



# Fire Prevention Plan

TeleCycle Europe Ltd



*Helping clients prosper through compliance*

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## SITE DETAILS

TeleCycle Europe Ltd  
Unit 15 Drome Road  
Deeside Industrial Park  
Sealand Garden City  
Flintshire  
CH5 2NY

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## OPERATOR DETAILS

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## APPLICATION REFERENCE

PAN-020500

## DOCUMENT REFERENCE

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## DRAWINGS

REFERENCE	TITLE
K419.1~20~001	Permit Boundary Plan
K419.1~20~002	Sensitive Receptors Plan (1km)
K419.1~20~003	Site Setting Plan (2km)
K419.1~20~004	Site Layout Plan
K419.1~20~005	FRS Access Route Plan
K419.1~20~006	Firewater Containment Plan

## FIGURES

FIGURE	TITLE
Figure 1	Wind Rose Shotwick

## APPENDICES

APPENDIX	REFERENCE	TITLE
Appendix A	K419.1~09~006	Sensitive Receptors Table
Appendix B	N/A	Automatic Extinguisher Specification
Appendix C	N/A	Emergency Contact Details

## 1. SCOPE

This Fire Prevention Plan (FPP) relates to TeleCycle Europe Ltd and their proposed operation at Unit 15 Drome Road, Deeside Industrial Park, Sealand Garden City, CH5 2NY. This FPP forms a part of the Bespoke Permit Application (Ref: PAN-018509) to be submitted to Natural Resources Wales (NRW) for the:

- Physical treatment (including temporary storage) of <10 tonnes/day hazardous and non-hazardous waste, consisting of:
  - Sorting, separation and shearing of catalytic converters (CATs) into different components.
  - Sorting, separation, manual dismantling, and storage of category 3 and category 4 WEEE into different components for onward transport.
  - Sorting, separation and storage of pre-segregated printed circuit boards.

The activities on site are for the purpose of recovery and recycling of precious metals.

The site location is shown on the Sensitive Receptors Plan K419.1~20~002 whilst the permitted boundary is shown on plan K419.1~20~001. The Site Layout Plan shows the arrangement of key areas and processes (see K419.1~20~004). Waste activities are undertaken within an area of approximately 0.07 ha within a contained industrial unit, upon a sealed impermeable surface (see Containment Plan K419.1~20~006).

The national grid reference for the site is SJ 33521 70505. The site lies in an industrial estate off the A494 a short distance from the England/Wales border; for a full breakdown of surrounding land use please see the Sensitive Receptors Plan (K419.1~20~002) and the Site Setting Plan (K419.1~09~003) and the Sensitive Receptors table (Appendix A).

TeleCycle Europe operate a small-scale recycling operation dealing with catalytic converters and WEEE and conduct activities in line with activity codes R3, R4, R5, R13. Catalytic converters are sorted, separated, and sheared into different components.

The catalytic converters are received already separated from the rest of the exhaust system. Catalytic converters are subject to a hydraulic shearing process to open up the metal casing and extract the ceramic monolith (containing the precious metal catalyst) and the metal or RCF matting which provides thermal insulation and physical support to the ceramic monolith. The equipment is connected to a filtered LEV system to extract and collect any dust/fibres released.



Undertaken as an ad-hoc, small scale activity, WEEE components are separated by manual dismantling to separate the printed circuit boards (PCBs) from the metallic or plastic casings and the packaging.

Printed Circuit Boards (PCBs) may also be received already separated and pre-segregated by the waste producer. These are stored for onward transport for recovery.

## 2. TYPES OF COMBUSTIBLE MATERIALS

Combustible materials on site are limited given the nature of the wastes accepted. All wastes relating to the recycling and reuse of catalytic converters are classified as non-combustible; this is the majority of the wastes accepted on site.

Operations relating to WEEE dismantling and printed circuit boards (PCBs) provides the potentially combustible material found on site.

### Persistent Organic Pollutants (POPs)

It is possible that some WEEE and PCBs accepted may contain POPs. As with all wastes these will be segregated and stored individually within a container or bulk bag. Should a fire occur on site the FRS shall be notified that POPs are present on site.

The List of Wastes (LoW) accepted at the site are outlined in Table 1 below.

**Table 1. List of Waste**

CODE	DESCRIPTION
<b>16</b>	<b>WASTES NOT OTHERWISE SPECIFIED IN THE LIST</b>
<b>16 01</b>	<b>end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)</b>
16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14 (catalytic converters containing refractory ceramic fibre (RCF) matting only).
16 01 22	components not otherwise specified (catalytic converters only)
<b>16 02</b>	<b>Wastes from electrical and electronic equipment</b>
16 02 13*	WEEE containing hazardous substances or components other than polychlorinated biphenyls, CFC, HCFC or HFC, or free asbestos.
16 02 14	WEEE containing hazardous substances or components other than polychlorinated biphenyls, CFC, HCFC or HFC, or free asbestos (category 3&4: IT and telecommunication and consumer equipment).
16 02 15*	hazardous components removed from discarded equipment (printed circuit boards)
16 02 16	Non-hazardous components removed from discarded equipment
<b>20</b>	<b>MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS</b>
<b>20 01</b>	<b>separately collected fractions (except 15 01)</b>
20 01 35*	WEEE containing hazardous components other than fluorescent tubes and other mercury containing waste or CFCs (category 3&4: IT and telecommunication and consumer equipment)

CODE	DESCRIPTION
20 01 36	WEEE not containing hazardous substances or components

### 3. WASTE THROUGHPUT

The site has a total annual throughput of up to 2,499 tonnes of waste, and a maximum waste treatment capacity of 10 tonne in a day. All deliveries of waste are scheduled and from approved suppliers, allowing an immediate overview of possible waste inputs prior to receipt. Ultimately, the quantity of waste inputs will be dictated by the Environmental Permit and the remaining storage capacity on site, as indicated within this FPP.

The annual tonnage of the WEEE received for manual dismantling is unlikely to exceed 100 tonnes. The manual dismantling of WEEE on site is a small-scale, simple operation to complement the export of PCBs, operating on an ad-hoc basis.

The volumes received and stored on site at any one time may fluctuate by type and volume but will not exceed those stated in the approved FPP.

Where commercial requirements cause the type or volume of waste to change then the risks associated with the changes will be reviewed and where appropriate amendments will be made to this FPP.

## 4. USING THE FIRE PREVENTION PLAN

### Location

A hard copy of this FPP shall be displayed in the office on site and all staff made aware of the measures outlined within the FPP. Required training of the related procedures discussed within this FPP shall be conducted and in the case of an emergency the FPP shall be presented to the Fire Rescue Service (FRS) upon arrival to site.

### Training

Evacuation drills are conducted bi-annually at the discretion of the Site Management and are recorded in the site diary, and any issues addressed through site meetings and further training if necessary.

### Activities on site

TeleCycle Europe operate a small-scale recycling operation dealing with catalytic converters and WEEE and conduct activities in line with activity codes R3, R4, R5, R13. Catalytic converters are sorted, separated, and sheared.

Catalytic converters are received already separated from the rest of the exhaust system. Catalytic converters are subject to an hydraulic shearing process, a recognised industry standard treatment method. The hydraulic shearing opens the metal casing and extract the ceramic monolith (containing the precious metal catalyst) within as well as the metal or refractory ceramic fibre (RCF) matting, which provides thermal insulation and physical support to the ceramic monolith.

To extract and collect any dust fibres released the equipment is connected to a certified Local Exhaust Ventilation (LEV) system equipped with a filter to extract and collect any dust/fibres released.

Throughout the hydraulic shearing process, the metal casings, ceramic monolith and RCF matting are retained within the enclosed system with LEV extraction, with direct connection to sealed containers where the components are dropped without the need for any transfer between containers.

Metal casings, ceramic monolith and RCF matting are segregated and stored in appropriate containers within designated areas in the enclosed building. Only clean, uncontaminated ferrous metals may be stored outside within the enclosed, lockable 8 yard skip whilst awaiting onward transport off site.

The manual dismantling of WEEE on site is a small-scale operation to complement the export of pre-separated PCB's, operating on a low scale, and ad-hoc basis. Typical materials for dismantling include:

- Servers, PC's, laptops
- Set top boxes, routers, hubs
- Mobile and fixed telecoms infrastructure

The annual tonnage of the manual dismantling is unlikely to exceed 100 tonnes, to be conducted on two workbenches with separated materials divided into storage bins. All dismantling will be done with hand tools or battery-charged drivers.

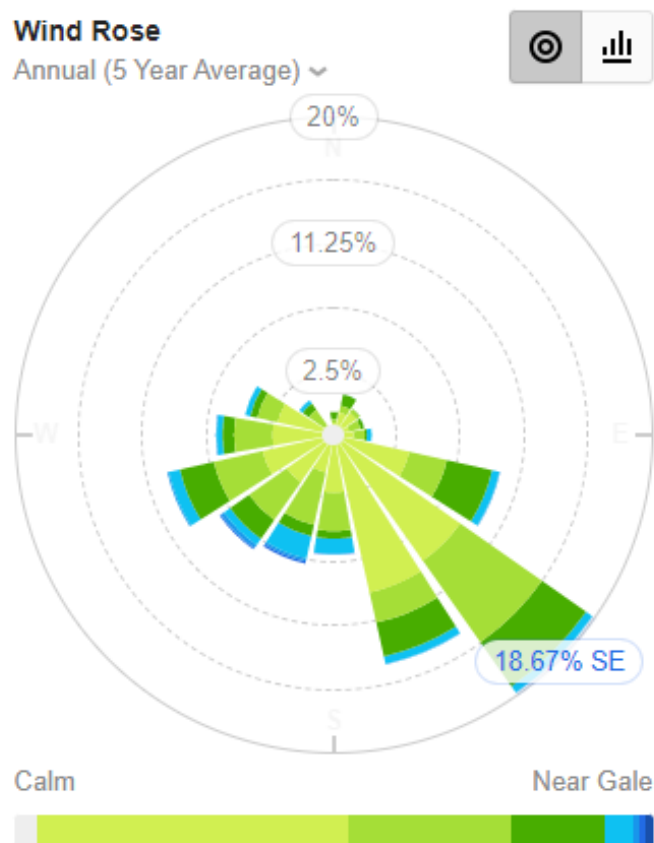
### **Site Layout Plan**

The Site Layout Plan (K419.1~30~004) depicts the working layout of the site and shall be reviewed on a regular basis to ensure that it reflects operations accurately.

### **Sensitive Receptors**

Sensitive Receptors are shown on the Sensitive Receptors Plan (1km buffer) and also within the Sensitive Receptors Table (Appendix A). A Site Setting Plan also shows receptors up to 2 km (K419.1~20~003). Sensitive receptors are displayed in all directions. The closest observing weather station where weather data is available is Shotwick situated approximately 1.3 km North of site.

Figure 1 shows the wind rose for Shotwick weather station which indicates that the prevailing wind originates from the Southeast, transporting any fire emissions to the Northeast across commercial and agricultural areas. Emissions will also be transported across the A548.



**Figure 1** Wind Rose from Shotwick (Willy Weather, 2022)

## 5. WASTE MANAGEMENT ACTIVITIES

Detailed below are the waste management activities to be undertaken during normal operating conditions. Details of the actions to be taken during emergency working can be found in Section 18 of this document.

### 5.1. Permitted Wastes

Permitted wastes are listed in Table 1. Any non-conforming waste types will be rejected upon identification. Where not immediately removed from site (the preferred option – see section 5.2), rejected wastes will be relocated to the designated quarantine area (shown in Site Layout Plan K419.1~20~004) or a suitable enclosed container, the customer will be informed (usually via telephone/email) and arrangements will be made to remove these items from site within 72 hours.

Where non-permitted wastes are not identified prior to unloading but are subsequently identified these are segregated and stored in a designated quarantine area, before export from site to a suitably permitted facility. Records of loads rejected will be kept.

### 5.2. Pre-acceptance procedure

A pre-acceptance procedure is followed in accordance with Sector Guidance Note S5.06 “recovery and disposal of hazardous and non-hazardous waste” section 2.1.1.

When a new enquiry is received by Telecycle the waste producer is asked to confirm the type of process where the waste is produced, the expected quantity of waste, and hazards associated with the waste (e.g. HP07 for RCF matting). The enquiry information is allocated a unique reference code and retained as a record for a minimum of 3 years.

Waste is delivered and stored pending treatment (shearing and manual dismantling) in either intermediate bulk bags, metal cages, IBCs, drums, or barrels. These are usually supplied by the Operator.

Non-conforming waste identified at the pre-acceptance stage shall be immediately reloaded onto the delivery vehicle and removed from site. Given all deliveries are pre-scheduled and from approved suppliers the receipt of non-compliant waste, and therefore use of the quarantine area for this material, is unlikely to occur.

### 5.3. Operating Hours

The site will be operational between 08:00 and 17:00, Monday to Friday



#### **5.4. Reception**

On arrival, vehicle details will be recorded in the site diary or similar document. The driver must also present copies of the waste carrier's licence appertaining to the transport company concerned and the relevant Waste Transfer/Consignment Note.

The containers are visually inspected to confirm the type and quantity of waste is correct to that agreed and specified by the waste producer, and to remove any contaminants, prior to acceptance at the site. All loads are inspected for non-permitted wastes, quality, and conformance with the Environmental Permit requirements. Non-conforming loads are refused entry and details are recorded.

The Waste Transfer/Consignment Note is then completed by Telecycle, dependent on the nature of the waste, stating the date and time of the delivery of the container, details of the delivery vehicle, a description of the waste by type and quantity, EWC, SIC and all other 'duty of care' requirements.

All drivers must be wearing appropriate PPE, before beginning the unloading process. Waste loads will be unloaded using a forklift truck or pallet truck, operated by a suitably qualified person. Smaller packaged items may be unloaded manually.

#### **5.5. Handling and storage**

A final visual inspection of the waste is then undertaken, where single category loads (e.g. those under 16 01 22 Non-hazardous catalytic converters) have been received these are unloaded, weighed on suitably calibrated scales and stored within a suitable container in the storage racking pending treatment (see Site Layout Plan K419.1~20~004) within the enclosed building.

Where mixed loads of catalytic converters are received (under 16 01 21\*), the waste converters with and without RCF matting are visually identified by looking down the pipe and segregated by hand sorting into hazardous or non-hazardous (where this is not possible, the segregation occurs following the de-canning process). These are then weighed, issued a unique reference and stored within a suitable container in the storage racking pending treatment (see Site Layout Plan K419.1~20~004) within the enclosed building.

Catalytic convertors are processed and stored as batches, passing through the hydraulic shearing process to access the ceramic monolith and separate from the other components. Containers of catalytic convertors may be temporarily stored within the *Storage, Sorting & Prep Area* as they move through the process. Separated components from the shearing process are then stored in their designated storage areas (Site Layout Plan, K419.1~20~004).

RCF matting will be immediately bagged into a robust, cable tied bag and placed within a sealed drum awaiting collection and stored within the indicated area shown on the site layout plan (K419.1~20~004).

Printed Circuit Boards arrive to site pre-segregated so once a final visual inspection has been conducted and the load has been weighed and stored in a suitable container, they are stored within the designated storage area (see Site Layout Plan, K419.1~20~004).

WEEE wastes accepted onto site are done so in low volumes and temporarily stored within the scales and QC area while they await manual dismantling. They are processed immediately with treated WEEE fractions and PCBs from the dismantling stored in the designated areas highlighted on the Site Layout Plan (K419.1~20~004).

All hazardous and non-hazardous waste types are stored in suitable containers in the designated storage areas (shown in Site Layout Plan K419.1~20~004) within the enclosed building.

Ferrous metals will be temporarily stored in an enclosed, lockable 8 yard skip outside the building still within the permit boundary.

All containers are labelled appropriately with a unique reference, date and hazard classification (HP07 for RCF matting), if appropriate.

A record is kept of all waste received at, or rejected from, the site. All records are maintained for a minimum of 3 years following recovery or disposal.

Waste reception and storage is undertaken within an enclosed building. There are no internal drains within the building and as such, any spillages will initially sit on the impermeable surface. Following a spillage site staff will use the appropriate spill kit to clean up the area. All materials used will be disposed of at suitably permitted facilities. Spill kits are strategically placed within the building.

Daily site checks are undertaken to ensure that all structures are in good repair and recorded in the site diary. A comprehensive inspection of the site floor is undertaken monthly, repairs are organised where defects are found to maintain the integrity of the surface and prevent the transmission of fluids.

Hydraulic and lubricating oils for use in the mobile plant, including waste oils, will be stored in appropriate containers, or removed by the service engineer. The container is provided with a

spillage containment tray, to prevent the leakage from the container of any materials that might leak from any of the drums contained within it.

Gas cylinders are stored externally within a locked cage and surrounded by two external walls. The cage is located away from other combustion risks, secured and locked at all times and appropriately signposted. Given the locality of the supplier, only the minimum required cylinders are stored on site at any one time.

All drums and containers stored within the site will be clearly marked with their contents and capacity. Drum openings will be securely sealed before being moved to or from the site to prevent spillages.

Spill response kits shall be available during the transfer of all substances at the site.

The external drainage gullies are inspected on a monthly basis to ensure they are free flowing, and the integrity has not been breached. If found to be blocked immediate action will be taken to remove and dispose of the blockage.

## 6. STORAGE AREAS

All waste activities including the storage and processing of combustible wastes will be carried out within the building.

Only clean, uncontaminated ferrous metals will be stored outside in an enclosed and lockable 8 yard skip. This is a temporary storage of a non-combustible waste.

The layout of the site is designed in a way to take account of the NRW's guidance, '*Fire Prevention & Mitigation Plan Guidance – Waste Management*'.

All internal areas of the site used for waste storage and processing will be undertaken on an impermeable surface.

All WEEE will be stored in suitable containers (e.g., 1,000 litre IBCs) and stored in designated areas that will be managed and maintained in accordance with the dimensions listed in Table 2 of Section 8.

## 7. MANAGING STORAGE TIMES

All wastes dispatched from site for onwards transportation well within the 3-month period stipulated by the NRW guidance as being at risk from self-combustion.

WEEE is accepted at the site and passes into the scales and QC area prior to being moved to the WEEE processing area. WEEE wastes will be temporarily stored while they await dismantling within the scales and QC area; given the low volumes accepted these will be processed immediately.

Following manual dismantling, the PCBs and other treated WEEE fractions are stored in the dedicated storage area (See K419~20~004 Site Layout Plan). PCBs from manual dismantling and those accepted already segregated, may be stored up to four weeks awaiting export to allow an economically viable shipment to be built up.

WEEE and WEEE components produced from the treatment process are turned around on average 7-14 days, this drastically decreases the risk of self-combustion from a high temperature exothermic reaction.

Ferrous metal casings will be securely stored within the enclosed, lockable 8 yard skip for up to 10 days while they await collection.

Ceramic monolith will be stored within sealed IBC containers, likely no longer than four weeks until ready for shipment off site. The containers will be stored within the racking on the western area of site.

Catalytic convertors awaiting treatment may also be stored within the racking although these are accepted and processed as batches, so the quantities are likely to be minimal.

## 8. MANAGING WASTE PILES

Detailed below are the steps which will be taken during normal operating conditions to manage waste storage areas.

### 8.1. Maximum Pile Sizes

All wastes are stored within suitable containers (bulk bags, IBCs). All containers are accessible from at least one side to enable movement to quarantine area in the event of a fire.

Bulk bags and IBCs are used for storage containers and will be stacked no more than three high in the designated storage areas.

Treated WEEE fractions originating from the manual dismantling process are stored within suitable containers on racking. Ferrous metals are stored in the enclosed & locked 8 yrd skip outside of the main operational building.

The Treated WEEE fractions will not exceed the height specified below.

All waste storage will be managed and maintained within limits stated within the NRW FPMP guidance.

All storage areas have been developed in accordance with maximum pile dimensions and storage requirements detailed within the NRW FPMP guidance and are described in Table 2 below. Internal treatment areas will consist of an impermeable surface. Locations of storage areas for materials described below are found on the K419.1~20~004 Site Layout Plan.

**Table 2 Maximum Pile Sizes**

Waste	Max Length m	Max width m	Max height m	Volume m <sup>3</sup>	Form	Combustible
Catalytic Convertors	5.4	1	3	16.2	Whole - Pre-treatment	×
RCF Matting/Dust	5	1	3	15	Drum - Post catalytic convertor shearing	×
Ceramic Monolith/Casings	5	1	3	15	Sealed container - Post catalytic convertor shearing	×

Waste	Max Length m	Max width m	Max height m	Volume m <sup>3</sup>	Form	Combustible
Solid – Non-combustible ferrous metal	3.2	1.7	1.2	6.1	8-yard skip - Post catalytic convertor shearing	✗
Printed Circuit Boards	12	0.9	2	22	Bulk bags - Source segregated	✓
Treated WEEE fractions	2.7	1	3	8.1	Bulk bag/IBC - Manual dismantling	✓
TOTAL MAXIMUM STORAGE CAPACITY				82.4		

## 8.2. Separation Distances

The treated WEEE fractions are stored in excess of 6 m from other combustible/flammable materials and buildings (where no fire-resistant barrier is provided). The adjacent catalytic convertors are not combustible waste as indicated in Table 2 above.

The distance (as marked on K419.1~20~004 Site layout) between combustible waste storage areas i.e., Treated WEEE Fractions and PCB's) is approximately 16 m.

## 8.3. Fire Walls and Bays

All combustible wastes will be containerised in bulk bags and IBCs and stored in compliance with FPP guidelines. The perimeter walls of the unit and the office are fire-resistant concrete block walls, approximately 100 mm thick. A fire door provides access from the office to the warehouse area.

As Figure 2 indicates, this provides a resistance period of at least 120 minutes (2 hours) and therefore conforms with the NRW FPP guidance.

Concrete masonry wall thickness (note 8)	Fire rating	
	No finishes	With finishes (note 9)
75mm non load bearing	1 hour	2 hours
90mm non load bearing	2 hours	3 hours
90mm load bearing	1½ hours	2 hours
100mm non load bearing	4 hours	4 hours
100mm load bearing	2 hours	4 hours
140mm load bearing	3 hours	4 hours
190mm load bearing	4 hours	4 hours

**Figure 2:** MPA The Concrete Centre. (2019) *Concrete and Fire Safety*, ISBN 978-904818-64-9

## 8.4. Seasonality and waste stack management

The NRW's FPMP guidance requires variations in supply and demand, such as seasonal fluctuations, to be managed in a way which does not increase the fire risk associated with a backlog in waste and extended storage periods.

Whilst not anticipated, where significant fluctuations in volumes are observed once operations have commenced after approval of this FPP, and these are likely to significantly increase fire risk, contingency plans will be implemented to mitigate potential impacts. Actions to mitigate



potential periodic variation may include the provision of additional staff members over busy periods or the diversion to other sites.

If periods of unexpected shutdown occur, due to breakdowns, waste will be directed to other permitted facilities.

## 9. MANAGING COMMON CAUSES OF FIRE

The most likely causes of fire at the site have been identified below. Table 3 provides a summary of the management controls for restricting the possibility of a fire outbreak.

- Arson or vandalism
- Visitors and Contractors
- Ignition sources (naked flames, space heaters, incinerators, etc.)
- Self-combustion
- Plant or equipment failure
- Discarded smoking materials (matches, lighters, etc.)
- Hot works
- Industrial heaters
- Hot exhausts
- Electrical faults including damaged or exposed electrical cables
- Reactions between wastes
- Deposited hot loads
- Build-up of loose combustible waste, dust and fluff
- Tramp metal
- Batteries
- Cylinder stored at site
- Leaks and spillages of oils and fuels

**Table 3. Fire Risk Management**

CAUSES OF FIRE	RISK CONTROL
<b>Arson or vandalism</b>	<p>The site is accessed from Drome Road..</p> <p>The industrial unit is entered via the roller shutter door or office door; both are locked outside of operational hours.</p> <p>Outside of the operational hours security is in place around the Deeside Industrial Estate.</p> <p>Live 24-hour recording CCTV cameras are located on site, these provide surveillance of the entire site, as indicated on the site layout plan (K419.1~20~004).</p> <p>Out of hours, the CCTV has night vision and is monitored by the TCM and a member of staff via a mobile application that sends notifications to personal mobile devices if motion from intruders or flames are detected.</p> <p>Site inspections are carried out daily including around the boundary of the site.</p> <p>A security alarm is constantly monitored by an alarm service is externally connected to the Police service.</p>
<b>Visitors and Contractors</b>	<p>All fire safety related emergency procedures, including relevant elements of the FPP, are communicated to all contractors and visitors who attend site.</p>

CAUSES OF FIRE	RISK CONTROL
	Fire risk warning and Fire action signs are displayed in appropriate locations on site.
<b>Ignition Sources (e.g. naked flames, space heaters, furnaces and incinerators)</b>	Open burning is not permitted anywhere on the site. Space heaters, furnaces, incinerators, heating pipes and naked flames not permitted / used on site. Where these are required in exceptional circumstances, any ignition source will be kept at least 6m away from combustible waste and flammable substances.
<b>Self-combustion</b>	See Section 10
<b>Plant or equipment</b>	All site plant and equipment will be maintained in accordance with the manufacturer's guidelines and a maintenance and inspection programme. All breakdowns or faults will be recorded with a minimum maintenance frequency of at least annually. All site vehicles, mobile and static plant are fitted with suitable fire extinguishers. An exclusion zone of 6m will be maintained between combustible waste and plant machinery and equipment when not in use.
<b>Discarded smoking materials</b>	The site operates a strict no smoking policy in all areas. Regular housekeeping will be maintained throughout the site.
<b>Hot works</b>	Hot works that occur on site are permitted & supervised by the TCM following issue of an Hot Works Permit, which requires the production of activity specific RAMS.
<b>Industrial heaters</b>	Industrial heaters are not used on site.
<b>Hot exhausts</b>	Operational staff will be required to remain vigilant when using plant and equipment for signs of fire caused by dust settling on hot exhaust and engine parts. Plant and equipment will be checked at the start and end of each day and cleaned down before use where required, and separations distances from combustible waste checked.
<b>Electrical faults (including damaged or exposed electrical cables).</b>	Electrical and light fittings will be fully certified by a qualified electrician. All electrical equipment will be routinely checked and maintained by an appropriately qualified individual. Light and electrical fittings will be of a type which aids in the prevention of electrical fires (e.g. Residual-current devices, fire resistant casings, etc.).
<b>Reactions between waste types</b>	Non-permitted wastes are rejected during inspection and acceptance. Site staff trained in waste acceptance procedure. Site inspections are carried out on a daily basis. Combustible wastes are separated.
<b>Deposited hot loads</b>	Hot loads are not accepted. All loads are checked prior to acceptance. The quarantine area (see K419.1~09~004 Site Layout Plan) can be utilised in an emergency.
<b>Build-up of loose combustible waste, dust and fluff</b>	All WEEE will be stored in appropriate containers. Regular housekeeping and inspection of the site.

CAUSES OF FIRE	RISK CONTROL
	All equipment is checked prior to use and inspected as part of the daily site inspection routine. The CATs treatment equipment is connected to a LEV system to extract and collect any dust/fibres released
<b>Tramp metal</b>	No treatment process on site can produce metal shreds in significant quantities. No waste treatment on site that may cause metal shreds hot spots.
<b>Batteries</b>	No batteries accepted on site. All loads are checked prior to acceptance, Site inspections are carried out on a daily basis.
<b>Cylinders stored on site</b>	Cylinders are secured within a locked gas cage, positioned away from any combustible materials and is appropriately marked by signage. Minimum amount of cylinders are stored on site given proximity of local supplier.
<b>Leaks and spillages of oils and fuels</b>	Spillages will be cleaned up without delay upon detection. Regular site inspections and a maintenance program will be in place.

## 10. PREVENTING SELF COMBUSTION

### General Self Combustion Measures

Due to the limited time period that waste is to be stored, the nature of permitted waste types and the reduction of the thermal mass of waste storage by utilising suitable containers to provide air gaps, the risk of self-combustion from a high temperature exothermic reaction is considered to be very low.

All wastes are stored within individual storage containers within the building. Owing to the nature of the permitted waste accepted and the limited periods they are stored on site the risk of self-combustion is very low.

Despite the low risk all staff will be required to remain vigilant and implement an informal fire watch throughout the day to supplement the daily site inspections undertaken both at the beginning and end of the working day.

During site inspections the integrity of containers are checked for any signs of leaks or spillages.

Given wastes are stored internally this negates any impact from hot or dry weather. Ferrous metals stored outside are done so within an enclosed and locked container to provide shade cover. The limited storage times greatly reduces the risk of any self-combustion taking place.

Waste storage areas will be managed in accordance with the measures, sizes and separation distances set out in Section 8.

In the event of a fire from self-combustion the firefighting techniques detailed in Sections 14 and 15 will be implemented.

## 11. MONITORING THE FIRE RISK

Nominated employees will be required to conduct twice daily checks to ensure compliance with the approved fire prevention measures. Formal inspections will be carried out at the start and end of each working day, to check for fire risks and ensure that all overnight provisions are in place.

The warehouse and office areas are covered by a smoke detection system.

CCTV cameras cover both the office and warehouse areas within the unit. External cameras cover the front and rear of the property.

## 12. DETECTING AND SUPPRESSING FIRES

### 12.1. Fire Detection

Staff are trained to be vigilant with two scheduled fire checks throughout the operational day. A daily site check is carried out at the start and end of each working day.

The site is monitored 24 hours a day, 7 days a week by CCTV. The CCTV cameras have night vision and are monitored by the TCM and staff via an application on their mobile devices. The CCTV is monitored during operational hours. Out of hours, the CCTV is monitored by the TCM and another staff member. Cameras cover external areas to the front and rear, the office area, and the main warehouse area.

The CCTV system is remotely accessible at all times by selected site staff.

If intruders are identified, the industrial estate security or emergency services will be contacted. If a fire related incident is detected the TCM and/or staff member is able to visit site within 30 minutes and the emergency services will be contacted if necessary. The TCM and all members of staff are trained in the emergency response to a fire, including using fire extinguishers and deploying the manual fire water containment barriers.

All staff will remain vigilant to monitor for the outbreak of any fires and raise the alarm if there are any fires on site. They will notify the appropriately appointed contact and the emergency services.

The internal process and storage areas are fitted with a smoke detection system.

### 12.2. Fire Suppression

The site benefits from manual and automatic fire extinguishers which are located internally, as shown on Site Layout plan (K419.1~20~004). The higher risk location of WEEE waste storage has automatic localised fire suppression (extinguishers). The PCBs storage location will be equipped with a 10 kg capacity extinguisher to cover in excess of the storage pile. The extinguisher located over the WEEE fractions is likely to be smaller in capacity but still in excess of what is required to cover the storage pile. The automatic fire extinguishers deploy if a temperature of 68 °C is detected by the integrated system. A representative specification is included within Appendix B.

Manual fire extinguishers are deployed by members of staff who are trained in fighting small scale fires.

In case of an emergency the affected burning/smouldering material will be tackled with manual fire extinguishers (CO<sub>2</sub> and foam). If this is not immediately effective the Fire and Rescue Service (FRS) will be called to tackle the fire.



### 13. QUARANTINE AREA

The quarantine area is identified on the Site Layout Plan (K419.1~20~004) and covers an area of 12 m<sup>3</sup> (4 m x 1 m x 3 m) to hold up to 50% of the largest waste storage area (22 m<sup>3</sup>) at any one time in line with the relevant guidance.

In the event of a fire, a minimum separation distance of 6 metres will be provided around the Quarantine Area in order to adequately isolate unaffected WEEE and all permanent structures.

Any infrastructure or material in transit, that is within 6 metres of the quarantine area can be easily and quickly moved out of this area using on site plant.

## 14. ALTERNATIVE MEASURES

Alternative Measure	Minimise the likelihood of a fire happening	Aim for a fire to be extinguished within 4 hours	Minimise the spread of fire within the site and to neighbouring sites
Automatic fire extinguisher	N/A	<p>Located in the highest risk area i.e. above the PCBs and WEEE.</p> <p>Triggered by temperature (68°C) which will deploy dry powder to smother fire.</p>	Extinguisher covers in excess of the waste storage area below.
All waste is containerised in IBCs, containers or bulk bags	Only a small volume of waste is contained within an IBC, decreases likelihood of fire starting	IBCs, bulk bags, pallets can easily be moved to the QA with on-site plant to be extinguished away from other waste.	Non-burning waste can be moved quickly.
Increased monitoring frequency with daily site checks at the start and end of every working day. Two checks in 24hrs with handheld Thermal Imaging Camera (TIC)	<p>Allows detection of smouldering/hotspots/fire at their earliest stage.</p> <p>Shorter windows of risk given frequency of inspections.</p>	Early detection allows early intervention before fire can grow out of control.	Shorter risk windows

## 15. FIREFIGHTING TECHNIQUES

Detailed below are the responses and actions which may be undertaken by operational staff members to isolate and extinguish burning or smouldering material upon detection. All operational staff members will be trained in the techniques and principles identified within this document. It must be noted that firefighting techniques should only be used if safe to do so. In the event of a fire becoming out of control, priority should be given to the safe evacuation of the site and contacting the Fire & Rescue Service at the earliest opportunity.

### 15.1. Initial Response

The aim of the initial response is to extinguish a fire in its earliest stage before it can take hold, using the *in-situ* manual fire extinguishers which are placed at key locations (see Site Layout Plan K419.1~20~004).

There are also automatic fire extinguishers positioned above the higher risk areas of WEEE storage and PCBs. The automatic extinguishers will discharge dry powder if temperatures of 68°C are detected. See representative specification in Appendix B.

Upon detection of a fire the alarm will be raised. If safe to do so, burning, or smouldering material will be extinguished *in-situ*, by trained staff members using the manual extinguishers.

The manual extinguishers should be sufficient in extinguishing but in the event the fire cannot be halted at this point the FRS shall be contacted as they will prove better equipped to tackle any fire that cannot be halted at its incipient stage.

All openings to the unit will be sealed to ensure potential firewater will be contained within the building on the impermeable surface.

To restrict any firewater that may be used from entering the drainage channel, a firewater barrier will be erected across the entrance to the industrial unit and sandbags used as a seal. Once extinguished the site manager will arrange the collection of the contaminated firewater for disposal at a suitably permitted facility.

If the FRS are called the FPP shall be made available upon their arrival to site.

### 15.2. Fire And Rescue Service Strategies

In the event of a fire the FRS has one access point into site, see K419.1~20~005 FRS Access Route Plan. It should be noted that once the Fire and Rescue Service attend site and formally take charge of the incident, measures described in this FPP may no longer apply. The FRS may consider one of the two following strategies:

***Early Intervention***

- Apply CO<sub>2</sub> and foam extinguishers to specific burning areas of small, localised fires.
- Where safe to do so, isolate and transfer unaffected material to the quarantine area.

***Defensive Approach***

- To be used in the event of well-established or deep-seated fires.
- Defensive approach only to be used in the event of a significant fire occurring to contain spread of fire.

## 16. WATER SUPPLIES

### 16.1. Volume Required

NRW's stipulated water requirement for firefighting to take place and to manage a worst case scenario is 2,000 litres per minute over a 3-hour period to extinguish a 300 m<sup>3</sup> waste pile/stack (Section 20 of the FPP guidance).

The worst-case scenario is defined in the FPP guidance as a fire in the largest waste pile/stack. The largest waste stack on site is 22 m<sup>3</sup> (see Table 2 in Section 8.1).

Volume of water required
<b><i>From NRW Guidance</i></b>
2000 litres x 180 minutes = 360,000 litres per 300m <sup>3</sup> 360,000 litres/300m <sup>3</sup> = 1,200 litres per m <sup>3</sup> of waste
<b><i>Site specific</i></b>
1,200 litres per m <sup>3</sup> of waste x 22 m <sup>3</sup> = 26,400 litres (26.4 m <sup>3</sup> )
Water supply delivery rate required: 26,400 litres / 180 minutes = 146 litres/minute

The volume of water required for firefighting to take place and to manage a worst-case scenario is 26.4 m<sup>3</sup>.

Delivery of 26.4 m<sup>3</sup> of water over a three hour period will require a 146 litre/minute delivery rate.

The water will be supplied by the site's closest fire hydrant, see Site Layout plan (K419.1~20~004). The fire hydrant is maintained by the water board in accordance with BS99903. This standard requires regular inspection of at least once a year, and an annual test.

- <1 hectare 1200 l/min
- 1 – 2 hectares 2100 l/min
- 2 - 3 hectares 3000 l/min
- >3 hectares 4500 l/min

Based on available information the closest Fire Hydrant is likely to provide at least 1200 l/min flow, which is far in excess of what need to manage a worst-case scenario on site.

## 17. MANAGING FIRE WATER

In the event of a fire, the internal area of the site will be shut off immediately to prevent the discharge of contaminated fire water to the surrounding environment.

The site benefits from a sealed impermeable surface where all waste activities take place. A drainage channel runs through the concreted area to the north of the site outside of the industrial unit (see Containment Plan K419.1~20~006) which all surface water would drain to.

To restrict contaminated fire water from entering the drainage channel a firewater barrier would be erected across the roller shutter entrance to contain fire water within the industrial unit. Sandbags would also be used to prevent the discharge of any contaminated firewater.

The sealed internal area would provide approximately 400 m<sup>2</sup> area, which with the firewater barrier erected (around 0.2 m tall) would provide a volume of approximately 80 m<sup>3</sup>. Containment capacity provides sufficient capacity.

Debris and firewater will be removed from site by a suitable contractor and taken to an appropriately permitted facility.

### 17.1. Managing Fire Residues

The discharge of firewater residues to the surrounding environment will not be permitted.

Contaminated fire water will be contained and removed from site by an appropriate contractor to an authorised facility.

Residues such as burnt material and ash will be cleared away as soon as is safe to do so. Contaminated material and fire residues will then be transferred to an appropriately permitted facility for disposal.

### 17.2. Maintenance Of Surfaces and Drainage

In the unlikely event of a fire occurring surface cleaning and residue removal will be undertaken as will checks to the integrity of the site's surfaces and infrastructure.

## 18. DURING OR AFTER AN INCIDENT

### 18.1. During an incident

Site operations will cease, and operatives will be informed to clear the site, or not attend. Those on site will be directed to the fire assembly point on site (see Site Layout Plan K419.1~20~004). Any collections will be cancelled, and any deliveries will be diverted to another suitably permitted site. Site Management will be present on the site during the fire, or as close as is deemed safe, and available to emergency services and responding to any issues that arise. The primary products of combustion that may impact the environment or nearby residents or businesses are smoke and fire water.

#### ***Notifying residents and businesses***

In the event of smoke emissions all neighbouring units will be notified whether physically or through telephone contact. See Appendix C for details.

Natural Resources Wales shall be contacted at their incident report line: 0300 065 3000.

#### ***Clearing and decontamination after a fire***

A third-party contractor will be instructed to clear and decontaminate areas of the site impacted by a fire.

#### ***Making the site operational after a fire***

It is unlikely that a fire event will impact operations significantly, however the site will be cleaned and inspected post fire. Also, structural damage will be repaired as soon as possible prior to operations re-commencing.

The root cause of the fire will be established, and all site procedures and this document reviewed, and staff updated with any changes.

### 18.2. After an Incident

Once a fire has been extinguished, and it is safe to do so, checks will be carried out on the structural integrity of the site's critical infrastructure and internal/external surfaces.

Where necessary, the site will be decontaminated using appropriate remediation measures including, but not limited to; the cleaning down and replacement of damaged surfaces, building materials and removal of contaminated fire water.

In the event of a site closure following a fire, provisions will be made to divert waste to an appropriately permitted site.

After an incident and prior to recommencement of operations, a full review of the site's fire prevention measures, operating procedures and emergency procedures will be carried out.

The review will include an assessment of the site's performance, the cause of the outbreak, and corrective and preventative measures required in order to prevent a similar incident.



## 19. REVIEWING AND MONITORING THE FPP

In addition to the measures outlined above, should an incident occur on, an investigation will be undertaken, the FPP will be reviewed and corrective and/or preventive actions identified, so as to ensure ongoing compliance with relevant elements of the NRW FPMP guidance can be achieved.

This FPP will be subject to annual review.

Circumstances that may warrant a review into the document include:

- Experiencing a fire incident (See *Section 18* of this FPP)
- Additional combustible waste streams accepted
- Increase of waste volumes accepted
- Development of site infrastructure
- Installation of new equipment or plant

AREAS TO UPDATE	ACTIONS
Staff Training	Ensure FPP is available, and staff are aware where it is kept. Ensure staff receive training to ensure measures outlined within FPP can be implemented. New starters will undertake induction training. Existing employees subject to regular refresher courses, drills/exercises. All training monitored and recorded.
Site Monitoring	Ensure site inspections are undertaken, observations recorded, and all checkpoints are met. Review waste storage areas and any separation distances (if relevant) are being maintained in accordance with the FPP. Monitor and control temperatures of waste storage areas. Monitor and record residence times of wastes stored. Ensure plant and equipment are adequately maintained in accordance with the manufacturer's guidance and by appropriately certified personnel. Ensure fire prevention measures and equipment is tested and maintained.

## 20. TRAINING AND COMPETENCE

All employees, contractors and visitors working and visiting the site will be required to complete a formal health and safety induction process prior to commencement of work on site. The induction will include basic fire prevention measures, the location of the FPP, site specific rules regarding smoking and the site emergency procedures.

Compliance with the site rules will be monitored continuously by the Operational Management Team, where necessary disciplinary actions will be taken.

Signs will be clearly visible indicating the locations of emergency exits, fire extinguishers, fire alarm call points and spill kits.

All fire safety equipment will be serviced by a competent person and service periods are scheduled in yearly.

Fire drills will be carried out every 6 months. During the drill, emergency conditions will be simulated in order to assess the site's performance and efficiency when dealing with an incident. Results and observations will be recorded and reviewed to identify further training needs or required changes to the evacuation plan. All fire drills will be recorded in the site diary or similar document.

### 20.1. Operational Staff

Operational staff will be trained on fire safety and fire extinguisher use. Staff will not be trained in the fighting of larger fires, but instead will default to contacting the FRS where it is no longer safe, reasonable or effective to attempt to extinguish a fire with portable extinguishers.

### 20.2. Contractors

All contractors will work under the direct control of the nominated management representative, who will be sufficiently aware of the work to be carried out and the ongoing site operations.

### 20.3. Visitors

All site visitors will be made aware of health and safety procedures, including the site's fire evacuation procedures and site-specific smoking arrangements. Visitors will need to be accompanied by staff at all times.

## 21. INFORMING NATURAL RESOURCES WALES

NRW will be informed, in accordance with the notification requirements of the permit, of any fire on site which significantly affects or may significantly affect the environment.

## 22. INCIDENT REPORTING AND INVESTIGATION

Details of any fire and actions taken will be recorded and retained at the site. The circumstances of any fire will be investigated by senior management and, if applicable, a Health and Safety advisor and their findings will be used to inform further preventative actions.

Emergency contacts for the site and local emergency services will be clearly displayed on the Emergency response information on the site board at the main entrance.

Appendix C also lists contact details for emergency contacts on site, relevant numbers for emergency services, regulatory bodies, and neighbouring businesses.



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