment used on Site, as set down in the checklist for that machine.

13.5. The maintenance records for the Site are regularly checked and signed off by the Site Manager (or other nominated Technically Competent Manager) who will also be responsible for arranging routine maintenance by the supplier or any external contractor.

13.6. Should a machine break down or an issue develop with an item of Site equipment or Plant then the defect will be recorded on the daily checklist and brought to the attention of the Site Manager by the operative on the day it is reported.

13.7. The maintenance routines for the Solar Panel Recycling Plant are contained within the Plant Manual, available for inspection at the SRS Swanscombe Site.

14. Hazard Identification & Risk AssessmentsEnvironmental Risk Assessment

To ensure operational compliance with the relevant guidance and regulations and minimal environmental impact, SRS/UBH undertakes regular environmental risk assessments for the Site operations.

Environmental risk assessments are undertaken following the 5 steps detailed below.

Environmental risk assessments are reviewed annually as a minimum, with reviews also taking place after any change or operations or equipment, incidents or in the event of complaints being received about the operation of the Site.

14.1.1. Step 1: Identify the Hazards:
Determine the potential sources of harm to the environment, such as uncontrolled releases, excessive waste generation, or noise pollution.

14.1.2. Step 2: Assess Risks:
Evaluate the likelihood and severity of harm that each hazard could cause to the environment, considering factors like receptor exposure, concentration, and duration.

14.1.3. Step 3: Control the Risks:
Implement measures to eliminate or minimize identified risks, such as improving plant or operations, changing how some operations are undertaken, changing management plans, or conducting employee training.

14.1.4. Step 4: Record Your Findings and Implement Them:
Document the assessment findings, control measures, and their implementation.

14.1.5. Step 5: Review Your Risk Assessment:
Periodically review the assessment to ensure it remains effective and adapt to changes in operations or regulations.

14.1.6. Where appropriate, additional stakeholders will be involved in the environmental risk assessment process.

14.1.7. The table below indicates the identified potential environmental risks existing within or due the SRS/UBH operations at Swanscombe:

Risk Score & Severity - These present risks to the environment, the health and safety of employees and those in the local neighbourhood.

Hazard	Likelihood	Risk Severity	Score
Litter, Leaks & Spillage	2	1	2
Odours	2	1	2
Emissions – Dust to Atmosphere	2	1	2
Chemical Storage & Handling	2	1	2
Other Emissions or Particulates Release	2	1	2
Pest Infestations	1	1	1
Noise	1	1	1

Fire	2	2	4

Key
Severity = the danger a significant exposure would cause to the environment and/or health and safety of local neighbourhood (1-3)
Likelihood = potential of an exposure, without controls (1-3)
Risk Score = product of severity x initial likelihood (1-9)

From this table, a number of controls and Management Plans have been put in place.

14.2. Environmental Risk Controls

14.2.1. Litter, Leaks & Spillage
Please refer to the Litter Management Plan (including Leaks & Spills) – Section 20.4 of this EMS)

14.2.2. Emissions (including Dust & Particulates Release)
Please refer to the Emissions & Dust Management Plan - Section 20.2 of this EMS.

14.2.3. Chemical Storage & Handling
Please refer to Section 11 of this EMS – Maintenance Chemical Storage.

14.2.4. Pest Infestations
Due to the nature of the waste received and processed at the Site (with zero food value, litter or odour), the potential for vermin infestation is negligible.

Therefore, no Pests & Vermin Management Plan is deemed necessary in this case.

14.2.5. Noise
As all solar panel recycling operations are undertaken within the building behind closed doors using electric-drive plant, the noise generated by the operations is below ambient when monitored from the site boundary.

Therefore, no Noise Management Plan is deemed necessary in this case.

14.2.6. Fire
Please refer to Section 21 and Appendix 3 of this EMS – Fire Prevention Plan.

14.2.7. These Plans will be reviewed and amended if necessary whenever the relevant environmental risk assessments reviewed.

14.3. Health & Safety Risk Assessment Method

SRS/UBH follows the HSE (Health and Safety Executive) guidance for conducting a risk assessment which follows a five-step process: identifying hazards, deciding who might be harmed and how, evaluating the risks, recording findings and implementing them, and reviewing the assessment.

14.3.1. Step 1: Identify the Hazards:
This involves looking for potential sources of harm in the workplace, such as dangerous substances, equipment, or work processes.

14.3.2. Step 2: Decide Who Might Be Harmed and How:
Identify who is likely to be exposed to the hazards and how they might be harmed (e.g., employees, contractors, visitors).

14.3.3. Step 3: Evaluate the Risks:
Assess the likelihood and severity of harm from each hazard and decide what precautions are needed.

14.3.4. Step 4: Record Your Findings and Implement Them:
Document the findings of the risk assessment, including the identified hazards, those at risk, the assessed risks, and the control measures implemented.

14.3.5. Step 5: Review Your Risk Assessment:
Regularly review the assessment and update it as needed, particularly when new hazards are identified or when circumstances change.

14.3.6. To ensure compliance with this system, the following actions are undertaken as part of the Risk Assessment procedure.

- Consult with Employees:
  Involve employees in the risk assessment process, as they often have valuable insights into the workplace and how it could be made safer.
- Prioritize Risks:
  Focus on the most significant risks, as these are the ones that pose the greatest potential for harm.
- Eliminate or Control Hazards:
  Take steps to eliminate the hazards or, if that's not possible, implement control measures to reduce the risks.
- Document Everything:
  Keep records of the risk assessment process and any actions taken to control risks.

14.3.7. A full Risk Assessment Register for the Swanscombe Site Operations and Site as a whole may be found in Appendix A.2.

14.4. Health & Safety Risk Controls

14.4.1. The Health & Safety file for the site contains all the relevant H&S documentation required for the safe and controlled operation of the site.

This file contains all the information regarding the control of risks associated with the operation of the Solar Panel Recycling plant and associated services.

15. Health & Safety Procedures This operation is overseen by a Technically Competent Manager with access to external H&S advise as and when necessary.

15.2. Health & Safety procedures are in place for all aspects of operations.
The following document Registers covering the operation of the Solar Panel Recycling Plant are maintained by SRS/UBH:

- Operating Techniques Register
- Risk Assessment Register
- Operational Document Register
- Swanscombe Fire Prevention Plan

Copies of these registers may all be found in the Appendices attached.
The full sets of documents are stored in the Swanscombe Admin Office building.

15.3. Appropriate task specific training is provided to all SRS/UBH personnel, and this provision is documented.

15.4. As part of the Organisation's health and safety procedures all staff, contractors and site visitors are provided with training on emergency situations such as fire, evacuation procedures etc.

15.5. All inductions for visitors and contractors are carried out before the personnel are allowed on site.

Inductions are documented as part of the visitor's book maintained on site.

15.6. Where an employee's, contractor's or site visitor's duties involve activities that may result in an environmental emergency situation such as spills or contamination they are provided with training on SRS/UBH's planned response.

This will normally be based 'in-house' but may include external training as appropriate.

16. Skills & Training To ensure The policies, objectives and targets used by SRS/UBH are implemented and achieved it is important that any person performing tasks on behalf of the company are trained for their role.

16.2. Therefore, a training matrix is maintained to identify skills shortages.

This is available for viewing at the SRS Swanscombe Admin Office.

16.3. SRS/UBH management (Operations Director) have overall responsibility for the implementation of this EMS and must provide the necessary technical input. The supervisory team are responsible for identifying individual employee's environmental training needs and for the initial training on operational, health & safety and environmental issues for current and new staff.

16.4. All new employees are to be provided with training as part of the SRS/UBH induction process.

16.5. All relevant employees are to be provided with information on where the EMS documents are held within the company and its sites and how to access them. Updates are communicated directly to the relevant staff by senior management and recorded.

16.6. The management team shall ensure employees, contractors or other non-employed personnel whose work can cause any significant impact are sufficiently competent in performing their duties.

16.7. Induction and training materials and requirements for any contractors and other relevant persons or visitors will be reviewed annually as a minimum and materials updated as necessary.

16.8. All inductions and training shall be recorded as delivered by SRS/UBH management and received by the relevant persons as a matter of course and confirmed within the document registers.

17. Communication & ImplementationCommunication

17.1.1. Internal Communication

This section outlines the method of communication throughout SRS/UBH on all environmental issues. This will include any new environmental impacts, objectives and targets.

Internal Communications are any form of communication required to be passed to staff or received from staff in connection with environmental issues. This can be in the form of training of employees, passing on other information or submission of nonconformity reports, toolbox talks etc. from employees.

Site Management are responsible for ensuring that the requirements of the EMS are communicated to all members of staff with particular emphasis on where the employee has a direct influence on the company's environmental impacts.

The company's objectives and targets shall be communicated to all employees who have an ability to influence their achievement.

Any changes to existing environmental legislation or new environmental legislation that effect SRS/UBH shall be communicated to relevant employees.

Communication within SRS/UBH will normally by means of verbal instructions and discussion on day-to-day activities involving environmental issues.

Notices, letters and email will be used where a level of formal communication is required with an employee.

17.1.2. External Communication

External communications are any form of communication received from or generated to parties outside SRS/UBH.

Incoming communications can be in the form of email, telephone call, visit, etc.

Any concerns raised by external stakeholders will be investigated and the outcome advised to the person, Organisation or Authority raising the concern.

Where there is found to be a need to implement any corrective and preventative actions these will be planned and implemented, and this EMS amended if required.

Where direct communication is required with any external bodies (to inform the Environment Agency of a non-compliance, for example), this will be undertaken by the SRS/UBH CEO or TCM for the Swanscombe Site.

These external communications will be recorded.

17.2. Implementation of the EMS

17.2.1. Responsibilities

The SRS/UBH CEO has overall responsibility for the implementation of the EMS.

Sections of this responsibility may be delegated as required, though this must be recorded.

The SRS/UBH CEO and Swanscombe TCM are responsible for ensuring that compliance with the EMS & Environmental Permit is maintained.
Additional monitoring may be scheduled where problems or deficiencies have been found.

Corrective action for any non-conformances shall be agreed with the responsible personnel and the details recorded. The report shall be circulated for information and/or action to appropriate personnel.

The check will assess and collate the information gathered and review the conclusions with the person responsible for the process and where practicable any other personnel directly concerned.

17.2.2. Reporting and Closing Out Non-Conformances

The SRS/UBH management team (particularly the CEO and Swanscombe TCM) are responsible for the implementation and monitoring of any corrective actions found necessary.

If monitoring reveals any procedure or method of working is not meeting its intended objectives or could be improved or that further information is required, it will be discussed with the relevant personnel and action points identified.

17.2.3. Management Review

A management review of the Swanscombe Site & Plant & its operation should be conducted at least once each year.

Inputs to the Management Review shall include:

- Environmental Communication/Non-conformance Records
- Internal Monitoring Feedback
- Feedback from External (client, regulatory, etc) Audit Reports
- Environmental Impacts Record
- Register of Legislation
- Any Objective & Target records

The results of the review are to be recorded in the form of minutes identifying any agreed actions along with the person allocated responsibility for carrying out the actions and target dates for completion where appropriate.

UBH/SRS shall allocate the necessary personnel and resources for these corrective actions.

18. Accidents, Incidents & Complaints The default response to any accidents or incidents involving the SRS Swanscombe Site will be for the Plant to be shut down in a controlled manner whilst the issue is identified and rectified.

18.2. SRS Swanscombe has an Accident and Incident Recording and Investigation Procedure (Appendix A.7) which will be followed in the event of an Accident, Incident or Complaint.

Information gathered under this procedure will be recorded as part of the Site Diary.

18.3. Any damage caused will be rectified as soon as possible and the Plant will not be restarted until such damage is completely rectified and signed off by the Swanscombe TCM and SRS/UBH CEO in writing.

18.4. Causes of any incidents or accidents will be investigated and appropriate measures emplaced to ensure the issue does not re-occur. This will also be recorded in the Swanscombe Site Diary, and this EMS will be updated if required.

18.5. Any complaints regarding the operation of the Plant will be recorded in the Site Diary, investigated and remediated as appropriate.

18.6. The Environment Agency will be informed of any accidents, incidents or complaints pertaining to the operation of the Plant and the outcome of any remediation works and/or investigations.

18.7. The Site Diary will be made available to any Local Authority or Environment Agency Officer on demand.

19. Minimisation & Disposal of Residues The site minimises residues through the almost complete recycling of the incoming solar panels sent for deconstruction.

19.2. The novel process undertaken ensures that almost 100% by weight of the incoming solar panels are recycled and returned to marketplace as End of Waste products or sent for thermal recovery, in the case of the granulated plastics separated from the panels.

19.3. The site operates the most efficient plant currently available, so reducing resources use as far as possible.

19.4. Waste produced internally is all recycled where possible/practical.

19.5. All residues/wastes are disposed of in a responsible manner, in compliance with the company's Environmental & Health & Safety Policies and current Regulations.

19.6. Where possible, the company will recycle or recover as much material as possible from any waste generated.

20. Environmental Management Plans IntroductionManagement Plans not required due to nature of operations

20.1.1. Odour Management Plan

An Odour Management Plan is not required at SRS Swanscombe as:

- No waste accepted at the site is odorous.
- Waste is inspected prior to acceptance and any non-conforming waste is either reloaded and sent back to the client site or is segregated on site in cleared labelled, lidded, locked quarantine containers for collection and disposal at a suitably Permitted facility.
- No process on site will generate anything likely to attract pests and vermin.
- All canteen/amenity waste is stored on site in sealed containers and is regularly removed from site under a collection & disposal contract with a suitably licensed operator.
- No nearby sites or occupants undertake any actions or store any materials that would attract pests and vermin.
- The site housekeeping operates to a very high standard..

However, should a complaint be received, odour be detected on site or incident reported to the site, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

If, as a result of the investigation, it is felt that a full Odour Management Plan is required by the site, one will be written and attached to this EMS.

20.1.2. Pests & Vermin Management Plan

A Pests & Vermin Management Plan is not required at SRS Swanscombe as:

- No waste accepted at the site has any food value, odour or visual triggers to attract pests & vermin.
- No process on site will generate anything likely to attract pests and vermin.
- All canteen/amenity waste is stored on site in sealed containers and is regularly removed from site under a collection & disposal contract with a suitably licensed operator.
- No nearby sites or occupants undertake any actions or store any materials that would attract pests and vermin.
- The site housekeeping operates to a very high standard..

However, should a complaint be received, pest or vermin be seen on site or incident reported to the site, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.
This may well include the letting of a control contract with a reputable pest control company.

If, as a result of the investigation, it is felt that a full Pests & Vermin Management Plan is required by the site, one will be written and attached to this EMS.

20.1.3. Litter Management Plan

A Litter Management Plan is not required at SRS Swanscombe as:

- The operations that will take place on site do not generate litter as no incoming waste is packaged or includes waste packaging so there is minimal litter-generating materials on site.
- All deconstruction processing takes place behind closed doors within the main building. This means no waste is subject to wind disturbance as would occur if processed outside.
- The site apron and storage yards will be inspected daily for any litter blown onto the site from neighbouring premises and these will be litter picked as required.

- The site is provided with a number of litter bins for litter associated with operations, break times or visiting driver's discarded food packaging.
- The site operates a blanket no smoking policy.
- All waste office, maintenance & packaging waste produced by the site is collected and stored in locked, covered bins within the yard to await collection by a suitably licensed third party for disposal at a suitably Permitted facility.

However, should a litter complaint be received or incident reported at the site, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

If, as a result of the investigation, it is felt that a full Litter Management Plan is required by the site, one will be written and attached to this EMS.

20.1.4. Noise Management Plan

A Noise Management Plan is not required at SRS Swanscombe as:

- The operations that will take place on site are all relatively quiet.
- All deconstruction processing takes place behind closed doors within the main building. This means process noise levels outside the building and at the Site Permit boundary are at or below ambient.
- The exhausts from the dust extraction equipment are relatively small and exit the building at the rear, discharging vertically so causing minimal noise.
- The only mobile plant operated on site are 2 small forklift trucks and a floor sweeper.
- All vehicles visiting the site or operating on the site will be silenced to manufacturers specifications, so further reducing any potential noise impacts.
- All process plant is electric drive and relatively small.

E.A. Pre-Application advice has confirmed that the site operations do not need a Noise Management Plan. See Appendix 17 for feedback from the Pre-Application Service.

However, should a noise complaint be received or incident reported at the site, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

If, as a result of the investigation, it is felt that a full Noise Management Plan is required by the site, one will be written and attached to this EMS.

20.2. Dust & Emissions Management Plan

20.2.1. The only emission from the deconstruction and recycling process to be carried out on site will be the exhausts from the 5 dust extraction & filtration units located within the main process building.

20.2.2. These units are operated and managed as detailed in Sections 23.2 & 23.3 of this EMS.

20.2.3. As this will be a monitored emission and there are a number of businesses, SSSI areas and other stakeholders close to the site, the potential impacts of any dust emissions from the site are being modelled as part of the application process for this bespoke permit.

20.2.4. The full Dust & Emissions Management Plan has been written using the results & data gained form the modelling process and is included in Appendix A.13 attached to this EMS.

20.3. Leaks & Spills Management Plan

20.3.1. No liquid or liquid-containing waste is processed on site, only minimal maintenance fluids are used and the process building has a full impermeable floor so there is a very low risk of any spillage leaching, and a low risk of spillage reaching surface water drainage systems, due to the very low volume of liquids present.
Therefore, the site does not require a full Leaks & Spills Management Plan.

20.3.2. All the solar panels delivered to the site is dry and will arrive palletised from client sites, which will then be offloaded into a sealed building.

20.3.3. The incoming waste has a zero water content, so spills of liquid waste are possible.

Should any solar panels be found to be contaminated with liquid waste in reception/inspection, they will be quarantined pending disposal off site.

Wet solar panels, fresh from client sites, are allowed to air dry within the process building prior to deconstruction.

20.3.4. The following actions will also be taken:

- All oil and maintenance fluids (new or used) will be stored within bunded containment – be that a specific bunded unit or the bunded, sealed floor area of the main process plant building.
- There are no process units that use a liquid medium for any purpose.
- All (internal or external) bunded storage on site will be locked.
- Absorbent materials will be available to treat any spillage of maintenance fluids.
- Measures will be taken immediately to stop any leakage and prevent it from reaching any surface water drainage system.
- Record of any instance of spillage will be recorded.
- As the process plant operates dry, the process building requires no drainage system as there are minimal liquids to spill that may be cleared easily manually without recourse to discharge via drains.
- The amenities on site all discharge to an external sewer system which in turn discharges to a Thames Water STW.
- Any leaks and spills, once cleared up, will be stored in a covered, locked and labelled waste container along with any used spill kit materials and will be disposed of at a suitably Permitted facility as soon as is practical.
- Leaks & spills will all be contained using the absorbent materials, absorbent socks and other spill kit equipment held within the process building's maintenance stores.
- Should a leak or spill occur, or a complaint of such be received by UBH/SRS, this will be recorded in the Site Diary.
- Any such issue will be reported using the incident/complaint recording procedure and will be investigated under that procedure.
- Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

If, as a result of the investigation, it is felt that a Noise Management Plan is required by the site, one will be written and attached to this EMS.

20.4. Traffic Management Plan

Due to the small size of the site and the relatively low number of waste deliveries, each of which is tightly controlled by the site staff, a full Traffic Management Plan is not deemed necessary here.

20.4.1. On Site Traffic

The site vehicles comprise a pair of forklift trucks and a man-operated floor sweeper.

Only trained site operatives will drive these vehicles.

All such operatives will either hold a recognised, externally issued operator's 'ticket' for such vehicles or will be trained, assessed and licensed by the Site Manager to operate the company vehicle on this site only.

All waste deliveries are pre-booked, and drivers will report to the Reception Area and sign in prior to making their way to the assigned unloading area.

The site areas are small so, when on site, vehicles will obey a walking speed limit. All vehicle movements will be controlled by site staff.

No vehicle reversing will take place on site unless controlled by a banksman.

Unloading will only occur in the designated unloading areas.

No personnel will approach a working forklift or moving vehicle until the driver acknowledges their presence and route.

As all the vehicle areas on site are clean, site will not require a dedicated wheel or vehicle wash.

20.4.2. Off Site Vehicles

The site is located within a very active industrial area with a short link road to the main road and motorway network.

Therefore, the minimal delivery, despatch and service vehicle movements for the site will pose little or no impact locally and no specified haul routes are required.

20.4.3. Should a traffic incident occur on site or be reported to site management, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

20.4.4. Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

20.4.5. If, as a result of the investigation, it is felt that a full Traffic Management Plan is required by the site, one will be written and attached to this EMS.

20.5. Drainage & Waste Water Management Plan

Due to the very small size of the site, the dry nature of the waste and process, the whole process being within a building and the whole site already discharging to sewer or soakaway, a full Drainage and Waste Water Management Plan is not deemed necessary here.

A plan showing the current drainage infrastructure is attached in the Drawings Section of this EMS.

20.5.1. Roof Runoff Water

All runoff from the building roof will be sent to sewer as the ground is not suitable for soakaways and there is no suitable surface water course to run the clean run off to.

20.5.2. Site Frontage

The site frontage drains to gulleys provided with interceptors which discharge to the main sewer under Manor Road.

This is sufficient as only road vehicles use this area, and no incoming waste is stored here.

This area will be maintained in a clean condition, so no wheel or vehicle washing facilities will be required.

In the event of a fire, spillage or other incident, the site has a number of cover plates for the gulleys to stop fire water entering the sewer if required by the FRS.

As the frontage has a slight fall to the building, this area provides its own bunding.

20.5.3. Process Building Internal Drainage

The process building has no internal drainage as none is required - the process is dry, so no liquids are generated.

The process is dry, so any waste spills may be cleared using the site floor sweeper and/or manually brushed up.

Also, as the process is dry and the plant is all electric drive, the plant will not be washed down with water.

Any wet spills tend to be minor if they occur as the only liquids held on site comprise lubricants (spent and fresh) and a small stock of fuel for the forklifts.

All fluids stored within the building will be stored in or on secondary containment bunds, so reducing the impact of any spills or leaks.

A spill kit is also kept within the maintenance stores to ensure the site is equipped to deal with any such spills comprehensively.

The building will be bunded where necessary to ensure a containment depth of 150mm across the building to ensure the containment of any fire water and make it available for re-use. The building will have an effective storage volume of c.40m^3.

Due to the nature of the materials being processed, the products and the process plant, there is relatively little within the building to sustain a fire so minimal amounts of fire water should be generated and all such will be disposed of via suction tanker to a suitably permitted facility.

Sewage from the amenity/office/toilets on site all drain to the north and into the main sewer under Manor Road.

20.5.4. Unloading and Hardstanding Areas

The unloading area west of the building has a full, impermeable concrete surface, provided with gulleys and interceptors feeding to sewer.

This is sufficient control for this area as all vehicles using the area will be road worthy and no waste will be stored there unless containerised/covered.

Given the extremely low flammability of the solar panels and/or the silicon/glass panels processed on site, this is deemed sufficient control for this area.

Drainage from the hardstanding southern area is allowed to drain to ground through the surface of the yard.

No gulleys or interceptors are provided in this area as no leachable materials or vehicles are stored here and all waste (which does not contain any leachable materials) is stored in sealed shipping containers.

All storage within this area will comprise palletised silicon/glass panels stored in containers. Given the extremely low flammability and zero leachability of the materials, this is deemed sufficient control for this area.

In the event of a fire, spillage or other incident, the site has a number of cover plates for the gulleys to stop fire water entering the sewer if required by the FRS.

As the frontage has a slight fall to the building, this area provides its own bunding.

All mobile plant maintenance will take place either off site or within the building.

However, should an issue with the site drainage become apparent or incident reported at the site, this will be recorded in the Site Diary and the Accidents, Incidents & Complaints Reporting Procedure will be followed.

Findings from any investigation and any remediation actions or preventative measures will be detailed in the Site Diary.

If, as a result of the investigation, it is felt that a full Drainage & Wastewater Management Plan is required by the site, one will be written and attached to this EMS.

21. Fire Prevention Plan The Fire Prevention Plan (FPP) in attached in Appendix A.3 details the following:

- Infrastructure built into the site to prevent, extinguish or reduce the impact of a potential fire.
- Fire prevention systems incorporated into the site & plant
- Closing down the Plant and associated operations in the event of a fire
- Actions to be taken by the site operators to reduce the risk of fire and the impact, should one occur
- Storage arrangements for incoming solar panels received at site as WEEE.
- Storage arrangements for maintenance materials & fluids on site.
- Storage arrangements for low levels of maintenance and other waste stored on site, in various locations, but all in sealed, locked containers.
- Storage arrangements for any flammable materials required to be kept on site.
- Storage arrangements for all recycled products awaiting despatch.
- Storage and management arrangements for any plastics (to all be treated as if containing POPs)
- Storage arrangements for any interim recycled/recovered materials stored on site.
- Information to be made available to the Fire & Rescue Service on entering the site.
- Provisions on site to manage and re-use fire water if required.
- Provision to dispose of fire water and associated waste materials.

21.2. Due to the relatively low flammability of the waste being recycled on site, its storage in discreet sealed locations around the site, the overall low-flammability of the installation and the tight monitoring and control imposed on the operation, the plant constitutes a minimal fire risk to the overall site or the wider locality.

21.3. Upon the Environmental Permit being approved, the FPP will be updated to cover any changes required as part of the Plant Permitting.

21.4. A full and final version of the FPP will be attached to this EMS in Appendix A.3.

21.5. The drawings for the FPP are attached within the FPP pdf file.

21.6. On site, the FPP and associated drawings will be stored in an external box on the wall of the Site Building to ensure rapid deployment to the incoming Fire & Rescue Service.

22. Competent Persons The site is currently operating a deconstruction process of reduced scope whilst under commissioning and the site Permit is approved.

22.2. Michele Foulds will be carrying out the role of Site Manager/TCM for the site. Her WAMITAB Certificates are included in Appendix A.10.

22.3. To further ensure safe and efficient operation of the Plant, SRS/UBH undertakes regular training of all site operatives to ensure compliance with all relevant H&S, environmental and operational requirements for the site.

This will ensure that the company has a team of operators familiar with the workings of the Solar Panel Recycling Plant.

No operator will be allowed to run any item of plant that they have not been trained to use, said training being certified by SRS/UBH and/or the equipment supplier/installer.

22.4. Maintenance on the Plant will be undertaken by the plant supplier/installer or suitably qualified SRS/UBH operative required.

22.5. SRS/UBH also have recourse to external consultant advise if required.

22.6. In all, the Swanscombe Site has a number of levels of competence covering the operation, maintenance & compliance of the Site & Plant.

23. Description – Solar Panel Recycling PlantDetailed Description of the Solar Panel Recycling Plant

23.1.1. The recycling plant consists of a number of items that have been supplied, installed and commissioned at the Swanscombe site to process incoming solar panels, reduce recovered materials to a coarse powder/granular form, separate and purify those materials and bag them for onwards use as End-of-Waste products replacing virgin resources.

23.1.2. Drawings showing the layout, location and elevations of the recycling Plant are attached at the end of this document.

23.1.3. The full description of the plant and its associated operation included within the Plant Manual.
As this details a lot of proprietary information and the design of the Solar Panel Recycling Plant that has been developed over a number of years by SRS working in collaboration with various suppliers, it will not be attached to this document.

If viewing is requested by E.A. Officers, the Manual will be made available at the SRS Swanscombe site for viewing without reproduction.

23.1.4. However, the only emission from the plant is via the dust extraction and filtration systems, of which there are five separate units serving the process plant.

As these are of particular interest to regulators, these will be covered in detail in the section below.

23.2. Dust Extraction, Filtration and Exhaust Systems

23.2.1. In compliance with the WEEE Appropriate Measures for Permitted Facilities – 7. Emissions monitoring and Limits Appropriate Measures Guidance, the site will comply with the following emissions limits and monitoring requirements:

Channelled emissions to air from all mechanical treatment of WEEE
Dust
Monitoring standard – EN 13284-1.
Frequency – every 6 months.
Emission limit – 5mg/m³ (where it is inappropriate to fit a fabric filter due to the potential effects of deflagration on the filter, the limit is 10mg/m³).

23.2.2. SRS recognise the potential for the recycling plant to generate a dust impact/nuisance and so 5 state of the art dust extraction & bag filters have been commissioned on site to cover the operations of the deconstruction/recycling plant.

As the site is running this extraction & filtration system, the Emission limit of 5mg/m^3 in exhaust air will be used as the upper limit for the site dust systems' exhausts.

23.2.3. As part of the Bespoke Permit application, the dust emissions for the site are being modelled and the report is attached as Appendix 4.

This report is modelling the dust emissions at the maximum allowed level of 5mg/m^3.

This report will confirm that the impact of the dust emissions to local receptors (human, ecological and environmental) will be insignificant.

In the unlikely event that this modelling shows that the maximum ELV Dust poses a potentially significant impact to local receptors, SRS will improve/amend the dust extraction and filtration system to reduce the potential impact to insignificant levels.

23.2.4. The dust extraction system exhausts will be monitored every 6 months in line with the WEEE Appropriate Measures Guidance requirements.

This will be undertaken by an independent, MCERTS accredited monitoring laboratory and the results will be made available to the E.A. and stored on site for a minimum of 5 years.

23.2.5. Dust extraction points are placed at all points on the deconstruction/recycling/sorting line where dust may be generated.

This is to ensure that the dust is controlled for environmental, personnel health & safety & housekeeping benefits.

The large (5) number of bag filter systems continuously extracting dust laden air from the process line also ensure that the building operates at a slight negative pressure, so stopping fugitive dust emissions from any gaps in the building's structure.

The operations are always carried out with the building's doors closed to assist in the retention of the negative pressure and also stop any noise from the process line being heard outside the building envelope.

23.2.6. All the extraction ducting is formed using 300mm diameter round "spiral" ductwork, formed in galvanised steel.

Inspection/cleaning hatches are regularly spaced along the ductwork, ensuring that any run over 3m has an inspection/cleaning point.

The round ducting, coupled with the inspection/cleaning points, ensures that the ductwork does not start to collect residual dust inside, so adding to the dust load on the bag filters, restricting the airflow within the ducting and/or increasing the weight of the ducting through residual dust build up to the point that the duct supports or the duct itself fails.

23.2.7. The duct work feeds the unfiltered exhaust to one of 5 separate bag filter houses located throughout the plant building.

These bag filter houses are state of the art units, designed and supplied alongside the deconstruction/recycling plant by the plant supplier.

Although the units are Chinese sourced, all consumables and motors are standard units so there is no issue with waiting for replacements to be sent over from China and causing unplanned downtime for the plant.

Some consumables are held on site to allow rapid repair in the event of a failure (filter bags, seals, maintenance consumables, etc).

23.2.8. The bag filter houses are of a standard design, with the filters each having their own fan system moving air through the filter and out to the exhaust points.

The filters are supplied with pressure monitoring in front and behind the filter bags.

Should this monitoring system detect a fall in pressure through the filter bags, the filter will automatically clean itself as a fall in pressure will indicate the bags are becoming choked with dust.

Should the pressure sensors show no pressure drop across the bags, the filter will sound an alarm and safely shut down. No pressure difference across the bags will indicate that a bag has failed and so requires immediate replacement.

If this occurs, the process line will be shut down unit the repair has been made to ensure no dust contamination or exhaust occurs.

23.2.9. The spent/replaced dust filter bags will be treated as maintenance waste, be placed in a sealed container and disposed of to a suitably Permitted facility as soon as is practicable. Due to the nature of the dust collected by the dust filters (mostly glass dust), these bags will not need to be classed as hazardous waste.

23.2.10. The exhaust ducting from the filters to the external building vents are also constructed using 300mm diameter round “spiral” ductwork, formed in galvanised steel to ensure commonality of spares and ease maintenance.

Again, the exhaust ducting is provided with cleaning/inspection hatches as placed in the extraction ductwork.

23.2.11. The building has 3 exhaust points. All are located on the southern wall of the main building, exhausting over the storage yard behind the main process building.

The exhaust vents comprise 3 vertical stacks that run up the southern (rear) wall of the building and terminate some 7m above the ground (approximate building ridge height).

Where 2 filter units exhaust together, the vent stack is 450mm ID and, for the single unit exhaust, the vent measures 300mm ID.

There are monitoring points set on the vents to allow sampling to take place at 6monthly intervals, in accordance with the Permit Conditions.

Access to these monitoring points will be by MEWP (the site has one) as permanent access platforms in this area attract unwanted attention.
All the exhausts exit the building horizontally.

23.3. Emissions Monitoring & Modelling

23.3.1. The emissions will be monitored every 6 months, in line with WEEE guidance for this Site.

23.3.2. Currently, the modelling is being undertaken using maximum ELVs as a worst-case scenario.

Any amendments required by the modelling report to reduce any impacts seen as not insignificant will be undertaken as required prior to the whole site becoming fully operational. This EMS will be amended to reflect any such changes.

Currently, the dust emissions report has determined:
Predicted concentrations of PM10 and PM2.5 were below the relevant EQSs at all sensitive receptors within the vicinity of the site. Impacts on pollutant concentrations were not predicted to be significant in accordance with the relevant methodology.

23.4. Prevention of Operation in Certain Circumstances

23.4.1. The individual sections of the process line each have their own control and monitoring systems.

23.4.2. The starting sequence runs form the end of the line to the beginning to ensure no backlog of part-process material should start up be delayed on part of the line.

23.4.3. Startup of each section of the process line must be done manually.

This ensures each section is inspected prior to start up and monitored on start up to ensure smooth running before solar panels are processed.

23.4.4. Individual dust extraction systems start up just prior to that section of the process line covered by the extraction and bag filter unit.

This ensures no operations requiring dust extraction begin operation without filter cover in place and running before processing starts.

23.4.5. All the dust extraction and filtration units are started manually alongside the process plant. Again, this is to ensure inspection of the unit prior to an on startup.

Should a filtration unit fail to start, the affected section of the process line will not be started until the dust extraction and filter is operating properly.

23.4.6. In the event of a fault appearing within a unit on the process line, that unit can be closed down quickly through the use of emergency stop buttons or the control panel.

As the weight of the material being processed is relatively light, clearing and restarting the unit once the fault has been cleared is a simple matter.

23.4.7. Should a fault develop in one of the dust extraction and filtration units, which will trigger a shutdown of the affected section of the process line until the dust unit has been fixed and is operating again.

23.4.8. If, during the manual startup of the plant, a fault or other issue is detected, the plant will not be operated until the issue has been remedied and the plant may be operated in a safe and efficient manor with no risk or impacts to the environment or personnel.

23.4.9. Any non-standard operating conditions will be recorded and investigated as required.

23.4.10. All the records of any non-standard operating issues and the subsequent investigation and rectification will be retained in the Site Diary and maintenance records for the plant and will be made available to E.A. Officers on demand.

23.4.11. If there are external issues that are or could impact the operation of the plant (extreme weather, flooding power cut, etc), then the plant will be shut down or, in the event it is awaiting start up, the line will not be operated until these conditions have passed or been rectified.

24. Compliance with WEEE Recycling Guidance

This section details how the operations at SRS Swanscombe will ensure compliance with current Best Practise Guidelines for WEEE Refurbishment, Recycling or Recovery where that is not clear in the EMS or attached documentation.

The EMS and associated documents have been written to ensure compliance with the relevant parts of the WEEE Appropriate Measures Guidance – particular reference should be made to the Sampling & Inspection plan included in the Appendices to the EMS and used as a stand-alone document in its own right.

It should be remembered that no solar panels received at Swanscombe will be reused in either component or complete form.

The nature of the units dictate that they cannot be repaired but must be reduced to granulated form to allow the recycling of the materials used in there manufacture, therefore the large sections of the AM Guidance covering the reuse (in part or as components) of WEEE is not applicable for this site.

24.2. Guidance from the Pre-Application Service is included below:

> At the current time, solar panels are considered WEEE – and they are mentioned in the WEEE appropriate measures which sets out a few requirements that you should follow. You will find this under Photovoltaic panels (section 4.2 paragraph 17 and 18, and section 5.11 paragraphs 1 to 3). The silicon based panels will contain lead solder that needs addressing and the other types will include hazardous metals base compounds in their manufacture.
>
> In terms of waste coding, because of the Hazardous substances that may be present in some types of photovoltaic panels – including lead, cadmium telluride, gallium arsenide, PFAS (short for perfluoroalkyl and polyfluoroalkyl substances) amongst other things so we cannot assume they are non-hazardous. There are 2 main types of photovoltaic panels – silicon and thin-layer, and it is the thin layer panels that contain the cadmium telluride and /or gallium arsenide which needs removing. As an operator you will have carry out waste classification assessment to determine the hazardous / non-hazardous nature of the panels that you receive: Waste classification technical guidance - GOV.UK (www.gov.uk) .

24.3. Text of Appropriate Measures Guidance specific to the handling and recycling of solar panels and the responses is listed below:

> ***4.2 Additional storage requirements for specific categories of WEEE***
> *The following appropriate measures apply to specific WEEE categories in addition to those in the section 4.1.*
> *Photovoltaic panels*
> *17. Photovoltaic panels must be off-loaded, handled and stored to prevent breakage.*
>
> *18. Disconnected photovoltaic panels are still capable of generating electricity which can pose a risk of electrocution or fire. You must store them glass side down and take other precautions to minimise these risks.*
>
> *5.11 Treatment of photovoltaic panels*
> *1. Photovoltaic panels may contain hazardous substances such as lead (in solder), cadmium telluride and compounds of selenium (in the semiconductor layer of non-silicon based photovoltaic panels).*
>
> *You must establish, maintain and use an effective process for identifying non-silicon based photovoltaic panels.*
>
> *2. You must remove the lead from all photovoltaic panels, and you must remove the hazardous semi-conductor layer from non-silicon based photovoltaic panels.*
>
> *Process monitoring for the treatment of photovoltaic panels.*
> *3. Where you shred non-silicon based photovoltaic panels, you must sample and test the recycled glass fraction at least once every 6 months for cadmium with a limit value of 10mg/kg cadmium.*

24.4. AMG Note 4.2.17:
The panels arrive palletised to prevent breakage and are unloaded by forklift and inspected as they are unloaded.

In the event of any glass breakage in transit, the affected panel will be covered to prevent glass spilling on the yard.

Any such spills will be cleared up immediately.

24.5. AMG Note 4.2.18:
Solar panel arrive glass-side up as they are stored this way to prevent breakage and water pooling in the back of the panel where the frame is boded to the panel glass.
Once unloaded, the top panel in any pallet will be flipped glass-side down and the pallet covered.

The pallets will then be stored either within the building or sealed shipping containers on site to prevent sunlight reaching the panel.

Deframed panels, without the junction boxes, comprise a flat ‘carpet’ of glass and the silicon backing. These will be palletised, covered and stored within sealed shipping containers in the southern storage yard to prevent rainwater ingress or sunlight reaching the panel.

24.6. AMG Note 5.11.1:
All reclaimed metals are produced in granulated form to ensure no respirable metal dust is produced.

Any dust produced in the deconstruction is extracted and filtered by the on-site dust management systems.

Lead, in solder form, does not leach or degrade in the timeframe that the panels are in storage.

24.7. AMG Note 5.11.1:
No non-silicon based solar panels are received on site so the heavier elements (cadmium telluride and compounds of selenium, for example) are not received on site.

24.8. AMG Note 5.11.1:
Panels are received from large, single contract sources.

As part of the contract generation, the panels are assessed on site to ensure only silicon-based panels are received.

Full details of the panels, including original manufacturer’s specification sheets, are included in the contract documents.

Please reference the Sampling & Inspection Plan for details of how the contract pack for each incoming batch of panels is determined.

For panels not coming from large, single source contracts, the same process is followed to ensure no non-silicon-based (thin film) panels are received at site for recycling.

24.9. AMG Note 5.11.2:
All metals are removed from the panels in granular form (including lead).

These metals are despatched as products for separation and onwards-processing at suitable end-users equipped to accurately separate the various metal factions from the mixed metals product produced at Swanscombe.

Once the plant is fully operational, full End-of-Waste Procedures will be produced for each material produced by the deconstruction process, using the quality criteria supplied by each enduser , so ensuring each product recovered at Swanscombe can be delivered at a quality sufficient to be returned to the marketplace in replacement of virgin resources.

24.10. AMG Note 5.11.2:

As an addendum to the above, all plastics will be recovered from the solar panels in granular form and this will be sent for thermal treatment to allow energy recovery.

No plastics will be released back into the marketplace.

This will ensure, in the event of POPS being present in the plastic, this material is destroyed in line with current regulatory requirements.

24.11. AMG Note 5.11.3:

Non-silicon based solar panels will not be received on site for recycling.

However, as part of the quality control procedures, all granulated glass produced will be sampled and tested at least once every 6 months for cadmium with a limit value of 10mg/kg cadmium as a matter of course.

This will be detailed in the End-of-Waste Procedure for the glass product.

Appendices

A.1 RAMS Register

A.2 ISO Operational Document Register & ISO Certificate

A.3 SRS Swanscombe Fire Prevention Plan

A.4 2025 Dust Emissions Modelling Assessment – SRS Swanscombe

A.5 SRS Swanscombe Exemption

A.6 SRS Swanscombe Solar Panel Recycling Site Environmental Permit

A.7 Accidents, Incidents & Complaints Reporting Procedure & Form

A.8 Sampling & Inspection Plan

A.9 Process Flow Chart – SRS Swanscombe Overall

A.10 Technically Competent Manager Details – Michele Foulds

A.11 Dust and Emissions Management Plan – SRS Swanscombe

A.12 SRS Swanscombe Environmental Risk Assessment

A.13 Conservation Screening Report – Environment Agency Pre-Application Information & MAGIC Map Information – SRS Swanscombe

A.14 UBH Group Environmental Policy

A.15 Health and Safety Policy UBH and SRS Jan 25

A.16 Swanscombe Site Condition Report

A.17 Pre-Application Service Feedback – Noise Assessment Letter

A.18 H1 Screening Tool

A.1 RAMS Register

The following RAMS cover the operations at the SRS Swanscombe site.

RAMS fulfil the same role as Operating Techniques documents.

The use of RAMS only (combining procedural instructions, H&S guidance & environmental impact mitigation guidance) avoids having 2 procedural documents for each operation.

Maintenance-specific duties for the various items of plant are detailed within the plant maintenance manuals.

The actual Operating Document and RAMS Registers are separate to the EMS to ease review and induction recording.

Comprehensive RAMS Document Register

Document Type	Operation Context	Title
COSHH	Solar Panel Recycling	COSHH – Solar Panel Recycling
COSHH	Telehandler Operations	COSHH – Telehandler Operations
Emergency Arrangements	Solar Panel Recycling	Emergency Arrangements – Solar Panel Recycling
Emergency Arrangements	Telehandler Operations	Emergency Arrangements – Telehandler Operations
Lift Plan	Solar Panel Recycling	Lift Plan – Solar Panel Recycling
Lift Plan	Telehandler Operations	Lift Plan – Telehandler Operations
Loading SOP	Solar Panels	Loading SOP – Solar Panels
Loading SOP	Telehandler	Loading SOP – Telehandler
RAMS	Solar Panel Recycling	RAMS – Solar Panel Recycling
RAMS	Telehandler Operations	RAMS – Telehandler Operations
RAMS	Belt Conveyor (Solar Panel Plant)	Solar Panel Plant Belt Conveyor RAMS
RAMS	Defractometer (Solar Panel Plant)	Solar Panel Plant Defractometer RAMS
RAMS	Electrostatic Separator (Solar Panel Plant)	Solar Panel Plant Electrostatic Separator RAMS
RAMS	Shredders (Solar Panel Plant)	Solar Panel Plant Shredders RAMS
SOP	Solar Panel Stacking	SOP – Solar Panel Stacking
SOP	Telehandler Use	SOP – Telehandler Use
SOP	Solar Panel Plant	Safety Operating Procedures for Solar Panel ...
SOP	Solar Panel Glass Removal	Solar Panel Glass Removal ...
Toolbox Talk	Solar Panel Recycling	Toolbox Talk – Solar Panel Recycling
Toolbox Talk	Telehandler Operations	Toolbox Talk – Telehandler Operations
Manual	Solar Panel Plant	Solar Panel Plant Manual

A.2 Operational ISO Document Register

This register covers operating documents generated by the company's quality, environmental & Health & safety management systems.

The document categories listed below may not be specific to the Swanscombe site.

Copies of the documents listed here are available for viewing by E.A. Officers at the Swanscombe site.

📁 ISO Documentation Categories

🛡️ Compliance & Safety

- **COSHH**
- **Fire Prevention Plan**
- **Risk Assessments**
- **Permits and Carriers Licenses**

📄 Core ISO & Operational Docs

- **ISO Docs**
- **SSS Risk Assessment**
- **SSS SOP Operation Manual**
- **SSS Quotes**

📑 Policies & Procedures

- **Policies and Procedures** *(new category—ideal for site rules, escalation protocols, and internal governance)*

📜 Legal & Insurance

- **Insurance Info**
- **Issuer Data**

👥 HR & Training

- **HR Docs**
- **Training**

🔧 Maintenance & Site Operations

- **Maintenance**

Citation ISO Certification

Certificate of Registration

This document certifies that the Management System of

UBH Group Limited

Wish Wood Bayham Road Bells Yew Green Kent TN3 9AT

have been assessed and approved by Citation ISO Certification Limited to the following management systems, standards and guidelines:-

ISO 9001:2015 / ISO 14001:2015

The scope of the Management System applies to the following:-

The provision of waste management brokerage and consultancy services, including waste-to-energy machinery and technology

Original approval: 09/05/2023

Current certificate: 09/05/2024

Certificate expiry: 08/05/2027

Certificate number: 422932023

On behalf of Citation ISO Certification Limited.

Citation ISO Certification
REGISTERED

ASCB

Muspole Court, Muspole Street, Norwich, Norfolk, NR3 1DJ

This certificate remains valid while while the holder maintains their management system in accordance with the published Standard. To check the validity and status of this certificate please visit www.IRQAO.com or email ISOcertificates@citation.co.uk This Certificate is the property of Citation ISO Certification Limited and must be returned in the event of cancellation.

A.3 SRS Swanscombe Fire Prevention Plan

Attached as File UBHSWAN25-01-FPP-V3.pdf & associated plans

A.4 2025 Dust Emissions Modelling Assessment – SRS Swanscombe

Attached as 9940r1 - Air Quality Assessment - UBH Group (SRS), Swanscombe.pdf

A.5 SRS Swanscombe Exemption

Registration EXP/GP3241YY – UBH Group Limited

Registration number	EXP/GP3241YY
Organisation name	UBH Group Limited
Is a farm?	no

Site

Site address	Unit B3 Manor Way Business Park, Manor Way, Swanscombe, DA10 0PP
Site postcode	DA10 0PP
Site grid reference	TQ6068274991

Exemptions

T11 ▶ Repairing or refurbishing waste electrical and electronic equipment (WEEE)

Registration date	30/10/2023
Expiry date	31/10/2026

A.6 SRS Swanscombe Solar Panel Recycling Site Environmental Permit

Attached as File TBA.pdf

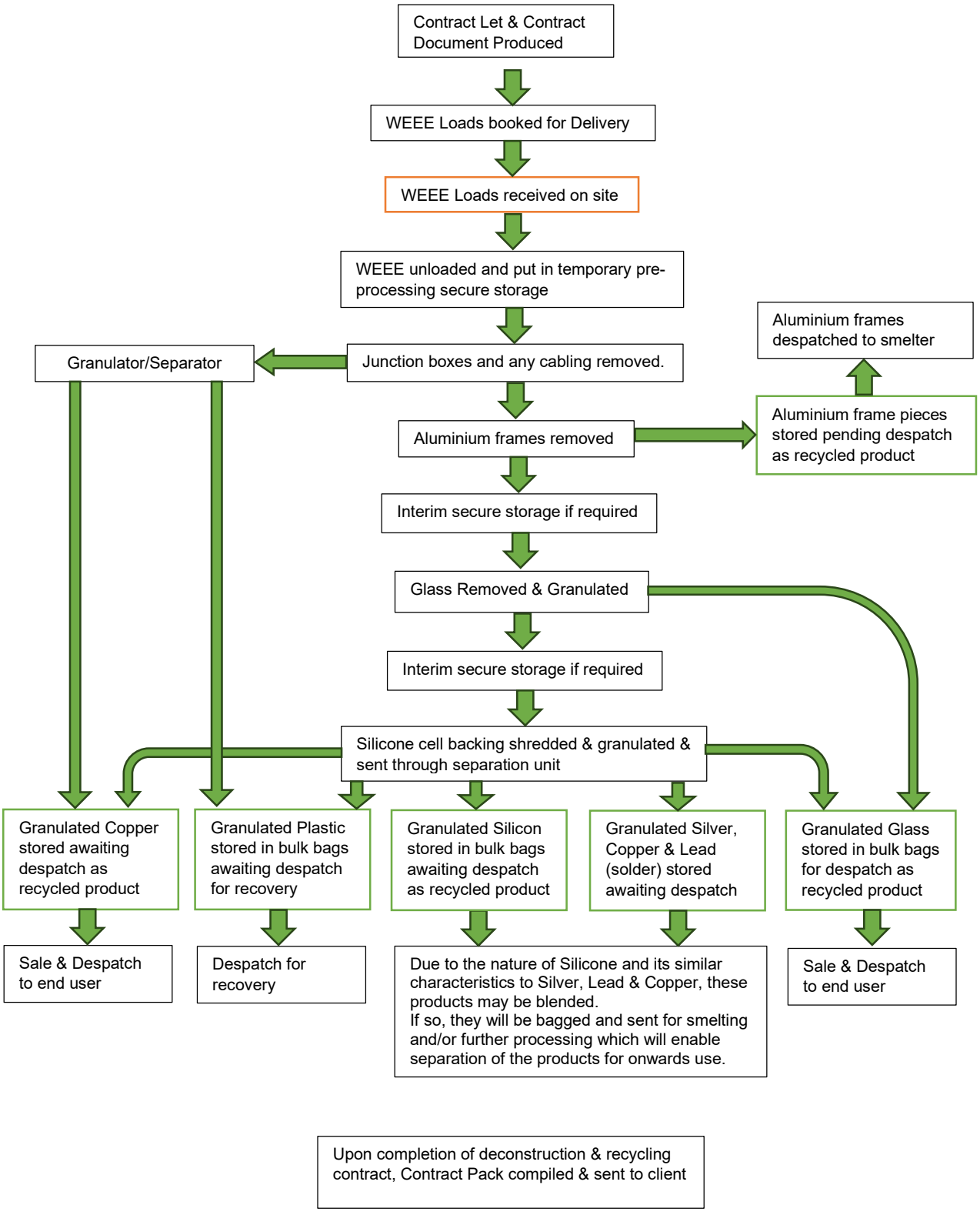
A.7 Accidents, Incidents & Complaints Reporting Procedure & Form

Attached as File UBH Near Miss Incident Form.pdf

A.8 SRS Swanscombe Sampling & Inspection Plan

Attached as File UBHSWAN25-01-S&IP-V1.pdf

A.9 Process Flow Chart – SRS Swanscombe Overall



A.10 Technically Competent Manager Details – Michele Foulds

wamitab

Peterbridge House
3 The Lakes
Northampton
NN4 7HE

Tel: 01604 231950
Fax: 01604 232457

Email: info.admin@wamitab.org.uk
www.wamitab.org.uk

Our Ref: LS/LEB/101/08/
ADL Environmental Ltd Training & Assessment Centre/23703/4MTSNH6

28 January 2013

Mrs Michele Foulds
Waste 4 Fuel
Cornwall Drive
Orpington
BR5 3JB

Dear Mrs Foulds

4/6 UNIT CREDIT CERTIFICATE AND OPERATORS COMPETENCE CERTIFICATE

Please find enclosed the unit credit certificate and Operators Competence Certificate for the 4MTSNH6 award.

The Operators Competence Certificate (OCC) is awarded as part of the Operator Competence Scheme jointly developed by WAMITAB and the Chartered Institution of Wastes Management (CIWM); this provides evidence to meet the Operator Competence requirements of the Environmental Permitting (EP) Regulations, which came into force on 6 April 2008.

May I take this opportunity of congratulating you on gaining the units required for this award. I hope these units will provide the basis for the on-going development of your waste management skills in the industry, and would remind you of the need to maintain your competence over time. For further information contact WAMITAB or visit the 'Continuing Competence' section of our website.

Yours sincerely

Chris James
Chief Executive Officer

Enc: Unit Certificate ☑
OCC Certificate ☑

A company limited by guarantee in England. Registered No. 02332283
Registered Office: Peterbridge House, 3 The Lakes, Northampton, NN4 7HE

wamitab
wamitab facilities

WAMITAB

Waste Management Industry Training and Advisory Board

The Chartered Institution of Wastes Management

Certificate No. OCC63580

Operator Competence Certificate

Qualification Title:

Non hazardous transfer/with or without treatment (not otherwise specified) (4MTSNH6)

This Certificate is awarded to

Michele Foulds

Awarded: 28/01/2013

Authorised

WAMITAB Chief Executive Officer

CIWM Chief Executive Officer

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

WAMITAB

Waste Management Industry
Training and Advisory Board

Credit certificate
This certificate determines credit awarded to:
Michele Foulds

Units gained:

		Credit Value	Credit Level
Y6015875	Monitor procedures to safely control work operations	4	3
M6009712	Manage the environmental impact of work activities	5	4
R6021609	Manage the reception of non hazardous waste	7	4
A6021670	Manage the movement, sorting and storage of waste	7	3
Y6021644	Control site operations for the transfer of waste	6	4
F6021508	Manage the transfer of outputs and disposal of residues from non hazardous waste transfer and recovery operations	10	4

Awarded: 28/01/2013

Serial No: 23703/HSS3/1

Authorised

Ray Burberry
Qualifications Manager, WAMITAB

Ofqual

The qualifications regulators logos on this certificate indicate that the qualification is accredited only for England, Wales and Northern Ireland.

CIWM | CIWM (WAMITAB) Qualifications

IMPORTANT NOTICE – PLEASE RETAIN FOR YOUR RECORDS

Score Report

CIWM (WAMITAB) Continuing Competence Test
Name: Michele Foulds
Date of test: 28-Nov-2025
Registration ID: 520709731

Continuing Competency Test Results

Activity	Number of Correct Answers	Score	Overall Grade
Transfer Non-Hazardous Waste	21 out of 30	70%	Pass
Landfill - Non - Hazardous Waste	15 out of 30	50%	Fail

A breakdown of your results is shown below.

Generic Knowledge Test (GKT) Marks

Section Title	Number of Correct Answers
Generic Health & Safety	3 out of 6
Generic Legislation	5 out of 6
Generic Environmental Protection	4 out of 6

Activity Specific Test (AST) Marks

Section Title	Number of Correct Answers
Transfer Non-Hazardous Waste	9 out of 12
Landfill - Non - Hazardous Waste	3 out of 12

As of 30th November 2025, Michele Foulds has completed the above CPC examination and has retained the Transfer Non-Hazardous Waste.

Michele has been in contact with EWS (of Unit 1B Little Caring Farm, Caring Lane, Leeds, Maidstone, Kent ME17 1TH) and has established that she requires 2 units to bring her WAMITAB up to MROC2 as 4 of the units of her existing WAMITAB are compatible and valid.

Michele has contracted EWS to provide WAMITAB Assesor services to assist in gaining these 2 units and will complete the units by mid February 2026.

As SRS have an E.A. Local Officer site visit during the first week in December 2025, in order to discuss the possibility of the site running under LEP until the Permit is issued, Michele will detail her progress to these Officers and the Officers will be asked to confirm the discussion with the Waste Permitting Service direct.

Should it be felt that the site requires interim TCM cover whilst Michele completes the 2 units, an external consultant TCM will be contracted in to cover the site.

This section of the EMS will be updated as soon as Michele completes her 2 units and gains the MROC2 WAMITAB.

A.11 Dust and Emissions Management Plan – SRS Swanscombe

Attached as File UBHSWAN25-02-DEMP-V1.pdf

A.12 SRS Swanscombe Environmental Risk Assessment

Attached as File UBHSWAN25-02-ERA-V2.pdf

A.13 Conservation Screening Report – Environment Agency Pre-Application Information & MAGIC Map Information – SRS Swanscombe

Nature and Heritage Conservation

Screening Report: Bespoke Waste

Reference	EPR/VP3224LL/P001
NGR	TQ 60703 75039
Buffer (m)	40
Date report produced	27/08/2025
Number of maps enclosed	1

This nature and heritage conservation report

The nature and heritage conservation sites, protected species and habitats, and other features identified in the table below **must be considered in your application**.

In the further information column, there are links which give more information about the site or feature type and indicate where you are able to self-serve to get the most accurate site boundaries or feature locations.

Most designated site boundaries are available on Magic map. Using Magic map allows you to zoom in and see the site boundary or feature location in detail, Magic map also allows you to measure the distance from these sites and features to your proposed boundary. Help videos are available on Magic map to guide you through.

Where information is not publicly available, or is only available to those with GIS access, we have provided a map at the end of this report.

Sites and Features within screening distance	Screening distance (m)	Further Information
Sites of Special Scientific Interest (SSSI)	1000	Natural England and Magic map
Swanscombe Peninsula		

Protected Habitats within screening distance	Screening distance (m)	Further Information
Coastal and Floodplain Grazing Marsh (see map below)	up to 50m	Natural England

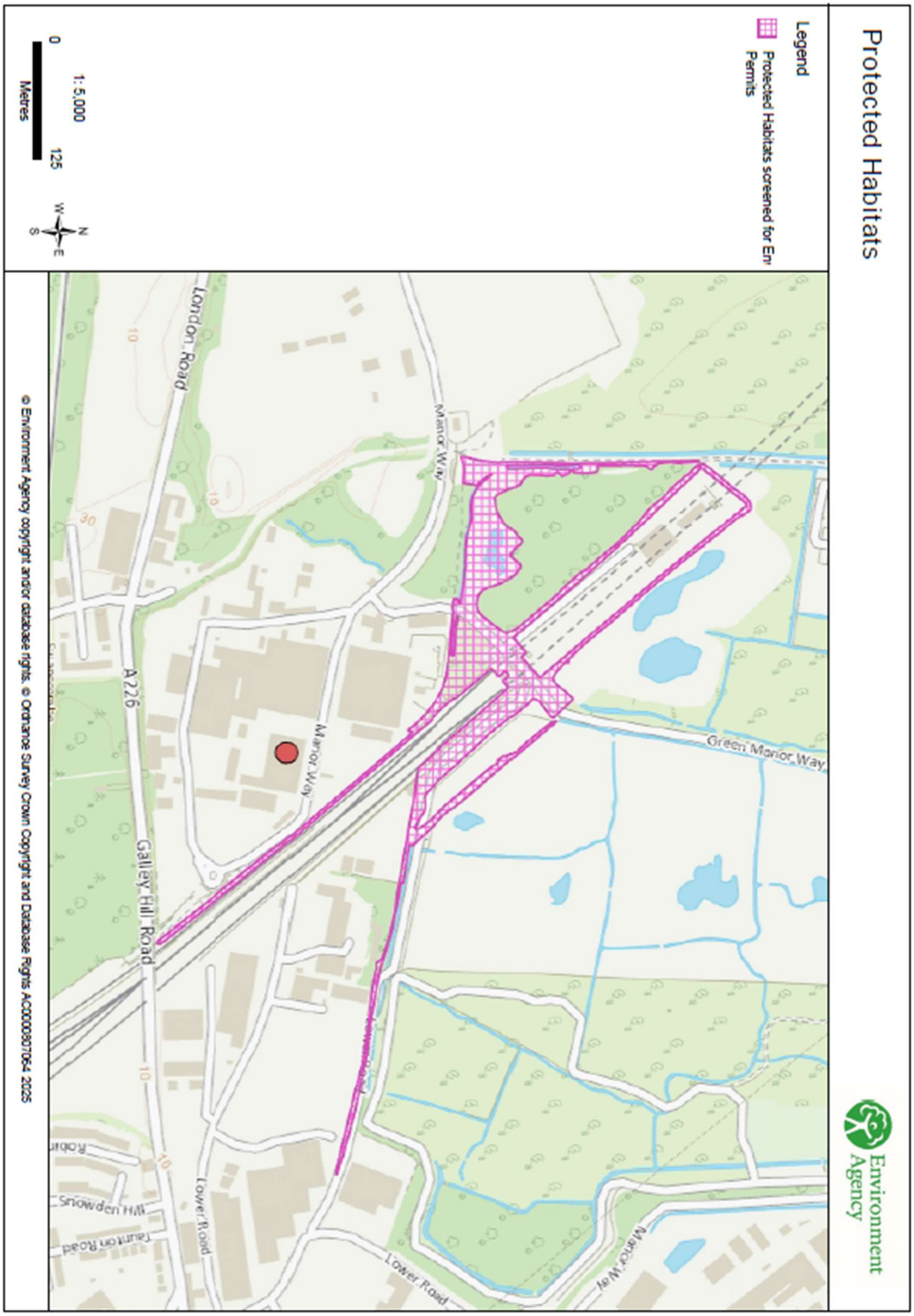
Where protected species are present, a licence may be required from Natural England to handle the species or undertake the proposed works.

The following nature and heritage conservation sites, protected species and habitats, and other features have been checked for, where they are relevant for the permit type requested, but have not been found within screening distance of your site unless included in the list above.

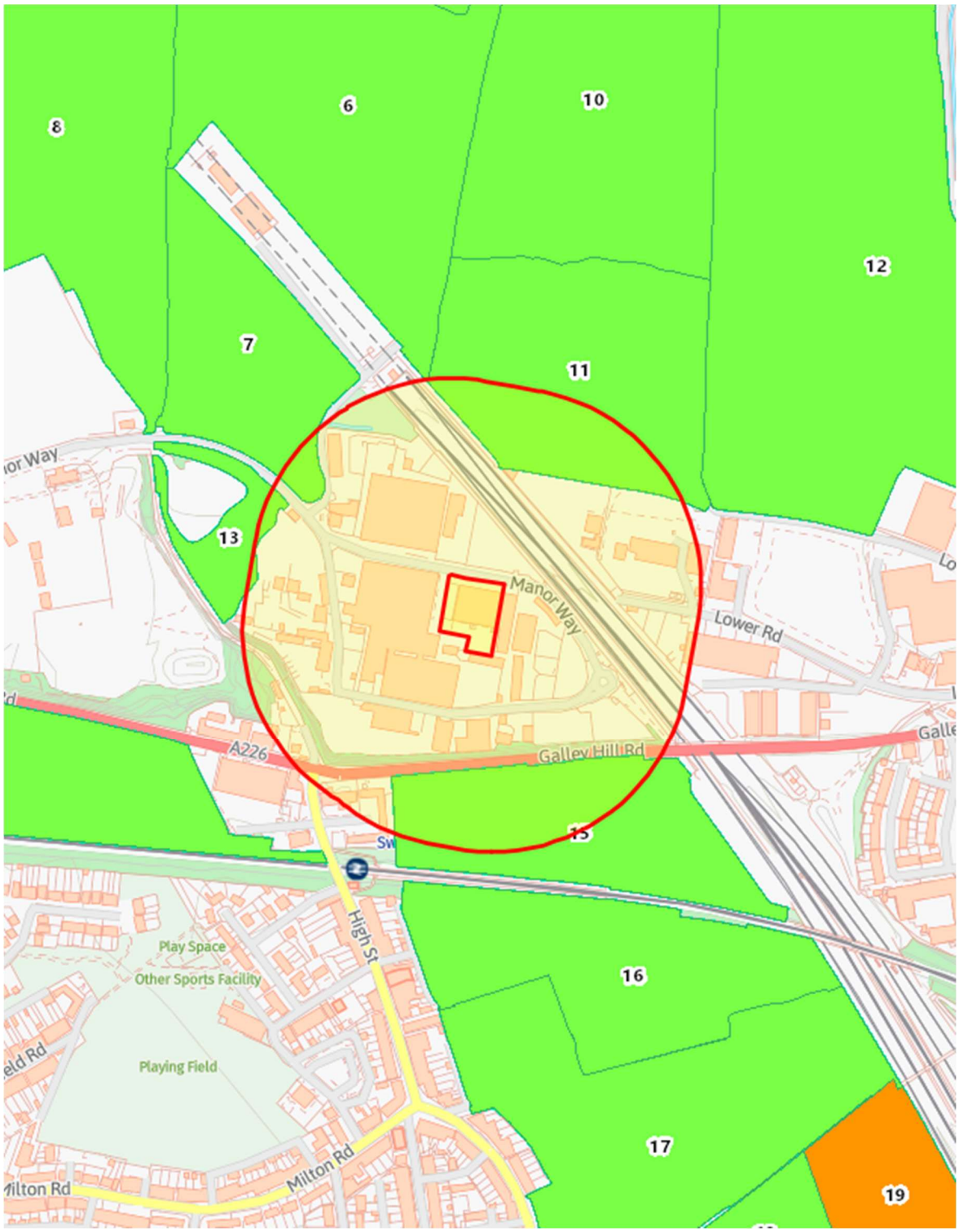
Special Areas of Conservation (cSAC or SAC), Special Protection Area (pSPA or SPA), Marine Conservation Zone (MCZ), Ramsar, Sites of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Local Nature Reserve (LNR), Local Wildlife Sites (LWS), Ancient Woodland, relevant species and habitats.

Please note we have screened this application for features for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

The nature and heritage screening we have conducted as part of this report is subject to change as it is based on data we hold at the time it is generated. We cannot guarantee there will be no changes to our screening data between the date of this report and the submission of the permit application, which could result in the return of an application or requesting further information

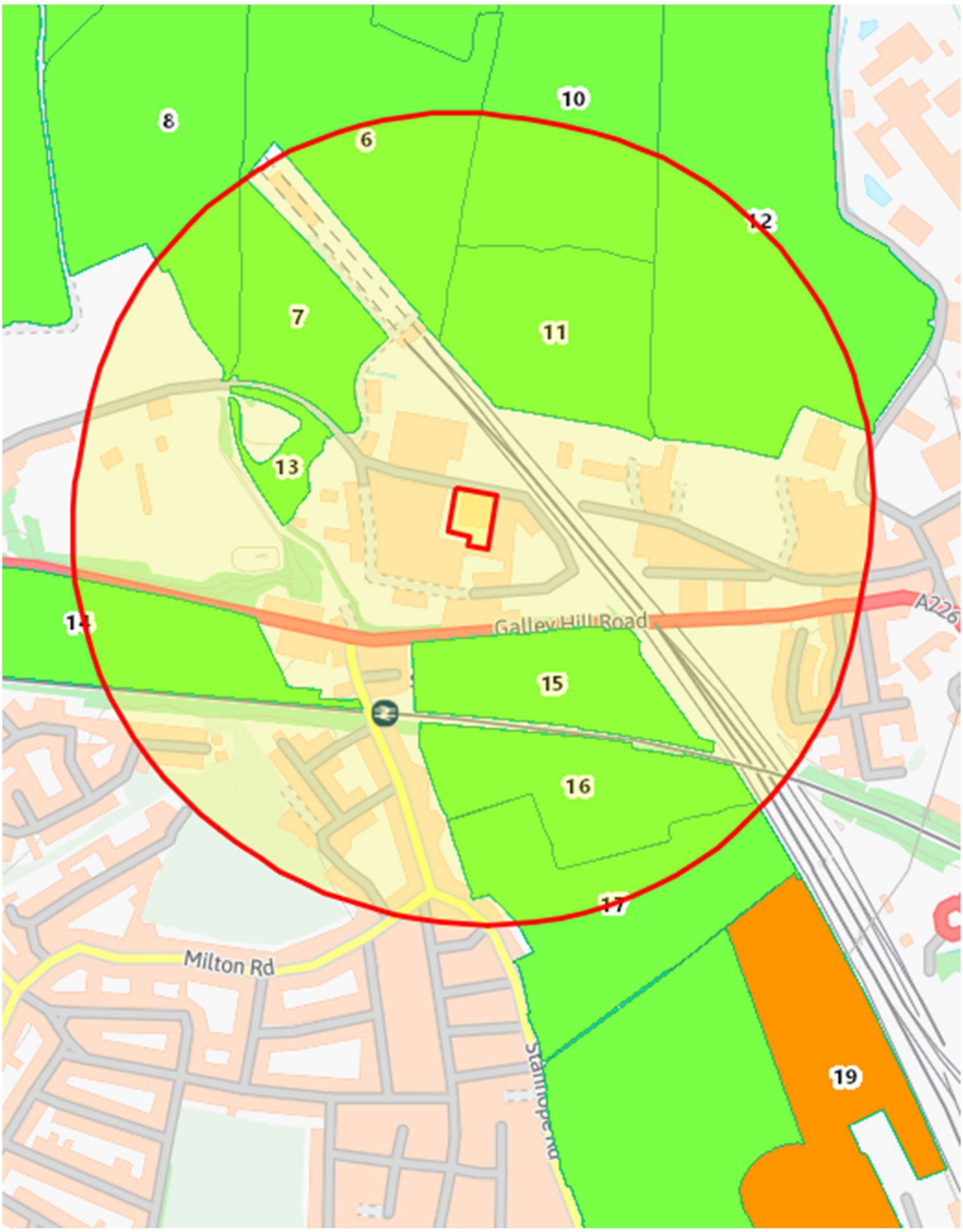

Protected Habitats
Environment Agency
Legend
Protected Habitats screened for Em
Permits
0
Metres
1: 5,000
125
London Road
Manor Way
A226
Galley Hill Road
Green Manor Way
Lower Road
Snowden Hill
Manor Way
© Environment Agency copyright and/or database rights. © Ordnance Survey Crown Copyright and Database Rights AC0000807064 2025

MAGIC.gov.uk Mapping Information – Statutory Designations – 200m Radius.



Swanscombe Peninsula SSSI – Areas 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18 & 19

MAGIC.gov.uk Mapping Information – Statutory Designations – 500m Radius.



Swanscombe Peninsula SSSI – Areas 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18 & 19

A.14 UBH Group Environmental Policy

Attached as File UBH Group Environmental Policy June 25.pdf

A.15 Health & Safety Policy UBH & SRS – Jan 25

Attached as File Health and Safety Policy UBH and SRS Jan 25.pdf

A.16 Swanscombe Site Condition Report

Attached as UBHSWAN25-02-SCR-V1.pdf

A.17 Pre-Application Service Feedback

Environment Agency

Mike Thompson
On behalf of UBH Group Limited
T/A Solar Recycling Solutions

Date: 01/10/2025

Dear Mike Thompson

Pre application advice – Enhanced service – Noise Impact Assessment

Pre-application reference: EPR/VP3224LL/P001
Operator: UBH Group Limited
Facility: Unit B3, Manor Way Business Park, Manor Way, Swanscombe, Kent. DA10 0PP

Thank you for your pre application enquiry on 01/07/2025.

This enhanced advice on Noise Impact Assessment is in addition to basic advice including generic letter, habitats screening, likely application fee and information on EWC previously provided on emails dated 11th, 27th and 28th August, 19th and 24th September 2025.

To apply for a Bespoke application you will need to complete forms Part A, B2, B4 and F1.

I am pleased to provide you with your enhanced pre-application advice. This advice is based on the information provided on your pre application advice form and conversations/emails recorded on the following dates:

- Emails on 8thAugust and 12th September
- Telephone conversations including 1st August, 24th and 29th September.
- Management Plan (EMS) on 12th September

What this enhanced pre application advice covers

As part of this service, we have provided you with the following information.

Based on the following information we consider the operator does not need to submit a Noise Impact Assessment with the application:

- Internal operations (storage, handling and processing) with some external storage.
- No operations at night
- 85,000 Tonnes per annum throughput
- Closest residential area is to southwest.

After you apply

The information that you need to submit with your application is explained in the application form and its guidance. The Environment Agency will check that you have submitted this information and the correct application charges. This is to ensure we have enough information to start to determine your permit application.

We will contact you if information is missing and can feasibly be provided within 10 working days. If we consider information cannot be provided within this time frame we will return your application with a list of what is missing.

We'll retain 20% of the correct application charge to cover our costs in reviewing your application and requesting information. This maximum amount we'll retain is capped at £1,613. This is explained in the environmental permitting charges guidance.

We will not charge this if we return an application after having done very little work – for example, because it contained obvious errors or omissions.

Once an application is validated and duly made it is ready to be allocated for determination. Determination is when we do our technical checks. We may need to ask you for further information or additional documents during determination and it is important you send anything requested as quickly as possible.

The time it takes us to allocate an application depends on a number of factors, including the complexity of the specific application and the availability of a member of our team with the right skills to assess it.

The amount of time taken to determine your application will vary. It will be impacted by factors such as:

- The quality of the application
- The complexity of the application
- Whether an application is of high public interest
- Whether the application includes novel technologies or techniques
- Whether the determination requires input from others, both internal and external to the Environment Agency
- Whether modelling and/or monitoring and assessment is required, for example Air Quality modelling and assessment or water discharge or groundwater activity specific substances assessment.

The Permitting Officer determining your application will be able to keep you updated with the progress of your application.

What happens next?

If you submit an environmental permit application then please quote this pre-application reference number: **EPR/VP3224LL/P001**

customer service line 03706 506 506 floodline 03459 88 11 88

incident hotline 0800 80 70 60

If the advice above details using the online digital application form, your application can be submitted using this method. If not, please send your completed application documents via email to: psc@environment-agency.gov.uk

Please email applications where possible. If email is not possible you can submit by post to:

Environment Agency, Permitting Support, Quadrant 2, 99 Parkway Avenue, Sheffield, S9 4WF

Scope of this advice

We have only provided the specific advice you requested based on the information provided. We cannot provide advice on all aspects of your application, so it is important you read all available online guidance and the application forms to ensure anything not covered within this advice is considered as part of your application.

It is important to remember:

- this is advice, we are not agreeing anything at this stage
- we have provided this advice based on the limited information we have about your proposals at this time
- we have only provided the advice you specifically requested
- we may need to request additional information when we have a full application

Disclaimer

The advice given is based on the information you have provided, and does not constitute a formal response or decision of the Environment Agency with regard to future permit applications. Any views or opinions expressed are without prejudice to the Environment Agency's formal consideration of any application. Please note that any application is subject to duly making and then full technical checks during determination, and additional information may be required based on your detailed submission and site specific requirements and the advice given is to address the specific pre-application request.

This advice covers waste only.

Other permissions from the Environment Agency and/or other bodies may be required for associated or other activities.

Enhanced pre application cost estimate

An invoice will be sent separately. This will include a link to pay online. You can also pay your application charges online but this is a different link so please ensure you are using the correct one when you apply.

This pre-application request is now closed.

customer service line 03706 506 506 floodline 03459 88 11 88
incident hotline 0800 80 70 60

We consider this pre application request is now closed however if you have any questions regarding this letter please contact PreApplicationService@environment-agency.gov.uk.

If you require additional enhanced pre-application advice please complete our online form.

User research request - opportunity to take part in the development of the EA's new online service

The Environment Agency is developing a new online service for anyone who:

- applies for environmental permissions
- manages existing permissions

When we use the term 'permissions', we also mean licences, permits, and registrations.

We're looking for people who:

- would like to apply for permissions using the new service
- have experience with environmental permission applications
- are interested in giving feedback on new designs and features

This could include applying for a new permission or managing aspects of them.

If you're interested in taking part in user research email applypermissions@environment-agency.gov.uk

You can sign up to use the new service and give feedback.

You can use the service without taking part in research. For full details, access our environmental permits privacy notice.

Yours sincerely

Sue Irons

Waste Permitting Officer

Permitting Team
Environment Agency
susan.irons@environment-agency.gov.uk
Telephone: 07867 328061/ 02030252898

A.18 H1 Screening Tool

H1 SCREENING TOOL – COMPLETED SUMMARY

Site: UBH Ltd – Swanscombe Solar Panel Recycling Facility
Location: Unit B3, Manor Way Business Park, Swanscombe DA10 0PP
Document source: ERiskA V2, EMS V2C, Management Plans & Dust Modelling Report

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1. Installation Activities (Permitted Activities)

Activity Type	Description
R4	Recycling/reclamation of metals & metal compounds
R5	Recycling/reclamation of other inorganic materials
R13	Storage of waste prior to recovery
Additional description	Automated deconstruction of silicon/glass PV panels; manual removal of junction boxes; extraction systems; materials recovered as glass, aluminium, silicon; POP-containing plastics removed for off-site thermal treatment

Hazardous thin-film cadmium telluride or gallium arsenide PV panels are **not accepted**.

---

2. Emissions Inventory (Potential Emissions)

Emission Type	Potential Source	Present?	Comment
Dust	Panel deconstruction	**Yes**	Controlled by HEPA extraction and stack filtration (<5 mg/m³)
Combustion gases	Forklift exhaust	**Minimal**	Short-duration movements only (mainly electric forklifts)
Process effluent	None	**No**	No liquid waste generated
Runoff / contaminated water	External storage/yard	**No credible pathway**	Surfaces sealed; no leachable waste stored
Groundwater contamination	Fuel/maintenance oils	**Very low**	Bunded containers; no interaction with groundwater
Noise	Mechanical processing	**Yes – low level**	All indoors; limited hours; electric equipment
Odour	None	**No**	No odorous materials handled

---

3. Receptors & Pathways

Receptor	Distance	Pathway	Sensitivity
Nearest residential property	~150 m SW	Air (dust/noise)	Medium
Adjacent industrial neighbours	Adjacent	Air	Low
Surface water feature (ditch)	~150 m	Runoff	Medium (but no direct runoff from site)
Groundwater (secondary aquifer)	Beneath site	None	Medium
Swanscombe Peninsula SSSI	Within 200 m N/W	Airborne dust	Low–Medium
Workers / visitors	On-site	Direct exposure	Medium

4. Screening of Environmental Risks (H1 Step 1–2)

Below is the completed risk screening table equivalent to H1 methodology.

4.1 AIR EMISSIONS

Source	Pollutant	Receptor	Risk Before Controls	Key Controls	H1 Screening Outcome
Dust from panel deconstruction	Inert particulates (glass/silicon)	Residents, SSSI (Swanscombe Peninsula)	Low	HEPA extraction; filtration <5 mg/m³; full enclosure	**Screened out – not significant risk**
Forklift exhaust	NO_x/CO_2	Workers, residents	Low	Electric FLTs preferred; limited movements	**Screened out**
Noise	Mechanical equipment	Residents, SSSI	Low	Indoor operations; restricted hours	**Screened out**

4.2 WATER EMISSIONS / RUNOFF

Source	Pollutant	Pathway	Risk Before Controls	Controls	Outcome
Spill of maintenance fluids	Oils/diesel	Surface → groundwater	Very low	Bunded storage; spill kits; impervious surfacing	**Screened out**
Rainfall on external waste	None – all waste enclosed	No pathway	None	Sealed containers; no process effluent	**Screened out**

4.3 GROUNDWATER & SOIL

Hazard	Potential Pathway	Baseline Risk	Controls	Outcome
Fuel spill	Surface infiltration	Very low	Bunding; sealed concrete; small volumes	**Screened out**
Leachate from waste	None – waste inert & enclosed	Zero	Sealed floors; sealed containers	**Screened out**

4.4 ODOUR

Hazard	Present?	Outcome
Odorous emissions	None	**No plausible source–pathway–receptor linkage**

4.5 ACCIDENTAL RELEASES

Accident Scenario	Likelihood	Impact	Controls	Outcome
Major dust release	Low	Low	Process shutdown on failure; LEV monitoring	Screened out
Fire	Low	Medium	Fire alarms; extinguishers; staff training	Screened out
Spill of oil/diesel	Very low	Low	Spill kits; bunding; sealed surface	Screened out

---

5. Summary of Risk Evaluation (H1 Step 3–4)

- All potential emissions are **fully enclosed, sealed or filtered**, resulting in **very low residual risks**.
- No credible **source–pathway–receptor** linkages remain.
- All residual risks fall into **H1 "insignificant"** category.
- Site design (full enclosure, sealed concrete, bunding, emission extraction) ensures **BAT compliance**.

Overall H1 Screening Result:

This installation qualifies as *Low Risk* and all emissions can be screened out at H1 level.
No detailed modelling or Stage 3/4 risk assessment is required.

---

6. Control & Monitoring Requirements (H1 Step 5)

Aspect	Required Control	Frequency
Dust emissions	Filtration system maintenance; emission monitoring	Daily / as per permit
Bund integrity	Visual inspection	Weekly
Spill response	Spill kit readiness	Monthly
Noise	Equipment servicing	Weekly
Housekeeping	Internal floor management	Daily

---

7. Accident Management (H1 Step 6)

- Emergency spill kits
- Fire detection & extinguishers
- Automatic shutdown on filtration dysfunction
- Staff trained in emergency response
- Procedures displayed on-site

---

8. Final H1 Conclusion

- **The facility presents low environmental risk and complies with the H1 Environmental Risk Assessment methodology.**
- **All emissions screened out as not significant.**

Drawings & Figures

D.1 Elevations of Typical Solar Panel Processing Plant
Taken from Solar Recycling Plant Manual

D.2 Footprint of Typical Solar Panel Processing Plant
Taken from Solar Panel Recycling Plant Manual

D.3 Site Location Plan – SRS Swanscombe
Attached as File UBHSWAN25-01-EMS-Site Location Plan-V1.pdf

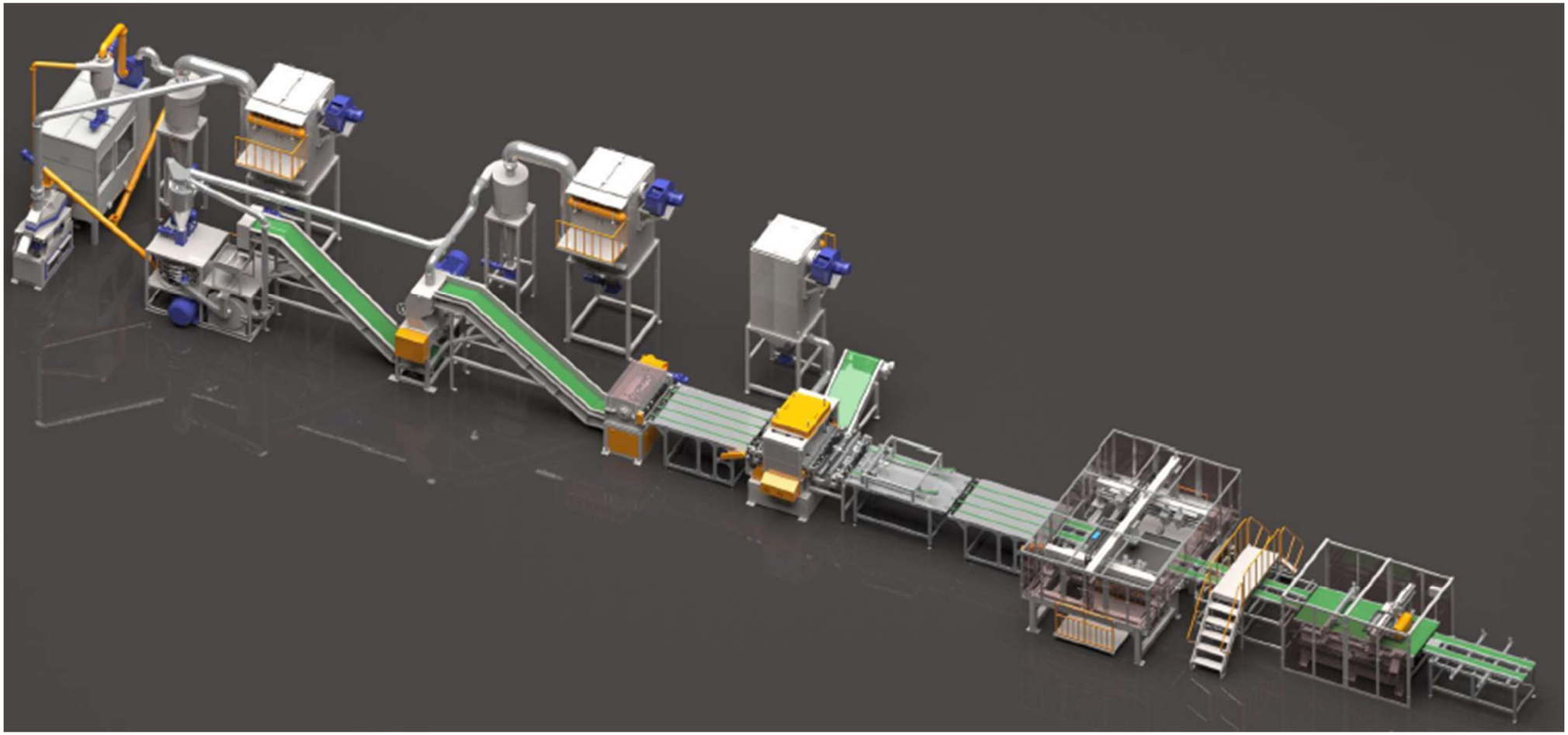
D.4 Detailed Site Plan & Building Ground Floor - EMS
Attached as File UBHSWAN25-02-EMS-Detailed Site Plan & Building Ground Floor -V1.pdf

D.5 Site Drainage Plan – SRS Swanscombe
Attached as File UBHSWAN25-02-EMS-Site Drainage Plan-V1.pdf

Other plans relevant to the Fire Prevention Plan are presented in Appendix 3 - SRS Swanscombe Fire Prevention Plan.

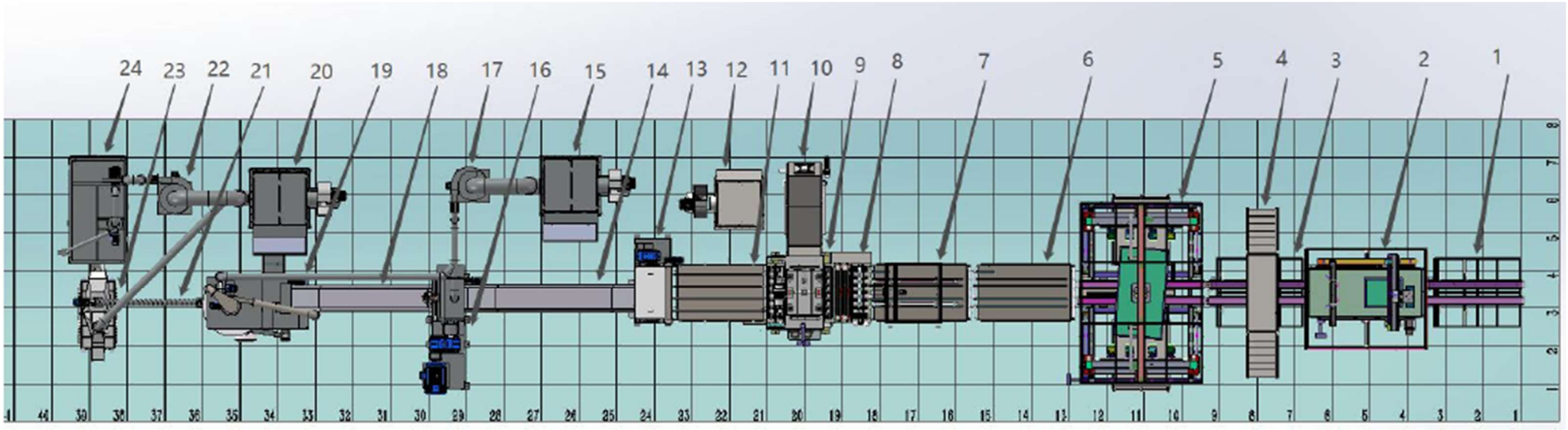
D.1 Elevations of Typical Solar Panel Processing Plant

Taken from Solar Panel Recycling Plant Manual



D.2 Footprint of Typical Solar Panel Processing Plant

Taken from Solar Panel Recycling Plant Manual



Legend – Major Plant Items:

2: Junction Box Removal (where fitted)

5: Deframer

8&9: Glass Removal

10: glass Discharge Conveyor

12, 15 & 20: Dust Filtration

13: Silicon Panel Shredder

16: Silicon Panel Crusher/Granulator

19: Silicon Panel Grinder

23 & 24: Proprietary Separation for silicon & metals products