

Client: Checkfire Limited

Address: Sir Alfred Owen Way, Pontygwindy Industrial Estate, Caerphilly, CF83 3HU



Checkfire Limited, Unit 10B, Sir Alfred Owen Way,  
Pontygwindy Industrial Estate, Caerphilly, CF83 3HU

## Application for Bespoke Environmental Permit

## Fire Prevention and Mitigation Plan




18 July 2025

Our Reference: Checkfire Ltd-FPMP-RP04-Final



Waste And Industry Compliance Ltd

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## DRAWINGS

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Drawing 'Indicative Site Layout and Storage'-DW03	1:300 @ A3
Drawing 'Site Drainage'-DW04	1:400 @ A3

# 1 SITE DETAILS

## 1.1 BACKGROUND

1.1.1 This Fire Prevention and Mitigation Plan (FPMP) has been prepared on behalf of Checkfire Limited (***the Operator***) for Unit 10B, Sir Alfred Owen Way, Pontygwindy Industrial Estate, Caerphilly, CF83 3HU (***the Site***). It has been prepared using the following:

- 'Fire Prevention and Mitigation Plan Guidance – Waste Management, Guidance Note 16, Version 2' (Natural Resources Wales, August 2017)
- Draft updated guidance Fire Prevention and Mitigation Plan (Natural Resources Wales, January 2025)
- Guidance for the storage and treatment of aerosol canisters and similar packaged wastes (Environment Agency, November 2011).

1.1.2 Checkfire Limited was established in 1975 and is a leading supplier of fire extinguishers and high-quality ancillary equipment to trade customers in the UK and overseas. As part of the service to customers, the Operator seeks a bespoke Environmental Permit to authorise the return of fire extinguishers that are out of date or spent or no longer required by the client, so that they can be safely emptied and decommissioned. The proposed permit boundary is shown on Drawing 'Indicative Site Layout and Storage', DW03.

1.1.3 The Site incorporates an enclosed and roofed concrete block and steel portal framed building fitted with impermeable concrete slab throughout. The building is fitted with a roller shutter vehicular access door, separate pedestrian access door and additional pedestrian emergency exit fire door.

1.1.4 Deliveries of out of date, spent or no longer required fire extinguishers are off-loaded and transferred into the building for storage and processing. A drainage channel inside the building leads to an internal dedicated concrete sump, where any inadvertent spillage of fire extinguisher media is collected before being pumped to an IBC for authorised disposal off-site.

1.1.5 In addition, a second lateral drain has been installed inside the building across the entire internal width of the roller shutter vehicular access door and pedestrian door to prevent any possible escape of liquid spillages to the external environment. The drain falls to a dedicated concrete sump. Any accidental spillages or leakage of liquid or foam from IBCs or fire extinguishers inside the building that drains towards the entrance doors would collect in the lateral drain then fall to the concrete sump, from where it would be pumped to an IBC inside the building for authorised disposal off-site. There are no drainage outlets inside the building to the external environment or public sewer.

1.1.6 An external yard in front of the building comprises a combination or engineered concrete and block surface and is used for the storage of packaging waste in an enclosed and lidded

skip. All packaging waste arises from the supply or return of fire extinguishers to or from customers.

1.1.7 There is an external lateral drain across the yard that drains run-off water from the building roof. This drain leads to the Nant yr Aber. The Operator has installed a manual shut off valve in the external drain, so that in the event of any potentially polluting liquids from the Site entering the drain, they could be prevented from draining into the Nant yr Aber by closing the shut off valve.

1.1.8 A CCTV drainage survey was undertaken by AR Drainage Solutions on 13 November 2024. The Site Drainage Plan shows the foul sewer and storm water sewer on the external yard, see Drawing 'Site Drainage', DW04. The discharge point to foul sewer is marked as 'FW1: Foul Sewer Discharge Point' on the drawing.

1.1.9 Site activities are summarised as follows:

- The receipt, storage and decommissioning of up to 60,000 out of date or spent or no longer required fire extinguishers per month (i.e. up to 720,000 units per annum);
- The storage and transfer of small quantities of non-hazardous packaging waste associated with the return of fire extinguishers to the Site (e.g. cardboard, plastic and paper packaging);
- Separately baling cardboard and plastic wastes on site;
- The emptying and transfer of spent or no longer required fire extinguisher foam media to an activated carbon absorption plant, which captures and contains contaminants in the carbon media, with the cleaned liquid media transferred into dedicated IBCs for off-site removal as a non-hazardous waste to authorised facilities. The used carbon absorption media is either transferred to an authorised facility for thermal destruction or returned to the supplier for off-site processing;
- The emptying and transfer of spent or no longer required fire extinguisher powder media to a bagging plant for collection in bulk 1 tonne bags for transfer off-site to an authorised recycling facility;
- The emptying and discharge of spent or no longer required deionised water to foul sewer in accordance with a Trade Effluent Discharge Consent issued by Welsh Water;
- The dismantling of empty foam, powder and deionised water fire extinguishers, with the metal and plastic components supplied to authorised off site recycling facilities. Dismantled metal components are transferred via an inclined conveyor to a 40 cubic yard skip located inside the building for bulking up and transfer off-site to an authorised scrap metal recycling facility;
- The storage of out of date or spent or no longer required CO<sub>2</sub> fire extinguishers, prior to their off-site removal to an authorised facility for emptying of gas media,

refilling with new media and reconditioning of the cannister for supply to customers. Any CO<sub>2</sub> cylinders that cannot be reconditioned off site are emptied and then returned to the Site for dismantling and recycling of metal and plastic components etc.

- 1.1.10 The capacity of fire extinguishers received at the Site typically ranges from 1 to 9kg of foam, powder or deionised water media. The total weight of a fire extinguisher filled with 9kg of media is 14kg, which includes the media, metal cannister, internal dip tube and nozzle. As a worst-case scenario, 720,000 fire extinguishers units per annum each weighing 14kg equates to 10,080 tonnes per annum. In addition, up to 5,000 tonnes of packaging waste may be received at the Site. Therefore, the maximum annual waste throughput at the Site will be 15,080 tonnes.
- 1.1.11 Of this total, up to 1,500 tonnes per annum may be hazardous waste from foam filled fire extinguishers (circa 70% of all foam filled fire extinguishers are PFAS free and non-hazardous). However, the receipt of hazardous waste will be significantly less than 10 tonnes per day and the maximum storage capacity of hazardous waste will be under 50 tonnes at any one time.
- 1.1.12 The Site will not accept nitrogen cylinders/canisters or halon filled fire extinguishers.

## **1.2 THE SITE**

- 1.2.1 The Site is located on the Pontywindy Industrial Estate, Caerphilly. It is bordered by other industrial units to the west, south and east. Sir Alfred Owen Way is located to the immediate north, beyond which there are further industrial units within the Industrial Estate. The Site is accessed off Sir Alfred Owen Way.
- 1.2.2 The nearest residential properties are circa 145m west on Pantycelyn Drive, 150m west on Herbert Drive, 160m southwest on Lewis Drive, 165m south southwest on Howard Drive, 200m southwest on Dyfed Drive and 200m west on Davies Drive. The nearest domestic properties east of the Site are on Pontywindy Road, circa 215m from the facility.
- 1.2.3 The Site is not located within a designated Air Quality Management Area (AQMA) (<https://uk-air.defra.gov.uk/data/laqm-background-home>).

## **1.3 FIRE PREVENTION OBJECTIVES – OUTLINE METHODOLOGY**

- 1.3.1 The purpose of this FPMP is to ensure that all reasonable measures are undertaken to prevent a fire.
- 1.3.2 The FPMP provides a plan to minimise likelihood of fire breaking out, a means of extinguishing fire if it broke out, and a statement of methods designed to minimise the spread of fire.

## **1.4 METEOROLOGICAL CONDITIONS**

- 1.4.1 Meteorological Office predictions and recordings of local weather data

(<https://www.metoffice.gov.uk/>) will be reviewed by the Site Manager to allow forward planning. Weekly observations of weather conditions, including wind speed, direction and temperature, will be made so that site operations can be rearranged to adapt to changing conditions where necessary.

## **2 FPMP - OVERARCHING MANAGEMENT RESPONSIBILITY**

- 2.1.1 The Site Manager, or in his/her absence due to annual leave etc, the Operations Director will have responsibility for ensuring that the potential for fire outbreak arising from operations on the Site is minimised. Adequate staffing levels will be maintained at all times to ensure the effective operation of the facility.
- 2.1.2 In line with current industry best practice, the fire prevention controls set out in the sections below will be used as the 'appropriate measures' to minimise the risk of and, wherever possible, prevent outbreak of fire associated with operations at the Site.
- 2.1.3 Site management meetings will be held monthly to discuss current and planned Site operations with respect to their potential for generating fire and accordingly the FPMP will be updated as necessary. Identified actions arising from the meetings and responsibilities for their completion will be recorded within the meeting minutes prior to circulation within Checkfire Ltd to the relevant personnel.
- 2.1.4 The FPMP will be made readily available and clearly identified on Site and all staff will be aware of the location of the plan. It is referenced in the Environmental Management System (EMS), see Checkfire Ltd-EMS-RP03-Final, and there will be a requirement that all contractors working on Site will be briefed on the contents of the FPMP.
- 2.1.5 Regular Fire Prevention Plan Exercises will be carried out at a minimum frequency of annually. The frequency of exercises will be reviewed and changed depending on the results of exercises, reviews of incidents and near misses and the turnover of staff.

## **3 PROPOSED WASTE TYPES**

- 3.1.1 The list of proposed wastes at the Site is detailed in Table 1 below, together with their associated fire potential or combustibility under 'normal' operational conditions. The maximum waste throughput at the Site will be 15,080 tonnes per annum (see paragraph 1.1.10).
- 3.1.2 Fire extinguishers are required to be non-combustible and their storage before emptying and decommissioning is considered to present no risk of fire.
- 3.1.3 Fire extinguisher media, i.e. deionised water, foam and powder, is required and designed to be non-combustible and the storage of extracted media is considered to present no risk of fire.

**Table 1 Permitted Wastes**

ECW Code	Description	Fire Risk
<b>15</b>	<b>WASTE PACKAGING</b>	
<b>15 01</b>	<b>Packaging (including separately collected municipal packaging waste)</b>	
15 01 01	Paper and cardboard packaging	Medium
15 01 02	Plastic packaging	Medium
15 01 03	Wooden packaging	Medium
15 01 04	Metallic packaging	Low
15 01 05	Composite packaging	Medium
15 01 06	Mixed packaging	Medium
<b>16</b>	<b>WASTES NOT OTHERWISE SPECIFIED IN THE LIST</b>	
<b>16 05</b>	<b>Gases in pressure containers and discarded chemicals</b>	
16 05 04*	Gases in pressure containers containing hazardous substances	Non-combustible
16 05 05	Gases in pressure containers other than those mentioned in 16 05 04	Non-combustible

3.1.4 Fire extinguisher media, i.e. deionised water, foam and powder, is required and designed to be non-combustible and the storage of extracted media is considered to present no risk of fire.

3.1.5 Packaging wastes are separated from fire extinguishers prior to storage and processing and are managed as follows:

- Cardboard and plastics (including plastic wrapping) are separately baled in a baler plant, the location of which is shown on Drawing 'Indicative Site Layout and Storage', DW03. Due to the small volume of baled cardboard and plastics, they are transferred into a company van for daily removal from the Site to a local waste recycling facility in Bedwas.
- Other packaging wastes are placed in a sealed and lidded skip located on the external yard (see paragraph 1.1.9).

3.1.6 Packaging wastes are combustible wastes.

3.1.7 Dismantled fire extinguisher components, i.e. metal cylinders, brass heads, metal dip tubes, plastic dip tubes and plastic skirts, are considered to be combustible, albeit the separated metals are of low inherent risk due to their purity and absence of contrarious materials.

3.1.8 Storage arrangements for the wastes listed in Table 1 are detailed in Section 10 'Managing Waste Materials'.

## **3.2 PERSISTENT ORGANIC POLLUTANTS**

3.2.1 Foam filled fire extinguishers received at the Site may contain Aqueous Film Forming Foam (AFFF) media.

- 3.2.2 AFFF media can contain PFAS chemicals, including perfluorooctanoic acids (PFOS) and perfluorooctanoic acid (PFOA), which do not degrade easily in nature and can cause environmental damage and serious health risks. Many PFAS chemicals are classed as Persistent Organic Pollutants (POPs). These foams are currently being phased out and will be banned for use from 4th July 2025. As a worst-case scenario the Operator classifies out of date or spent or no longer required AFFF media as a hazardous waste and following emptying and treatment of the media in a carbon absorption plant, it is transferred to dedicated IBCs for removal off site to an authorised disposal facility.
- 3.2.3 In order to ensure accurate and detailed chemical characterisation of AFFF media before and after treatment, samples were subject to independent laboratory analysis in November 2024 by the Institute for Hygiene and Public Health (IHPH) in Bonn, Switzerland. Samples comprised:
- No samples of untreated AFFF media
  - No samples of foam subjected to a single phase of carbon absorption treatment;
  - No samples of foam subjected to two phases of carbon absorption treatment.
- 3.2.4 Laboratory results for AFFF media that were subjected to two phases of carbon absorption treatment were subject to WM3 assessment (Guidance on the classification and assessment of waste: Technical Guidance WM3) by MJCA Limited. WM3 assessment demonstrated that the treated foam media is non-hazardous and is not classified as a POPs waste.
- 3.2.5 Laboratory reports and WM3 assessment are maintained by the Operator and are available for inspection by authorised officers of NRW.

### **3.3 OTHER COMBUSTIBLE MATERIALS**

- 3.3.1 Combustible non-waste materials used on site comprise hydraulic and lubricating oils for maintenance works, and office consumables such as paper and cardboard etc.
- 3.3.2 The only mobile plant on site are the forklift truck, which is electric, and manual pallet trucks.
- 3.3.3 Diesel and other fuels are not stored on site.
- 3.3.4 Oils and any other potentially polluting liquids will be stored in dedicated containers within the curtilage of the building, which is sealed and fitted with impermeable concrete base. Fire extinguishers are located in the building (see below).

## **4 USING THIS FIRE PREVENTION PLAN**

### **4.1 LOCATION OF THE FIRE PREVENTION PLAN**

- 4.1.1 A copy of the FPMP will be kept in the site office, see Drawing 'Indicative Site Layout and Storage, DW03'. All staff will be made aware of its location and contents. Any contractors

working at the Site, Natural Resources Wales (NRW) staff carrying out site inspections and any emergency services personnel attending the facility will also be made aware of its location and contents. Staff will be able to access the FPMP at any time.

- 4.1.2 A second copy of the FPMP and a set of keys to the roller shutter vehicular access door will be kept inside a secure 'lockbox' located at the Site entrance. The Fire Services will be provided with the code to open the lockbox and a sign will also be installed outside the Site with the telephone contact number for Secureit (Wales) Limited, the security company that provides CCTV surveillance outside of operational hours. Secureit would provide the Fire and Rescue Service with the combination lockbox code if required. This will ensure the Fire Service can immediately gain entry to the Site and FPMP outside of operational hours.

## **4.2 TESTING THE FPMP AND STAFF TRAINING**

- 4.2.1 Staff will be trained in the contents and requirements of the FPMP and the fire prevention and mitigation measures in place. All existing and new staff will receive FPMP training and refresher talks will be held annually.
- 4.2.2 Regular fire drills will be carried out initially six monthly. Frequency will change depending on results of exercises, any incidents and turnover of staff.

## **5 WASTE ACCEPTANCE AND STORAGE**

### **5.1 WASTE PRE-ACCEPTANCE PROCEDURES**

- 5.1.1 Waste pre-acceptance procedures will ensure that only compliant waste types are accepted. Customers delivering waste to the Site will be required to provide the Operator, in advance, with all necessary information/documentation to satisfy the requirements of the Duty of Care and the Waste (England and Wales) Regulations 2011.
- 5.1.2 The Operator will check pre-acceptance documentation from suppliers to ensure that only permitted fire extinguishers and associated packaging wastes are approved for delivery to the Site. Non-permitted wastes, including nitrogen or halon filled fire extinguishers or any associated packaging waste that may be odorous or infected with vermin, flies or insects, will not be accepted. Customers will also be informed that the Site does not accept these types of fire extinguishers or odorous or infected packaging wastes. Pre-acceptance documentation will record:
- The waste description;
  - The European Waste Classification (EWC) code;
  - The source and nature of the waste, including its physical form (e.g. if containing foam, liquid or powder media);
  - Type of propellant used in the fire extinguisher (e.g. nitrogen);
  - Whether the fire extinguishers are discharged, partially discharged or unused;

- Construction material of fire extinguisher canisters, e.g. steel or aluminium or mixture of the two;
- Any special handling measures;
- Any potential risks to process safety, occupational safety and the environment;
- Details of the waste producer (name, address and contact details);
- Where the waste holder is not the producer, details of the waste holder (name, address and contact details);
- Information on the nature and variability of the waste production process and the waste;
- Age of the waste;
- Type of packaging;
- An estimate of the quantity to be received in each load and in a year.

5.1.3 Checks will also be made to establish whether the haulier is a Registered Waste Carrier or has a valid exemption from registration. Only registered carriers or those who are lawfully exempt from registration will be permitted to use the Site.

5.1.4 Waste will not be accepted if for any reason there is insufficient storage capacity available or if the Site is inadequately manned. This is to ensure that all waste is managed effectively to prevent pollution or loss of amenity.

## **5.2 WASTE ACCEPTANCE PROCEDURES**

5.2.1 Site staff will be suitably trained and will follow documented procedures. The Operator will examine the waste descriptions of incoming waste loads and the information will be checked against the previously supplied pre-acceptance documentation, six figure European Waste Catalogue Code(s) and other details on the Waste Transfer Note or Season Ticket or Hazardous Waste Consignment Note (as appropriate) and against the waste types permitted by the Environmental Permit.

5.2.2 Every delivery of waste will be recorded, detailing the date of the transaction, volume, waste type, registered carrier, Waste Transfer Note number or Hazardous Waste Consignment Note number, vehicle registration and other pertinent information against a unique reference number. It will allow for tracking of wastes, the generation of reports and waste returns, as well as providing comprehensive, auditable information.

5.2.3 The contents of waste loads will be inspected upon receipt, i.e. before storage and processing in the building. In the event that a load is non-permitted or unsuitable for receipt at the Site, e.g. if it comprises nitrogen or halon filled fire extinguishers or is a hot load, it will not be allowed to unload and will be rejected. A record of the non-permitted load will be made.

- 5.2.4 Suitable waste loads will be unloaded by site operatives using a fork-lift truck where fire extinguishers are received in containers loaded on to pallets or manually for any loads that are not received on pallets. Fire extinguishers will be stored upright in dedicated containers, each located on a pallet, according to the media they contain, i.e. foam, powder, deionised water and CO<sub>2</sub> containers will be stored separately. This will help to ensure materials do not come into contact and are processed separately, so that the cleanliness of recyclable materials is maintained and wastes are processed on a first in first out basis.
- 5.2.5 Any discrepancies found as a result of the checks detailed above will result in the vehicle being detained whilst some, or all, of the following supplementary management decisions are taken:
- Referral to a Technically Competent Person (TCP) on site;
  - Referral to the waste producer to confirm the nature of the waste load;
  - Referral to the waste carrier's base;
  - Referral to NRW;
  - Redirection of delivery vehicle off site, to a suitably authorised facility; and
  - If the waste has been unloaded in the building, removal of the waste to a secure quarantine skip or container, prior to off-site removal either to the waste producer or suitably authorised facility.

### **5.3 NON-CONFORMING WASTE (INCLUDING HOT LOADS)**

- 5.3.1 Any loads arriving at the Site which contain non-permitted waste or a significant amount of contrary material shall be rejected prior to unloading. In the unlikely event that non-permitted or hot loads or other unsuitable wastes are inadvertently unloaded at the Site, they will be re-loaded where possible. Where the vehicle has already left the Site, the non-permitted or hot load or other unsuitable wastes will be processed as follows:
- Any inadvertently received hot load will be transferred by forklift truck or pallet truck to the quarantine area, where materials will be doused with water using a hose and allowed to cool. If necessary, material will be spread out inside the quarantine area to facilitate effective cooling with water. Once sufficiently cooled, materials will be removed from the Site to a suitably authorised facility.
  - Other non-permitted or unsuitable waste will be stored in a quarantine skip or container at the Site, pending removal of the material to the waste producer or authorised facility.
- 5.3.2 Any waste materials dispatched off site to an authorised facility, will be removed in accordance with the Duty of Care. A Registered Waste Carrier will be used.
- 5.3.3 Wastes rejected from the Site will be labelled to include details of any hazards posed by the material and all information necessary to allow proper storage and segregation in a

quarantine skip or container.

- 5.3.4 Material rejected from the Site shall be issued with a record stating why, when and from which contract the waste was provided. This record shall be held on Site for NRW to inspect. In addition, the 'Record of Non-Conformance', see Appendix 1, shall be completed and the record will be held on Site.
- 5.3.5 Customers will be informed in writing if their waste is rejected. The reasons for rejection will be stated.

## **5.4 WASTE STORAGE**

- 5.4.1 Wastes that pass the pre-acceptance and acceptance procedures detailed above are stored in dedicated containers, each located on a pallet to facilitate their transfer to the relevant dismantling and processing area.
- 5.4.2 Containers measure up to a maximum of 1.1m<sup>3</sup>. They are arranged so that each one is accessible for fire fighting purposes and can be easily accessed by fork-lift truck or hand pallet truck so that they can be removed to a quarantine area in the event of a fire to ensure their safe removal from the area of any incident.
- 5.4.3 Containers are stored according to the type of fire extinguishers inside, e.g. extinguishers containing AFFF media are stored in a separate container to extinguishers containing other media (powder, deionised water, CO<sub>2</sub>). This avoids mixing any of the media types.
- 5.4.4 Fire extinguishers are typically emptied, dismantled and processed within 2 working days, although this may extend to 5 working days during busy periods. Containers will be emptied in series so that materials are processed on a first in first out basis (i.e. containers holding the longest deposited fire extinguishers will be emptied first).
- 5.4.5 The Site Manager or trained site operative will inspect waste storage as part of the daily checks to ensure materials are being suitably stored within the confines of the building and appropriate separation distances are being maintained.

## **5.5 DAILY WASTE THROUGHPUT AND STORAGE CAPACITY**

- 5.5.1 The maximum number of fire extinguishers received per day will be 3,000. As a worst-case scenario assuming all fire extinguishers are the largest type received, which each weigh 14kg, this equates to 42,000 kg or 42 tonnes per day. The maximum amount of associated packaging waste would be 14 tonnes, which equates to a maximum daily waste throughput of 66 tonnes.
- 5.5.2 As a worst-case scenario assuming fire extinguishers are stored, processed and dispatched from the Site within 5 working days, the maximum associated waste storage would be 210 tonnes plus 14 tonnes of packaging wastes (only one skip for packaging wastes is stored on site at any one time). Therefore the maximum storage capacity at any one time is 224 tonnes.
- 5.5.3 Wastes input control will be managed so that the 224 tonnes storage limit is not exceeded.

If the waste storage capacity is approaching its limit or is at risk of exceeding its limit, waste customers will be notified that they cannot deliver materials to the Site until further notified by the Operator.

## **5.6 PEDESTRIAN EMERGENCY EXIT**

5.6.1 In the event of a fire or other emergency incident, site operatives, contractors and other visitors can exit the building via the pedestrian door on the north side of the building or alternatively by the emergency exit door at the southern end of the building, see Drawing 'Indicative Site Layout and Storage, DW03'. In addition, the vehicular access roller shutter door would also be opened in the event of an emergency.

## **6 WASTE TREATMENT**

### **6.1 AFFF MEDIA**

- 6.1.1 All waste treatment activities will take place inside the building.
- 6.1.2 Disused or spent or returned fire extinguishers containing AFFF media will be emptied into dedicated IBCs, labelled for the specific receipt of such materials to avoid the risk of cross contamination.
- 6.1.3 An integral valve is located towards the base of each IBC. One end of a DN 100 hose connects to the IBC valve, whilst the other end feeds into the carbon absorption plant process inlet, via a valve which is opened at start up.
- 6.1.4 The carbon absorption plant is pre-loaded with activated carbon by the supplier. AFFF media is pumped through the unit in a downflow direction. The activated carbon absorbs PFAS chemicals, including PFAS and PFOA, removing them from the treated foam liquor. The process outlet of the unit is directed to above the height of the activated carbon bed with a siphon break at the top. This prevents the vessel draining down when flow is stopped.
- 6.1.5 The flow rate of AFFF media through the carbon absorption plant is controlled via the inlet valve and discharge valve. Pressure gauges are fitted to determine pressure at the inlet and outlet of the unit. A pressure relief valve is fitted as a safety measure, which is set to open should pressure reach or exceed 3 bar, i.e. to avoid over pressurisation of the unit.
- 6.1.6 Treated foam liquor is pumped from the carbon absorption plant, via a hose, to a clean IBC for removal off-site to an authorised facility. The cap at the top of the IBC is opened and the hose placed inside for filling. A check is made to ensure the valve near the base of the IBC is closed before filling commences. Once full, IBCs are stored on site for loading onto a HGV for removal off-site.
- 6.1.7 Once the activated carbon is saturated, a new activated carbon unit is installed to ensure effective continued use. The saturated unit is either transferred off-site to an authorised thermal destruction facility or returned to the supplier, where it is recovered off-site by thermal reactivation, for reuse. Reactivation involves treating the spent carbon in a high

temperature reactivation furnace to over 800°C. During this treatment process, the undesirable organics on the carbon are thermally destroyed. Recycling by thermal reactivation is a highly skilled process to ensure that spent carbon is returned to a reusable quality. Reactivation is undertaken by the supplier at their specialist off-site plant due to their expertise and experience in recycling large quantities of spent carbon.

- 6.1.8 Treated AFFF media has been subject to independent laboratory analysis by the Institute for Hygiene and Public Health (IHPH) in Bonn Switzerland.
- 6.1.9 Laboratory results for AFFF media that were subjected to two phases of carbon absorption treatment were subject to WM3 assessment (Guidance on the classification and assessment of waste: Technical Guidance WM3) by MJCA Limited. WM3 assessment demonstrated that the treated foam media is non-hazardous and is not classified as a Persistent Organics Pollutant (POPs) waste.
- 6.1.10 Fire extinguishers containing foam (including AFFF) are not combustible. Once the extinguishers are emptied and dismantled into their component constituents, i.e. metal cannister, brass head, plastic dip tube and plastic skirt, these parts (metals and plastics) are managed as combustible wastes. The extracted and treated foam is transferred into IBCs for storage and transfer off-site to authorised disposal facilities. The foam is required and designed to be non-combustible.

## 6.2 PROPOSED WASTE TESTING OF TREATED AFFF FOAM AND SPENT ACTIVATED CARBON MEDIA

- 6.2.1 All AFFF fire extinguishers will be delivered to the Site in accordance with the requirements of the Hazardous Waste (England and Wales) Regulations 2005. The efficiency of the carbon absorption plant to treat AFFF media has been demonstrated by laboratory testing and WM3 Assessment (see paragraph 6.1.9).
- 6.2.2 To demonstrate the ongoing efficiency of the carbon absorption plant, it is proposed to routinely test treated AFFF media circa every 4 weeks by subjecting a sample to laboratory testing for PFAS chemicals and a subsequent WM3 Assessment of the results. Samples would be analysed for the parameters shown in Table 2.

**Table 2 Determinands for Laboratory Analysis**

Chemicals for Laboratory Analysis
4:2 FTS 4H - Perfluorohexanesulfonic Acid (AFFF)
6:2 FTS 4H - Perfluorohexanesulfonic Acid (AFFF)
8:2 FTS 4H - Perfluorohexanesulfonic Acid (AFFF)
PFBA Perfluorobutaonic Acid (AFFF)
PFBS Perfluorobutanesulfonic Acid ( AFFF)
PFDA Perfluorodecanoic Acid (AFFF)
PFDoA Perfluorododecanoic Acid (AFFF)

<b>Chemicals for Laboratory Analysis</b>
PFDS Perfluorodecanesulfonic Acid (AFFF)
PFHpA Perfluoroheptanoic Acid (AFFF)
PFHpS Perfluoroheptanesulfonic Acid (AFFF)
PFHxA Perfluorohexanoic Acid (AFFF)
PFHxS Perfluorohexanesulfonic Acid (AFFF)
PFNA Perfluorononanoic Acid (AFFF)
PFNS Perfluorononanesulfonic Acid (AFFF)
PFOA Perfluorooctanoic Acid (AFFF)
PFOS Perfluorooctanesulfonic Acid (AFFF)
PFPA Perfluoropentanoic Acid (AFFF)
PFPS Perfluoropentanesulfonic Acid (AFFF)
PFTeDA Perfluorotetradecanoic Acid (AFFF)
PFTrDA Perfluorotridecanoic Acid (AFFF)
PFUnA Perfluoroundecanoic Acid (AFFF)

6.2.3 Copies of the laboratory results and WM3 Assessment would be maintained in a site log and made available for inspection by authorised officers of NRW.

### 6.3 POWDER MEDIA

6.3.1 Disused and spent or returned fire extinguisher powder is drawn by a vacuum pump through a dedicated hose that is connected to the fire extinguisher cylinder head at one end and into a 1,200 litres reception silo. The vacuum pump is fitted with a microporous filter. The system has a dedicated counter-current blowing cleaning system for the filter, valve and fire extinguisher suction unit. The main recovery inlets are operated with automatic valves controlled by start and stop mechanisms.

6.3.2 A 1 tonne capacity 'Big-Bag' is attached to the bottom of the silo and is secured by a metal clamp to ensure a tight seal and to minimise any fugitive emission of powder inside the building.

6.3.3 The silo is equipped with a level emitting alarm, which indicates when it is necessary to discharge into the 'Big Bag', via an automatic discharge valve. Once the bag is full, it is sealed at the top opening and transferred via a fork-lift truck to the loading area inside the building. 'Big Bags' are loaded onto curtain sided lorries or other suitable vehicles for transfer off-site to an authorised recycling facility, where the material is used for fertiliser manufacture.

6.3.4 Fire extinguishers containing powder are not combustible. Once the extinguishers are emptied and dismantled into their component constituents, i.e. metals and plastics, these components are managed as combustible wastes. The extracted and bagged powder is transferred off-site to an authorised recycling facility. The powder is required and designed

to be non-combustible.

## 6.4 DEIONISED WATER MEDIA

- 6.4.1 Fire extinguishers containing deionised water media are emptied into dedicated and labelled IBCs, prior to discharge to foul sewer in accordance with a Trade Effluent Discharge Consent issued by Welsh Water. The Operator ensures that only dedicated IBCs are used for the receipt, storage and discharge of deionised water to foul sewer, thereby avoiding any potential risk of cross contamination from other media, such as foam.
- 6.4.2 Fire extinguishers containing deionised water are not combustible. Once the extinguishers are emptied and dismantled into their component constituents, i.e. metals and plastics, these components are managed as combustible wastes. Deionised water discharged to foul sewer is non-combustible.
- 6.4.3 The discharge point to foul sewer is shown on Drawing 'Site Drainage', DW04. It is marked as FW1: Foul Sewer Discharge Point. This is the location which forms part of the Trade Effluent Discharge Consent.

## 6.5 CARBON DIOXIDE FIRE EXTINGUISHERS

- 6.5.1 Disused or spent or returned CO<sub>2</sub> extinguishers are received as part of a take back scheme from customers, where they are bulked up in containers inside the building prior to transfer off-site to an authorised facility for emptying and discharge of spent or no longer required CO<sub>2</sub> gas, reconditioning of the cylinder and cylinder head and refilling with new CO<sub>2</sub> media. The reconditioned CO<sub>2</sub> fire extinguishers are suitable for reuse, with a design life of 10 years.
- 6.5.2 The storage of CO<sub>2</sub> fire extinguishers on site prior to their transfer off-site to an authorised processing facility is non-combustible.

## 6.6 FIRE EXTINGUISHER PROPELLANT

- 6.6.1 Fire extinguishers contain a trace amount of non-combustible propellant, either:
- Pressurised air;
  - Nitrogen;
  - Nitrogen with a small amount of helium additive, which is used to detect any leakage at the manufacture stage.
- 6.6.2 Fire extinguishers manufactured by Checkfire Ltd use nitrogen with a small amount of helium additive.
- 6.6.3 Due to the trace amounts of propellant used in fire extinguishers, it is not practicable or feasible to capture this for recycling or reuse. Trace quantities of propellant are released inside the building when full or partially full fire extinguishers are manually emptied and dismantled by site operatives. The building is well ventilated and the release of non-combustible propellant presents no risks of fire or to site operatives or the environment.

6.6.4 CO2 fire extinguishers are not emptied or discharged at the Site.

## **6.7 RECYCLING OF CYLINDER AND COMPONENTS**

6.7.1 Once fire extinguishers are emptied, they are dismantled into their component metal and plastic parts for recycling by trained site operatives. All dismantling operations are undertaken inside the building.

6.7.2 The brass head cap is removed and is placed in a sealed container located on a pallet to facilitate removal and loading into a lorry for off-site removal to an authorised recycling facility.

6.7.3 Metal cylinders and metal dip tubes are transferred to an inclined conveyor, which feeds into the top of a 40 cubic yard roll on: roll off container. Once the container is full it is sheeted and transferred off site to an authorised scrap metal recycling facility.

6.7.4 Plastic skirts and plastic tubes are placed in a sealed container located on a pallet to facilitate removal and loading into a lorry for off-site removal to an authorised recycling facility.

6.7.5 The dismantling, sorting and separation of fire extinguisher cylinders will enable high rates of recycling to be achieved.

## **6.8 RECYCLING OF PACKAGING WASTES**

6.8.1 Packaging waste associated with the supply of fire extinguishers to customers and the return of disused or spent or unwanted units by them, is sorted, separated and recycled on site. Cardboard and plastic packaging are separately fed to a small compactor unit inside the building, prior to being transferred directly into an enclosed vehicle for removal off-site to an authorised facility. Only small quantities of cardboard and plastic waste are processed on site and these are taken to a nearby recycling facility on a typically daily basis.

6.8.2 Other packaging wastes such as broken pallets etc are stored in a sealed and lidded skip for removal off-site to an authorised facility.

## **6.9 SITE PLAN**

6.9.1 The site layout and fire mitigation infrastructure are shown on Drawing 'Indicative Site Layout and Storage', DW03. A copy of the drawing is included with this FPMP.

## **6.10 FIRE ENGINE ACCESS**

6.10.1 In the event of an emergency fire incident, fire engines would access the Site via Sir Alfred Owen Way on the Pontygwindy Industrial Estate. The Site is located to the immediate south of Sir Alfred Owen Way. Fire engines can turn directly off the road onto the external yard and to the roller shutter vehicular access doors. Fire engines would use this entrance to gain access to the building if necessary.

- 6.10.2 The Fire Services will be provided with the code to open a secure lock box located at the Site entrance. The lock box will contain a set of keys to the roller shutter access door and a copy of the FPMP. A sign will also be installed outside the Site entrance with the telephone contact number for Secureit (Wales) Limited, the security company that provides CCTV surveillance outside of operational hours. Secureit are also able to provide the Fire and Rescue Service with the combination lock box code if required. This will ensure the Fire Service can immediately gain entry to the Site and FPMP if a fire occurs outside of operational hours.

## 7 SENSITIVE RECEPTORS

- 7.1.1 A review of potentially sensitive receptors has been undertaken using the hierarchy of hospitals, schools, childcare facilities, elderly housing and convalescent facilities (i.e. areas where inhabitants are more vulnerable to the adverse effects of exposure to smoke), residential areas, commercial and industrial premises, major infrastructure and protected sites such as SSSIs, SPAs and SCAs are also considered.
- 7.1.2 In terms of predicted exposure risk, levels have been determined via a qualitative assessment which evaluates the likelihood of exposure to smoke emissions based on the receptors' proximity to the Site and the location of the sensitive receptors in regard to the prevailing wind direction as shown in Figure 1. Statistics on wind direction and wind speed are based on observations taken from the nearest weather station at Caerphilly (circa 1.65 km south southeast of the Site). This indicates that prevailing winds originate predominantly from the west and southwest (statistics are based on observations taken from the weather station between April 2013 and April 2025). The wind rose data is shown in Figure 1.
- 7.1.3 The nearest residential properties are circa 145m west on Pantycelyn Drive, 150m west on Herbert Drive, 160m southwest on Lewis Drive, 165m south southwest on Howard Drive, 200m southwest on Dyfed Drive and 200m west on Davies Drive. The nearest domestic properties east of the Site are on Pontygwindy Road, circa 215m from the facility.
- 7.1.4 There is one European Site (i.e. Special Protection Area (SPA), Special Conservation Area (SAC) or Ramsar Site) within 10km of the Site, namely Cardiff Beech Woods SAC, which is circa 4,190m south of the facility.
- 7.1.5 There are two Sites of Special Scientific Interest (SSSI) within a 2km radius of the Site, namely Llanbradach Quarry SSSI, circa 983m to the north northwest and Gwaun Gledyr SSSI, circa 1,700 to the southwest of the facility.
- 7.1.6 There are nine Sites of Importance for Nature Conservation (SINCs) within a 2km radius of the Site, namely:
- Nant yr Aber SINC, circa 344m south southeast of the facility;
  - Coed y Brain, Penyrheol SINC, circa 532m northwest of the facility;
  - Mynydd Dimlaith and Cwm-y-Bwch, southeast of Llanbradach SINC, circa 1,036m

north northeast of the facility;

- Rhymney River SINC, circa 1,187m east of the facility;
- Cwm yr Aber, South of Abertridwr SINC, circa 1,316m southwest of the facility;
- Mynydd Eglwysilan, north of Senghenydd SINC, circa 1,736m northwest of the facility;
- Gypsy Lane Wetland, south of Groeswen SINC, circa 1,792m southwest of the facility;
- Caerphilly/ Machen Disused Railway, east of Trethomas SINC, circa 1,848m southeast of the facility;
- Coed y Maerdy, east of Caerphilly SINC, circa 1,988m southeast of the facility.

7.1.7 There are Areas of Ancient Semi Natural Woodland circa 45m west southwest, 255m southwest and 340m southeast of the Site, with a belt of Ancient Woodland (Unknown Category) circa 255m east of the facility.

7.1.8 There are three Scheduled Monuments within a 2km radius of the Site ([https://datamap.gov.wales/maps/new?layer=inspire-wg:Cadw\\_SAM#/](https://datamap.gov.wales/maps/new?layer=inspire-wg:Cadw_SAM#/)):

- Caerphilly Iron Furnace, circa 1,184m southwest of the facility;
- Caerphilly Castle, circa 1,186m south of the facility;
- Cornish Type Engine House, Bryngwn Colliery, circa 1,311m northeast of the facility.

7.1.9 There are no Marine Special Protection Areas, National Nature Reserves, Biosphere Reserves or Local Nature Reserves within 2km radius of the Site.

7.1.10 There are no National Parks or Areas of Outstanding Natural Beauty (AONBs) within 10km of the Site.

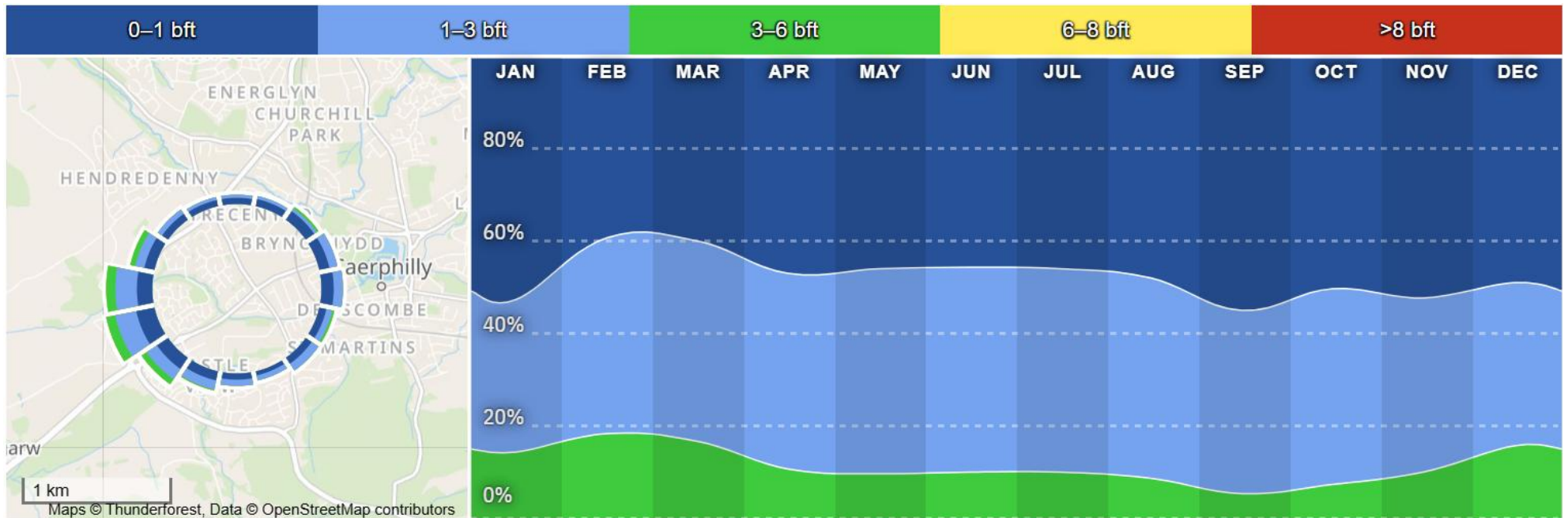
7.1.11 The Site is not located within 3km of a groundwater Source Protection Zone.

7.1.12 The Groundsure Report for the Site shows that there are four groundwater abstractions within 2km, at distances of 1,763m, 1,862m, 1,923m and 1,947m from the Site. There are no active surface water abstractions within 2km of the Site. At these distances, groundwater and surface water abstractions are not considered further in this FPMP.

7.1.13 Sensitive receptors at potential risk from fire and any smoke emissions at the Site are shown on the Drawing 'Sensitive Receptors', DW02 and are listed in Table 3 below.

7.1.14 Due to the high number of sensitive receptors, not all residential properties and local businesses etc are individually assessed, as there are several thousand locations within the assessment distance. Table 3 assesses the most proximate receptors within each category to provide information on the highest level of risk that would be encountered. Where mitigation measures demonstrate that the level of fire or smoke risk is low at the selected sites, it can be assumed that risk would also be low at more distant sites.

**Figure 1: Monthly Wind Direction, Strength Distribution and Windrose**



**Table 3 Assessment of Fire and Smoke Risks at Sensitive Receptors**

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
<b>Medical</b>					
Caerphilly Children’s Centre	690m W	Low	Low/Moderate	Receptor is upwind of the prevailing wind direction and is a significant distance from the Site. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Courthouse Medical Centre	721m SE	Low	Low/Moderate	The receptor is relatively distant from the site (over 500m). Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
<b>Residential Care Home</b>					
Glyn Derw	440m S	Low/Medium	Low/Medium	Located upwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Brodawel Resource Centre	484m SW	Low/Medium	Low/Medium	Located upwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Ty Gwilym	489m WSW	Low/Medium	Low/Medium	Located upwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
<b>Schools and Colleges</b>					
Ysgol Gyfun Cwm Rhymni	688m SSE	Low	Low/Moderate	Relatively distant from the Site at over 500m. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Plas Y Felin (Primary School)	763m S	Low	Low/Mild	Located upwind of the prevailing wind direction and distant from the Site at over 750m. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Ysgol Gymraeg Caerffili (Primary School)	907m SSE	Low	Low/Mild	Relatively distant from the site (over 750m). Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
Little Moons Bilingual Preschool	972m WSW	Low	Low/Mild	Located upwind of the prevailing wind direction and distant from the site (over 750m). Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
<b>Residential Properties</b>					
Pantycelyn Drive	145m W	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Herbert Drive	150m W	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Lewis Drive	160m SW	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Howard Drive	165m SSW	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Dyfed Drive	200m SW	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Davies Drive	200m W	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
				measures detailed in this FPMP are used to prevent any significant risks to residents.	
Pontywindy Road	215m E	Medium	Medium	Although the residential properties are located upwind of the Site, they are in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to residents.	Low
Pontypandy Lane	280m ESE	Low/Medium	Low/Medium	Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Heol Pwllypant	304m NNW	Low/Medium	Low/Medium	Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Pontypandy Lane	306m SE	Low/Medium	Low/Medium	Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Gruffydd Drive	317m SW	Low/Medium	Low/Medium	Located upwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Central Street	344m N	Low/Medium	Low/Medium	Located downwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Dylan Drive	355m SSW	Low/Medium	Low/Medium	Located upwind of the prevailing wind direction. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
<b>Industrial and Commercial</b>					
Ecosmart (Wales) Limited	Adjacent W	High	High	The company is located adjacent to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Magnera Composite Fibres	Adjacent S	High	High	The company is located adjacent to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
Pronto Hire Limited	15m N	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Pontygwindy Café	15m NE	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Fit Fit Garden	25m E	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Universal Resource Trading Limited	26m NW	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Saber Computer Services Limited	27m NE	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
The Mortgage Team Limited (Douglas House)	32m W	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
SJR Property Holdings Limited (Douglas House)	32m W	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Ram Plant Limited (Douglas House)	32m W	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
Ocupy Holdings Limited	32m W	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
				mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	
JR Industries	75m NW	High	High	The company is in close proximity to the Site and there is the potential for significant fire and smoke impacts. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the neighbouring business.	Low
<b>Railway</b>					
Rail Line	240m W	Low/Mild	Low/Mild	Upwind of the prevailing wind direction. Fire and smoke are unlikely to cause any significant impacts to railway infrastructure at this distance, and trains will quickly travel beyond the proximity of the Site, meaning exposure time is likely to be very short. Rail personnel maintaining the line in proximity to the Site would have longer periods of occupancy. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the railway line.	Low
Energlyn and Churchill Park Railway Station	492m SW	Low	Low/Mild	Upwind of the prevailing wind direction. Smoke and fire are unlikely to cause any significant impacts to railway infrastructure or people at this distance. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the railway station.	Low
<b>Surface Water</b>					
Nant Yr Aber	342m SE	Medium/High	Medium/High	In the event of a fire incident, the Fire and Rescue Service would likely use foam or water to combat the fire. The surface water drain on the external yard drains to the Nant yr Aber, which in turn flows into the River Rhymney. The Operator has installed an internal drain to a blind concrete sump inside the building, behind the roller shutter vehicular access door and pedestrian access door. This measure is used to prevent any inadvertent escape of liquid from inside the building to the external environment. In addition, a manual cut off valve has been installed in the external drain, which would be closed in the event of a fire incident to prevent any fire water draining to the Nant yr Aber.	Low
<b>Agricultural Land</b>					

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
Agricultural Land	490m N	Low	Low	Although the nearest agricultural land is downwind of the prevailing wind direction, smoke is considered unlikely at this distance to cause significant impacts to arable crops or grazing animals. The use of control measures detailed in this FPMP will be used to prevent any significant risks to agricultural land.	Low
<b>Ancient Woodland</b>					
Ancient Semi Natural Woodland	45m SW	High	High	Fire could potentially spread to vegetation beyond the southern boundary of the Site and to the ancient semi-natural woodland. Therefore it is important that the mitigation measures detailed in this FPMP are used to prevent any significant risks to the woodland.	Low
Ancient Semi Natural Woodland	255m SW	Low	Low/Mild	Smoke and particulate from a fire may adversely effect photosynthesis, as well as potentially impacting fauna associated with the woodland. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the woodland.	Low
Ancient Woodland	255 E	Low	Low/Mild	Smoke and particulate from a fire may adversely effect photosynthesis, as well as potentially impacting fauna associated with the woodland. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the woodland.	Low
Ancient Semi Natural Woodland	340m SE	Low	Low/Mild	Smoke and particulate from a fire may adversely effect photosynthesis, as well as potentially impacting fauna associated with the woodland. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the woodland.	Low
<b>Designated Habitat Sites</b>					
Llanbradach Quarry SSSI (Geological SSSI)	983m NNW	Very Low	Very Low	Geological SSSI is distant from the Site. Geology is very unlikely to be significantly impacted by smoke.	Very Low
Gwaun Gledyr SSSI	1,700m SW	Very Low	Very Low	Upwind of the prevailing wind direction and distant from the Site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the SSSI.	Very Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
Nant yr Aber SINC	344m SSE	Low/Moderate	Low/Mild	At this distance it is considered unlikely that any smoke emissions from the Site would have a significant impact on the SINC. Smoke and particulate is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the t.SINC	Low
Coed y Brain, Penyrheol SINC	532m NW	Low	Low/Mild	Relatively distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. The use of control measures detailed in this FPMP will be used to prevent any significant risks to the SINC.	Low
Mynydd Dimlaith and Cwm-y-Bwch SINC	1,036m NNE	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Rhymney River SINC	1,187m E	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Cwm yr Aber, South of Abertridwr SINC	1,316m SW	Very Low	Very Low	Upwind of the prevailing wind direction and distant from the Site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Mynydd Eglwysilan, north of Senghenydd SINC	1,736m NW	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Gypsy Lane Wetland, south of Groeswen SINC	1,792m SW	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Caerphilly/ Machen Disused Railway SINC	1,848m SE	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
Coed y Maerdy, east of Caerphilly SINC	1,988m SE	Very Low	Very Low	Distant from the site. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance.	Very Low
<b>Scheduled Monuments</b>					
Caerphilly Iron Furnace	1,184m SW	Very Low	Very Low	Scheduled monument is upwind of the prevailing wind direction and distant from the Site. Smoke is unlikely to cause any significant impacts to the receptor.	Very Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitigation
Caerphilly Castle	1,186m S	Very Low	Very Low	Scheduled monument is upwind of the prevailing wind direction and distant from the Site. Smoke is unlikely to cause any significant impacts to the receptor.	Very Low
Cornish Type Engine House, Bryngwn Colliery	1,311m NE	Very Low	Very Low	Scheduled monument is upwind of the prevailing wind direction and distant from the Site. Smoke is unlikely to cause any significant impacts to the receptor.	Very Low

## **8 MANAGE COMMON CAUSES OF FIRE**

### **8.1 ARSON**

- 8.1.1 The building is fully secured. The roller shutter vehicle access door and pedestrian entrance and emergency exit doors are securely locked outside of operational hours. A comprehensive CCTV security system will be installed to provide complete coverage of the Site. This will ensure a high standard of site security is maintained.
- 8.1.2 The high standard of site security to prevent and detect any attempts at unauthorised entry minimises the potential for arson attacks or vandalism.

### **8.2 VISITORS AND CONTRACTORS**

- 8.2.1 All visitors and contractors will be made aware of the location and contents of the FPMP. Health and Safety induction training for visitors and contractors will include emergency measures for exiting the building during a fire incident or fire alarm, details of the mitigation measures in place and the location of the emergency muster point, which is shown on Drawing 'Indicative Site Layout and Storage', DW03.

### **8.3 IGNITION SOURCES**

- 8.3.1 Waste will not be burnt at the Site and there will be no waste incinerator plant or industrial heaters.
- 8.3.2 The likelihood of any hot works being undertaken on Site is low. Any ignition sources, such as hot works, will be kept at least 6m away from combustible wastes.

### **8.4 SELF COMBUSTION**

- 8.4.1 Fire extinguishers and fire extinguisher media are required and designed to be non-combustible. The waste types and processing activities undertaken on site will not give rise to chemical oxidation. The Site does not accept waste chemicals, laboratory chemicals or other potentially incompatible materials that may result in chemical or thermal reactions etc.
- 8.4.2 The Site will operate on a first in, first out basis. Fire extinguishers will be stored, processed and dispatched from the facility within 5 working days. The risks of self combustion from the component parts of fire extinguishers after emptying and dismantling, i.e. metal cylinder, brass head, plastic dip tubes and skirts is considered negligible. Self combustion risks from associated packaging wastes, e.g. carboard, plastic wrapping, metallic packaging etc is very low due to the short storage times on site.

### **8.5 PLANT AND EQUIPMENT FAILURE**

- 8.5.1 The Site's preventative maintenance procedures require that all plant and equipment is assessed for fire risk. Checks will be programmed and records will be retained with a log of

maintenance carried out.

8.5.2 The only mobile plant on site is the forklift truck, which is electric. The forklift truck, carbon absorption plant, baler, bagging plant, inclined conveyor and other equipment will be regularly inspected for electrical faults. When not in use the forklift truck will be stored away from other equipment and any combustible waste materials, such as packaging wastes. The location of the overnight parking area is shown on Drawing 'Indicative Site Layout', DW03.

## 8.6 SMOKING POLICY

8.6.1 The Site will operate a strict no smoking policy.

## 8.7 HOT WORKS

8.7.1 In the unlikely event that hot works are required on site, a hot work management system will be operated. This will apply to staff and contractors. A Fire Watch will be carried out after hot works are finished and specifically revisited at the end of the working shift by staff trained in the assessment of risks associated with hot works.

8.7.2 All hot work activities conducted by employees or contractors on site will be controlled in accordance with the Hot Works Management System detailed in Table 4 below.

**Table 4 Hot Works Management System**

<b>Item No</b>	<b>Source</b>	<b>Fuel or Ignition (F or I)</b>	<b>Preventative Measure</b>	<b>Risk Coding</b>
1	Hot Works in the form of welding or cutting carried out during maintenance tasks.	I	1) Fire watcher should be appointed 2) Suspension of work 90 mins before shift end	HIGH
2	Electrical fire from fixed installation.	I	1) Inspection and certification of building electrics	MEDIUM
3	Spark generated by a saw or grinder used in connection with maintenance task.	I	1) Fire watcher should be appointed 2) Suspension of work 90 mins before shift end	HIGH
4	Fuel tank etc	F	1) There is no fuel storage or fuel storage tank on site	LOW
5	Smoking on Site	I	1) Smoking strictly prohibited on site. 2) Site management to 'Police' 3) No Smoking signage exists at strategic points to inform visiting drivers	MEDIUM
6	Arson	I	Site securely locked outside of operational hours and CCTV cameras will be installed to provide constant surveillance	LOW
7	Electrical fault from 'Rogue' portable appliance	I	1) All portable appliances will be subject to PAT test	MEDIUM

<i>Item No</i>	<i>Source</i>	<i>Fuel or Ignition (F or I)</i>	<i>Preventative Measure</i>	<i>Risk Coding</i>
8	Incompatible product on site causes chemical reaction resulting in ignition	I	1) The site does <u>not</u> accept waste chemicals, laboratory chemicals or other potentially incompatible materials that may result in chemical or thermal reactions. 2) Strict waste acceptance procedures and visual inspection in place.	<b>LOW</b>

8.7.3 Any hot work activities will be controlled by a Hot Works Permit (see Appendix 2) and a controlled fire watch will be carried out for at least 30 minutes after the hot work activity has ceased and the area will be specifically revisited periodically throughout the working day and recorded in the fire risk section of the Site Inspection Form, see Appendix 3.

## 8.8 INDUSTRIAL HEATERS

8.8.1 There will be no industrial heaters on site.

## 8.9 HOT EXHAUSTS AND ENGINE PARTS

8.9.1 All waste storage and processing areas on site will be subject to periodical Fire Watch checks by the Site Manager or other suitably trained operative. As a minimum Fire Watch checks will be undertaken at the start of end of each working day. Each check is anticipated to take a minimum of 30 minutes.

8.9.2 All employees will receive fire awareness training.

8.9.3 The forklift truck and plant and equipment are checked for dust build up or fluff settled onto electrical parts. Visual inspections will be made for the emission of any hot sparks from vehicle exhausts on entering and exiting the Site. In the event of dust or fluff build up, engines and exhausts will be allowed to cool and then swept or air blown to remove the material. Removed dust and fluff deposits will then be swept up and suitably disposed of.

8.9.4 All mobile plant when not in use or unmanned will be switched off and parked in the Plant Parking Area, see Drawing 'Indicative Site Location and Layout, DW03'. Appropriate separation distances will be maintained between mobile plant and waste storage areas, other combustible materials and equipment.

## 8.10 DAMAGED OR EXPOSED ELECTRICAL CABLES

8.10.1 Site operatives are required to report any damaged or exposed cables to the Site Manager or, in his absence, the Operations Director. Any plant or equipment with damaged cables will not be used and will be switched off until repaired or replaced by an electrician or other suitably qualified person.

8.10.2 Routine plant maintenance will be carried out in accordance with the manufacturer's or supplier's specifications. Maintenance checks will include inspection of electrical cables, with appropriate repair or replacement as required. All electrical equipment will be PAT

tested, as required.

## **8.11 ELECTRICAL FAULTS**

8.11.1 All electrical work on site will be carried out by fully certified and qualified electricians and will comply with the relevant British Standards for design and installation of electrical equipment. Detailed operational manuals for any equipment will require equipment to be checked and maintained as part of a planned maintenance regime. In particular, the forklift truck and equipment will be regularly inspected for electrical faults, including damaged or exposed electrical cables.

## **8.12 REACTIONS BETWEEN WASTES**

8.12.1 The Site does not accept waste chemicals, laboratory chemicals or other potentially incompatible materials that may result in chemical or thermal reactions etc.

## **8.13 HOT LOADS INADVERTENTLY DELIVERED TO THE SITE**

8.13.1 Any hot loads inadvertently delivered to the Site will be detected by site staff either during delivery or deposit into the building and visual inspection. Hot loads will be quenched with water and then separated from other wastes using mechanical plant. The quenched materials will then be transferred to the quarantine area and further quenched with water, as appropriate. A hosepipe will be used to apply cooling water and rapidly reduce the temperature where required. There will be adequate hose reel length available from the mains supply if necessary to reach all waste storage bays and containers and the quarantine area.

8.13.2 The Site does not receive incinerator bottom ashes or fly ashes or other wastes that are intrinsically hot.

## **8.14 BUILD-UP OF LOOSE COMBUSTIBLE WASTE, FLUFF AND DUST**

8.14.1 The Site operates a first in first out policy to ensure wastes are stored, processed and dispatched from the facility within a maximum period of 5 working days from initial receipt. As part of this policy, waste storage areas are totally emptied, including the corners, to ensure all waste, fluff and debris is removed. This prevents the potential for wastes, dust and fluffs to accumulate and build-up.

8.14.2 Typically, the Site will be swept during the course of the working day and at the end of the working day to ensure the facility is left clean and tidy both during and outside of operational hours. Site sweeping will be carried out by site operatives under the supervision of the Site Manager, the Operations Director or other suitably trained person.

8.14.3 The trigger for additional sweeping and cleaning will be during periods of dry weather, which may give rise to dusty conditions, during daily site inspections if noticeable waste, dust or fluff accumulation is present or if there is the potential for associated emissions from the Site.

## **8.15 TRAMP METAL**

- 8.15.1 The Site only accepts fire extinguishers and associated packaging wastes. Emptied and disassembled fire extinguishers are manually separated into their component parts. Brass is stored in a sealed container, plastic dip tubes and skirts are stored in dedicated containers and empty cylinders and other metal components (i.e. metal dip tubes) are manually transferred to an inclined conveyor, which feeds into a 40 cubic yard skip. Therefore, the risk of tramp metal is very low.
- 8.15.2 All conveyor systems have been fitted with material containment guards and conveyor belt skirting to prevent the ingress of process materials into equipment moving parts.
- 8.15.3 All plant and equipment are subjected to regular maintenance, inspection and cleaning regimes. Suitably trained personnel carry out inspection and testing of superfluous materials as part of quality control checks. High levels of superfluous materials may indicate an issue with feedstock or plant, which is then raised as a Non-Conformance with details and mitigation measures recorded on a Non-Conformance Report, see Appendix 1. An investigation is undertaken to establish the root cause of the Non-Conformance, with mitigating measures implemented as a matter of urgency.

## **8.16 BATTERIES**

- 8.16.1 The Site does not accept waste batteries. Any batteries that are inadvertently accepted at the Site would be placed in a secure quarantine container for removal of site to an authorised facility.

## **8.17 BATTERIES IN ELVS**

- 8.17.1 The Site does not accept ELVs nor depolluted car shells.

## **8.18 CYLINDER STORAGE**

- 8.18.1 The only cylinders received on site are the casing of fire extinguishers. In the unlikely event of any other type of cylinder being stored on site, it would be located in a dedicated cage.

## **8.19 LEAKS AND SPILLAGES OF OILS AND FUELS**

- 8.19.1 Any leaks or spillages of potentially polluting or flammable liquids such as oil and diesel will be cleaned up using dedicated spill kits or absorbent material. Spillage procedures are included in Appendix 4.
- 8.19.2 Contaminated spill kits and absorbent will be stored in a sealed container for authorised disposal off site. Spill kit and absorbent material storage locations are shown on Drawing 'Indicative Site Layout and Storage', DW03.
- 8.19.3 Leaks and spillages will be treated as a priority incident and upon detection cleaning measures will be implemented immediately. Repairs will be made to any tanks, containers, pipework etc that are found to be leaking.

## **8.20 FIRE WATCH PROCEDURES**

- 8.20.1 At the beginning and end of the working day a Fire Watch will be carried out. It is anticipated that checks will take a minimum of 30 minutes. All waste storage and processing areas on site will be subject to the Fire Watch checks.
- 8.20.2 All site staff will receive fire awareness training.
- 8.20.3 Fire Watch checks will be assessed to see if any improved operational procedures can be invoked to reduce risks. Fire watch reviews will also be undertaken out of hours to check for post operational heating issues and procedures will be reviewed after assessment.

## **8.21 FIRE ALARM**

- 8.21.1 A fire alarm system complying with BS 5839 part 1 has been installed at the Site. This comprises a mains analogue addressable fire alarm control panel complying with BS EN 54-2, which has been installed on entry to the building. Additionally, audible warning is provisioned by the installation of sounders. Both visual and audible warnings are triggered on activation of the fire detection system.

## **8.22 HOT AND DRY WEATHER**

- 8.22.1 All wastes will be processed inside a fully enclosed building, which will prevent direct exposure to sunlight. During periods of hot or dry weather, water will be applied to waste stockpiles, using a hose, to reduce temperatures, if required. In such circumstances the water will be applied to ensure that all materials within the core of the stockpile (and not just external edges) are doused with cooling water.

## **8.23 ESCAPE OF SMOKE FROM THE BUILDING IN THE EVENT OF A FIRE**

- 8.23.1 In the event of a fire, smoke would escape from the building via a series of vents in the roof. In addition, the roller shutter vehicular access doors would be opened to allow heat and smoke to escape.

# **9 STORAGE TIMES AND PREVENTION OF SELF COMBUSTION**

## **9.1 WASTE STORAGE TIMES**

- 9.1.1 The Site operates a first in first out policy to ensure wastes are stored, processed and dispatched off-site within a maximum period of 5 working days. This ensures efficient waste stockpile rotation and that materials do not accumulate for extended periods of time that can result in excessive heat generation or the build-up of hot spots within the waste mass. Maximum waste stockpile heights will not exceed 3.6m, i.e. the height of 3 stacked IBCs, each on a pallet. Dedicated IBCs will be used for the storage of untreated foam, treated foam and deionised water. All foam and deionised water will arise from fire extinguisher media and is non-combustible.

## **9.2 METHODS USED TO RECORD AND MANAGE WASTE STORAGE**

- 9.2.1 Every delivery of waste to the Site will be recorded, detailing the date of the transaction, type and size of fire extinguishers, registered carrier details, Waste Transfer Note or Hazardous Waste Consignment Note details and other pertinent information against a unique reference number. This allows for the tracking of wastes from arrival on site to dispatch, the generation of reports and waste returns, as well as providing comprehensive, auditable information.
- 9.2.2 Fire extinguishers and fire extinguisher media are required and designed to be non-combustible. Typically, storage areas will be completely emptied and swept (including the corners) every 2 working days, although this may increase to 5 working days during busy periods. Checks are made during daily site inspections by the Site Manager or other suitably trained person to ensure all storage areas are emptied and cleared completely, so that materials are not allowed to accumulate over extended periods of time.

## **9.3 MONITOR AND CONTROL TEMPERATURE**

- 9.3.1 As the incoming waste will only be stored for a maximum period of 5 working days prior to processing and dispatch from the Site, it is highly unlikely that spontaneous ignition of waste will occur on site. Notwithstanding this as a worst-case scenario it is proposed that a trigger level of 57°C will be used on site. This would give the Operator an early warning that temperatures may approach 68°C, which is the lowest critical temperature determined for activation of the fire suppression system.
- 9.3.2 If the trigger level of 57°C is reached in any waste container, the material would be separated out, reduced in height and doused with cold water throughout to reduce its temperature. Water would be applied using a hose and care taken to ensure that all materials are cooled.
- 9.3.3 It is proposed that a thermal imaging camera is used to monitor the internal temperature of waste containers. As site operations include the storage of disassembled and separated metal fire extinguisher cylinders and dip tubes in a 40 cubic yard container and brass heads in 1.1m<sup>3</sup> containers, it is not feasible to insert a temperature probe into the waste mass.
- 9.3.4 The thermal imaging camera will be serviced and calibrated every 12 months by a suitable accredited company.

## **9.4 BALED WASTES**

- 9.4.1 A small baler/compactor unit is located at the Site. It will be used to separately bale cardboard and plastic wrapping and other plastic packaging wastes associated with the supply or return of fire extinguishers from customers. Bale dimensions are 1m x 1m x 1m.
- 9.4.2 Due to the small quantities of baled cardboard and plastic packaging produced on site, bales are immediately transferred to a company van for transfer to a local, authorised recycling facility in Bedwas.

## **9.5 DEALING WITH HOT WEATHER AND HEATING FROM SUNLIGHT**

- 9.5.1 As all wastes will be unloaded, stored and processed inside the building and separated packaging wastes are stored in a sealed and lidded skip, there is no direct heating from sunlight. In addition, water will be applied to wastes, using a hose, during hot weather to reduce temperatures where required.

## **10 MANAGING WASTE MATERIALS**

### **10.1 STORING WASTE MATERIALS IN THEIR LARGEST FORM**

- 10.1.1 The purpose of the Site is to decommission and disassemble out of date, spent or no longer required foam, deionised water and powder fire extinguishers and to bulk up and transfer CO<sub>2</sub> fire extinguishers to an authorised off-site facility for emptying of gas media, refilling with new media and reconditioning of the cannister for supply to customers. Fire extinguishers are manually disassembled into their component parts (metal, brass, plastics) for recycling. They are not shredded or cut up on site.
- 10.1.2 Fire extinguishers are stored in their largest form before being emptied and disassembled for recycling.

### **10.2 MAXIMUM PILE SIZES**

- 10.2.1 Waste stockpile sizes are shown in Table 5 below and locations are shown on Drawing 'Indicative Site Layout and Storage', DW03.
- 10.2.2 The maximum height of waste storage on site will be 3 IBCs. Each IBC will be located on a pallet to give a maximum total height of 3.6m.
- 10.2.3 The IBCs will contain either untreated fire extinguisher foam, treated fire extinguisher foam (i.e. with POPs, including PFAS, removed) or deionised water. All of these fire extinguisher media are non-combustible.

### **10.3 WASTE STORED IN CONTAINERS**

- 10.3.1 Fire extinguisher foam, treated foam and deionised water will be stored in separate and dedicated IBCs to avoid any risk of cross contamination. IBCs will be labelled with the name of the media they contain to identify their contents.
- 10.3.2 Fire extinguisher powder will be stored in 1 tonne 'big bags'.
- 10.3.3 Once fire extinguisher media is emptied into dedicated IBCs or 1 tonne 'big bags', the fire extinguisher cylinder will be manually disassembled by site operatives. Separated plastic dip tubes, plastic skirts and brass heads will be placed into separate and dedicated containers, each up to 1.1m<sup>3</sup> capacity.
- 10.3.4 Fire extinguisher cylinders and metal dip tubes will be transferred to a 40 cubic yard container via an inclined conveyer.

- 10.3.5 Baled cardboard and plastic will be transferred immediately to a vehicle for off-site removal to an authorised recycling facility. Bales will not be stored on site.
- 10.3.6 Other packaging wastes will be stored in a dedicated sealed and lidded skip, prior to off-site transfer to an authorised recycling facility.
- 10.3.7 There will be no storage of wastes in open stockpiles or loose in bays.
- 10.3.8 The capacity of an IBC will be 1,000 litres.

#### **10.4 SEPARATION DISTANCES**

- 10.4.1 Fire extinguishers are required and designed to be non-combustible and their storage before emptying and decommissioning is considered to present no risk of fire.
- 10.4.2 Fire extinguisher media, i.e. deionised water, foam and powder, is required and designed to be non-combustible and the storage of extracted media is considered to present no risk of fire.
- 10.4.3 Fire extinguishers will be emptied and disassembled in the fire extinguisher cannister dismantling area, see Drawing 'Indicative Site Layout and Storage', DW03. This area has to be in close proximity to:
  - The powder bagging plant, as powder is drawn by a vacuum pump through a dedicated hose that is connected to the fire extinguisher cylinder head at one end and into a 1,200 litres reception silo, fitted with a 1 tonne capacity 'Big-Bag'. The 'Big Bag' is attached to the bottom of the silo and is secured by a metal clamp to ensure a tight seal and to minimise any fugitive emission of powder inside the building;
  - The inclined conveyor feeds to the 40 cubic yard roll on roll off container, as site operatives manually disassemble the fire extinguishers and place empty cylinders and metal dip tubes on the conveyor, as well as brass heads, plastic dip tubes and plastic skirts in their respective 1.1m<sup>3</sup> capacity containers.
- 10.4.4 Containers used for the storage of disassembled fire extinguisher parts will be a minimum of 11.5m from the fire extinguisher storage area and 14m from the cardboard and plastics baling plant. Baled cardboard and plastics will be transferred immediately into a van for transfer off site to a local recycling plant. Baled materials will not be stored on site.
- 10.4.5 Separation distances shown in the NRW 'Fire Prevention and Mitigation Plan Guidance – Waste Management' (Figure 2 in the guidance) will be maintained. The Site has been designed so that there is no 'stack to stack' stockpiles (i.e. there are no waste or product stockpiles directly opposite one another). Separation distances are shown on Drawing 'Site Location and Layout', DW03.
- 10.4.6 Notwithstanding these separation distances, the Site incorporates thermal detection camera, CCTV cameras, a fire alarm system complying with BS 5839 part 1 and ceiling mounted automatic fire extinguishers located above the combustible waste storage and

processing areas inside the building. In addition, the Site will be manned or monitored on CCTV cameras on a 24 hours 7 days basis.

**Table 5 Waste Storage Stockpiles**

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
Foam Fire Extinguishers	Pre	Waste	See drawing DW03	Upright in maximum 1.1 m <sup>3</sup> containers. Waste is designed and required to be non-combustible	1m	1m	1.1m	Non-combustible waste	5 working days
CO <sub>2</sub> Fire Extinguishers	Pre	Waste	See drawing DW03	Upright in maximum 1.1 m <sup>3</sup> containers. Waste is designed and required to be non-combustible	1m	1m	1.1m	Non-combustible waste	5 working days
Deionised Water Fire Extinguishers	Pre	Waste	See drawing DW03	Upright in maximum 1.1 m <sup>3</sup> containers. Waste is designed and required to be non-combustible	1m	1m	1.1m	Non-combustible waste	5 working days
Powder Fire Extinguishers	Post	Waste	See drawing DW03	Upright in maximum 1.1 m <sup>3</sup> containers. Waste is designed and required to be non-combustible	1m	1m	1.1m	Non-combustible waste	5 working days

**Table 5 Waste Storage Stockpiles**

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
Brass Heads	Post	Waste	See drawing DW03	1.1m <sup>3</sup> Storage Container	1m	1m	1.1m	7.7m <sup>3</sup> (up to 7 x 1.1m <sup>3</sup> storage containers)	5 working days
Plastic skirts	Post	Waste	See drawing DW03	1.1m <sup>3</sup> Storage Container	1m	1m	1.1m	7.7m <sup>3</sup> (up to 7 x 1.1m <sup>3</sup> storage containers)	5 working days
Plastic Dip Tubes	Post	Waste	See drawing DW03	1.1m <sup>3</sup> Storage Container	1m	1m	1.1m	7.7m <sup>3</sup> (up to 7 x 1.1m <sup>3</sup> storage containers)	5 working days
Scrap Metal (Metal Cannisters and Metal Dip Tubes)	Post	Waste	See drawing DW03	40 Cubic Yard Roll on Roll Off Container	6.09m	2.43m	2.43m	36m <sup>3</sup> (up to 1 x 36m <sup>3</sup> container at any one time)	5 working days
Baled Cardboard	Post	Waste	Location of baler shown on drawing DW03	Immediate Transfer to Vehicle for Removal Off-Site	1m	1m	1m	Baled waste will not be stored on site. Each bale is transferred immediately to company vehicle for removal from site	Immediate Transfer to Vehicle for Removal Off-Site
Baled Plastic	Post	Waste		Immediate Transfer to Vehicle for Removal Off-Site	1m	1m	1m	Baled waste will not be stored on site. Each bale is transferred immediately to company vehicle for	Immediate Transfer to Vehicle for

**Table 5 Waste Storage Stockpiles**

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
								removal from site	Removal Off-Site
Packaging Wastes	Post	Waste	See drawing DW03	20 Cubic Yard Sealed and Lidded Container	6.09m	2.43m	1.22m	18m <sup>3</sup>	5 working days

## 11 BALED WASTE STORAGE

- 11.1.1 Cardboard and plastic bales will not be stored on site. Due to the small volumes produced, they will be transferred directly from the baler plant to a vehicle for transfer off-site to a local authorised recycling facility.

## 12 ENCLOSING STACKS USING BAYS AND WALLS

- 12.1.1 Fire extinguishers and fire extinguisher media are required and designed to be non-combustible and their storage before emptying and decommissioning is considered to present no risk of fire.
- 12.1.2 Separated fire extinguisher components will be stored in dedicated containers, as detailed in Table 5. Metal cylinders and metal dip tubes will be stored in a 40 cubic yard roll on roll off container, whilst separated brass heads, plastic dip tubes and plastic skirts will be stored in dedicated 1.1m<sup>3</sup> sealed containers.
- 12.1.3 Packaging wastes associated with the supply and return of fire extinguishers from customers will be stored in a sealed and lidded skip.
- 12.1.4 Separation distances will be used to as a means to stop fire spreading between separated and sorted fire extinguisher components and packaging wastes in the event of a fire incident, together with the use of ceiling mounted automatic fire extinguishers above combustible waste storage and processing areas.

## 13 WASTE BUILDING

- 13.1.1 A Fire Risk Assessment will be prepared for the Site by an independent, suitably qualified and experienced person, who is a Technical Member of the Institute of Safety and Health (IOSH) or similar and has considerable experience in the implementation of safety management systems and fire management systems in order to achieve accreditation to the International Standard ISO 45001:2018 and complying with the Regulatory Reform (Fire Safety) Order 2005.
- 13.1.2 The Fire Risk Assessment and any corrective actions will ensure that:
- There are no obstructions or restrictions to access the facility by the emergency services if needed;
  - Adequate emergency egress exists for the building and the occupancy profile. Emergency exit doors and signage are compliant. All emergency push bars are in working order and egress routes are clear;
  - Portable fire extinguishers are acceptable in terms of the type and the number for current site activities. All currently deployed extinguishing units have intact tags and pins and where a charge indicator is fitted all charges are in the green. Deployed units are in date;
  - Site offices and welfare facilities. No significant structural features that could cause

the spread of fire.

- 13.1.3 In the event of a fire, smoke would escape from the building via a series of vents in the roof and the roller shutter vehicular access doors, which would be opened.

## **14 WASTES STORED IN CONTAINERS**

- 14.1.1 Waste stored in containers is detailed in Section 10.3.

## **15 LAYOUT OF WASTE STACKS**

- 15.1.1 Incoming loads of fire extinguishers will be stored upright in dedicated containers, each located on a pallet, according to the media they contain, i.e. foam, powder, deionised water and CO<sub>2</sub> containers will be stored separately. It is considered that the storage of fire extinguishers presents no risk of fire, as the materials are non-combustible
- 15.1.2 IBCs will be stored up to 3 high in dedicated rows according to the fire extinguisher media they contain, i.e. deionised water and treated foam. Fire extinguisher powder will be stored in 1 tonne 'Big Bags'. It is considered that the storage of deionised water and treated foam in IBCs and powder in 'Big Bags' presents no risk of fire, as the materials are non-combustible. Layout of IBC and powder rows are shown on Drawing 'Indicative Site layout and Storage', DW03.
- 15.1.3 Emptied and disassembled fire extinguishers will be manually separated into their component parts for recycling, with plastic dip tubes, plastic skirts and brass heads placed into separate 1.1m<sup>3</sup> containers. Containers will be stored in a stack with a maximum width of 3m and length of 7m.
- 15.1.4 Cylinders and metal dip tubes will be stored in a 40 cubic yard roll on roll off container. Only one container will be used for this purpose at the Site. Once the container approaches capacity, the scrap metal contractor will be contacted and arrangements will be made for its collection and replacement with an empty 40 cubic yard roll on roll off container. The scrap metal contractor operates a local authorised scrap metal recycling facility in Cwmcarn, Crosskeys, circa 11 miles away.
- 15.1.5 Bales of cardboard and plastic packaging wastes, such as wrapping, will be transferred directly from the baler plant to a company vehicle for off-site removal to a local recycling facility. Bales will not be stored on site.
- 15.1.6 A fire hose will be located on the internal western wall of the building and will be easily accessible. The location of the waste stacks does not impede access to the fire hose.
- 15.1.7 Fire extinguishers are located in the building, at the locations shown on Drawing 'Indicative Site layout and Storage', DW03. The location of the waste stacks does not impede access to the fire extinguishers.
- 15.1.8 The layout of the building has been designed to ensure efficient access by waste delivery and collection vehicles, the fire brigade in the event of an emergency incident and easy access to fire-fighting equipment and materials that may require removal to the

quarantine area.

## 16 SEASONALITY

- 16.1.1 The waste types received at the Site and the recycled components that will be supplied to off-site customers are not subject to seasonal variations, unlike for example green waste that arises in greater quantities in the spring and summer months.

## 17 MONITORING AND TURNING OF STACKS

- 17.1.1 A thermal imaging camera is used to monitor the internal temperature of waste containers. As site operations include the storage of disassembled and separated metal fire extinguisher cylinders and dip tubes in a 40 cubic yard container and brass heads in 1.1m<sup>3</sup> containers, it is not feasible to insert a temperature probe into the waste mass.

## 18 FIRE DETECTION

### 18.1 DETECTION SYSTEMS

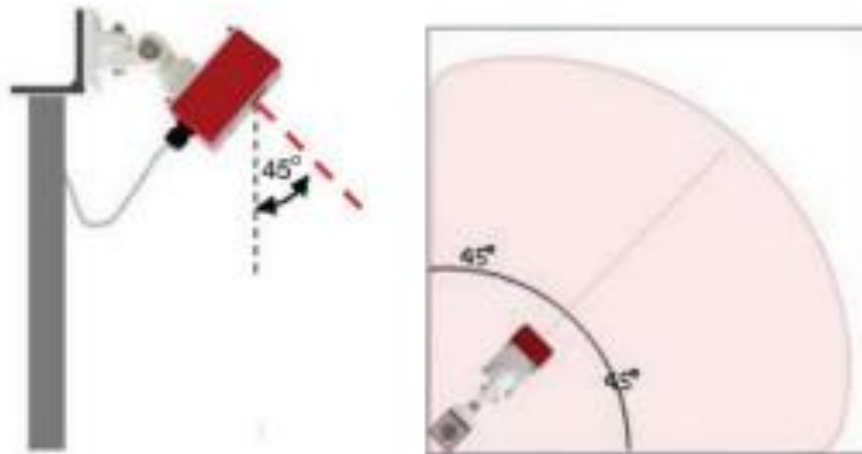
- 18.1.1 A comprehensive CCTV security system will be installed to provide complete coverage of the Site, which will be monitored by Secureit outside of operational hours. Therefore the facility will be manned or monitored on CCTV on a 24 hours x 7 days basis.

- 18.1.2 During the working day, operational areas of the Site will be in constant attendance by site operatives, so that in the event of a fire incident or smoke emission an alarm would be raised and mitigation measures implemented immediately. Outside of operational hours, any fire or smoke emission would be detected by Secureit, who would contact the Site Manager, Operations Director and Fire and Rescue Service in the event of a fire incident. This ensures that any fire is likely to be rapidly detected by either site personnel and/or the surveillance camera systems on a 24/7 basis.

### 18.2 CONE OF VISION

- 18.2.1 The CCTV cameras will have a cone of vision of 90° and range of 35m so each one can monitor an area extending from floor to ceiling and extending to approximately 35m. Figure 2 illustrates the Cone of Vision of each CCTV camera.

***Figure 2: Cone of Vision***



18.2.2 The CCTV cameras will be serviced every 12 months by a suitable accredited company.

### 18.3 DETECTION SYSTEM CERTIFICATION

18.3.1 The camera surveillance system will be designed, installed and maintained by a contractor who is covered by an appropriate UKAS-accredited third party certification scheme.

## 19 FIRE SUPPRESSION SYSTEM

19.1.1 The Operator proposes to install ceiling mounted automatic fire extinguishers inside the building above the carbon filtration plant, quarantine area, overnight parking area, powder bagging plant, fire extinguisher cannister dismantling area and separated components storage containers, the inclined container, 40 cubic yard roll on roll off container, baler plant and quarantine skip. All areas used to process and store combustible wastes will be covered by the fire suppression system. The installation work and annual servicing and maintenance will be undertaken by a suitably accredited third-party company and a suitable Extinguisher Compliance Certificate will be obtained for the work.

19.1.2 The ceiling mounted ABC Powder Automatic Fire Suppression System incorporates automatic detection and self-activates in the event of a fire (see Figure 3 below for illustration). The extinguishers use mono ammonium phosphate powder and are designed to extinguish flammable liquids, flammable gases, electrical fires, paper, cardboard, plastic, metal and wood fires (i.e. class A, B, C) and electrically started fires.

19.1.3 Each 10kg unit incorporates a quartzoid bulb that automatically breaks at 68°C, releasing the mono ammonium phosphate powder over an area of up to 28m<sup>2</sup>. The use 34 x 10kg units will provide complete coverage of the area detailed in paragraph 19.1.1.

**Figure 3: Ceiling Mounted ABC Powder Automatic Fire Suppression System**



- 19.1.4 The ABC Powder Automatic Fire Suppression System is CE Marked, UKCA approved and BSI tested. Installation and annual servicing will be undertaken in accordance with British Standard BS5036-3 and conducted by a suitably accredited third-party company. An Extinguisher Compliance Certificate will be obtained for the work.
- 12.1.6 The building will be either manned or subject to continuous CCTV surveillance by an independent company on a 24 hours x 7 days basis and therefore any smoke or outbreak of fire would be quickly detected. A water hose and wall mounted fire extinguishers will be installed at the Site, see Drawing 'Indicative Site Layout and Storage', DW03. Site operatives will be trained to operate the fire-fighting equipment to deal with a fire incident, where it is safe to do so.
- 12.1.7 Records of training, testing and maintenance of fire extinguishers and fire hoses will be maintained.

## **20 FIRE FIGHTING STRATEGY**

### **20.1 ACTIVE FIRE FIGHTING**

- 20.1.1 The Site is equipped with forklift truck and pallet trucks, which can be used by trained site operatives to move materials in the event of a fire or to assist the Fire and Rescue Service if requested to do so by them.
- 20.1.2 The Site will be equipped with ceiling mounted automatic fire extinguishers, a water hose and wall mounted fire extinguishers.
- 20.1.3 The Site is equipped to fight fire by:
- Applying water to cool unburned materials and other hazards;
  - Separate unburned materials from the fire using the forklift truck or pallet trucks;

- Separate materials, using the forklift truck or pallet trucks, after being thoroughly quenched with water using the water hose and/or fire extinguishers.

20.1.4 Fire residues and materials contaminated as a result of a fire will be removed from the Site as quickly as possible, once it is safe to do so and they have sufficiently cooled. Residues and contaminated materials will be removed off site to suitably authorised facilities.

20.2 Site staff will only be used to fight fire where they are suitably trained and it is safe to do so. If the Fire and Rescue Service attend the Site to deal with an incident, site staff will liaise with the fire fighters and follow their instruction.

## 21 WATER SUPPLIES

### 21.1 AVAILABLE WATER SUPPLY

21.1.1 NRW guidance on Fire Prevention and Mitigation Plans states that a 300m<sup>3</sup> stockpile of combustible waste must have a water supply of at least 2m<sup>3</sup> per minute for a minimum of 3 hours, i.e. 360m<sup>3</sup> water supply in total. This rate is proportional and as the largest combustible waste stockpile on site has a capacity of 36m<sup>3</sup>, this equates to 44m<sup>3</sup> of water.

21.1.2 There are three fire hydrants located on Sir Alfred Owen Way within 100m of the Site, the locations of which are shown on Drawing 'Site Drainage,' DW04.

21.1.3 The minimum flow rate of a fire hydrant is 8 litres per second, which equates to 86,400 litres (86.3m<sup>3</sup>) over a three hours period. This will provide sufficient water availability to more than meet NRW guidance requirement of 44m<sup>3</sup> of water to extinguish a fire over a 3 hours period in the event of a fire in the largest waste stockpile on site.

## 22 MANAGING FIRE WATER

### 22.1 CONTAINING FIRE WATER RUN-OFF

22.1.1 In the event of a fire inside the building, firewater will be contained by the concrete floor, sealed side walls of the structure and the use of free-standing temporary water barriers, designed for fast response, across the vehicular access and pedestrian access and emergency exit doors. This would enable the Fire Service to access the fire and apply water over the top of the barriers to the fire. These barriers are 0.5m high and are designed for use on hard and even surfaces, including concrete. The weight of each barrier section is light, at under 4kg for a 0.5m section. The barriers are anchored by the weight of the water and slotted together to form a continuous barrier (see Plate 1 below). Flexible ± 3° coupling makes it possible to create curves, but it is also possible to make inward and outward corners using specific corner pieces.

**Plate 1**



- 22.1.2 The internal building dimensions are a minimum of 51m x 24m. Therefore the placement of 0.5m high solid barriers would create a reservoir of up to 612m<sup>3</sup>, which is easily sufficient to contain the maximum amount of firewater that is likely to be necessary to extinguish a fire, i.e. 44m<sup>3</sup>.
- 22.1.3 All captured firewater would be tankered off site to an authorised wastewater treatment works. It will not be discharged to foul sewer.
- 22.1.4 After use and the removal of firewater by road-tanker, the water barriers would be allowed to dry, dismantled and the stacked for future use if required. They would be stored in the site office to ensure they are located away from moving plant and kept safe for future use if required. They have a design life of 20 years.
- 22.1.5 Visual inspection of the water barriers will form part of the weekly inspection checks to ensure that no inadvertent damage or deterioration has occurred during their storage. In the event that any water barrier or barriers are found to be damaged or deteriorated to be unfit for use, they will be replaced by new units sourced from a suitable supplier as a matter of urgency.
- 22.1.6 In order to prevent potentially contaminated firewater entering the surface water sewer, the cut-off valve on the external surface water drain will be closed in the event of a fire incident. Drain mats will be located to seal off all manholes, including foul sewer manholes, on the external yard.

## **22.2 DRAIN MATS**

- 22.2.1 Heavy duty drain covers, measuring 460mm x 460mm x 3mm thick will be available for emergency use during a fire incident. They are made of polyurethane and are resistant to water, oil and chemical attack. The drain covers have overlapping edges, which enables the mats to be placed side by side to create an effective seal and block off drain entrances to prevent any escape of firewater. Due to their polyurethane composition, they are easy to clean and wash off with water.

- 22.2.2 In the event of a fire incident, a site operative will place the drain covers over the foul sewer and surface water manholes on the external yard to prevent discharge to both the foul and surface water sewer. Site operatives will take care to ensure all the drains are covered. Where more than one drain mat is required to cover and seal a drain, the edges of the mats will be overlapped to ensure an effective seal between the two units. The contact side of the drain covers is sticky, which creates an effective seal around the drain.
- 22.2.3 Once the fire has been extinguished and the firewater tankered off site to an authorised wastewater treatment works, the drain covers will be removed, washed down with a hosepipe or bucket of water and brush and allowed to dry before storage for future use. Drain mats will not be exposed to direct sunlight during storage.

## **23 QUARANTINE AREA**

### **23.1 QUARANTINE AREA LOCATION AND SIZE**

- 23.1.1 A quarantine area is designated inside the building at a minimum size of 84m<sup>2</sup> and is capable of holding a minimum of 18m<sup>3</sup> of waste (i.e. 50% of the size of the largest waste stockpile). Its location is shown on Drawing 'Indicative Site Layout and Storage, DW03'. Minimum 6m<sup>3</sup> clearance distances will be maintained at all times to waste storage areas, plant and equipment. The building wall comprises concrete blocks.
- 23.1.2 The quarantine area will be kept clear of materials at all times, except for emergency use during a fire incident (e.g. to move fire affected waste into following quenching with water to ensure that it is fully extinguished or for the receipt of unburnt waste for isolation and to prevent it catching fire).
- 23.1.3 In the event of a fire incident, any fire water or other liquors that arise will be retained inside the building and managed in accordance with Section 22. Firewater will be tankered off site to an authorised wastewater treatment works.
- 23.1.4 The quarantine area will be clearly identified and signposted to only allow the storage of fire damaged materials or materials which are showing signs of overheating. Quarantined materials will be removed as soon as practicable, following any water quench and sufficient period of cooling that may be required. Materials will be removed in appropriate vehicles and properly disposed of at suitably authorised facilities.
- 23.1.5 Any hot loads inadvertently deposited on site would be quenched and then diverted to the quarantine area.
- 23.1.6 There is adequate hose reel capacity to reach the quarantine area from the mains water supply (see below).
- 23.1.7 A separate enclosed, lidded skip or container will be located inside the building for any inadvertently received non-permitted waste, including odorous waste, inherently dusty wastes or wastes infected with vermin or insects etc.

## **23.2 PROCEDURE TO REMOVE MATERIALS TEMPORARILY STORED IN THE QUARANTINE AREA**

- 23.2.1 Waste and materials stored in the quarantine area will only be removed when it is safe to do so.
- 23.2.2 In the event that unburnt waste, plant and equipment etc has been moved to the quarantine area for safe storage and to prevent a fire spreading, it shall be removed back to its normal location once it is safe to do so and burnt materials have cooled and been safely removed.
- 23.2.3 Where the quarantine area is used to isolate hot loads or wastes etc that are on fire, once these have been safely cooled by the use of fire-fighting water, the ashes and residues will be removed off site to authorised facilities.

## **24 DURING AND AFTER AN INCIDENT**

### **24.1 DEALING WITH ISSUES DURING A FIRE**

- 24.1.1 In the event of a fire incident on Site, waste import will cease and delivery drivers will be contacted with instructions to divert their waste loads to an alternative authorised site.
- 24.1.2 Waste deliveries will only recommence when the fire has been extinguished and residues sufficiently cooled and cleared so that they no longer pose any fire risk.

### **24.2 NOTIFYING RESIDENTS AND BUSINESSES**

- 24.2.1 Adjacent businesses and other high-risk receptors (see Table 3) will be contacted and informed of the fire incident.
- 24.2.2 NRW will be notified as soon as a fire incident occurs and local media contacted where appropriate so that people living and working in the wider area can be notified. Due to the highly urbanised nature of the local environ, it is not possible for the Operator to contact every business and household individually within a 2Km radius of the Site, as there are several thousand properties within this area. However, the incident will be notified to the relevant authorities and NHS so that people are aware of any potential risks from smoke etc.

### **24.3 CLEANING AND DECONTAMINATION AFTER A FIRE**

- 24.3.1 Cleaning and decontamination procedures following a fire will comprise:
- Removing ashes, residues and any equipment or plant etc that has been fire damaged and cannot be repaired to a suitably authorised facility. Materials will only be moved once they have sufficiently cooled to no longer pose a fire risk;
  - Remove any contaminated fire water to a suitably authorised wastewater treatment facility;

- Undertake any required repairs to infrastructure, plant and equipment that has been damaged as a result of the fire;
- Liaise and fully co-operate with the Fire and Rescue Service, NRW and other regulatory bodies, as appropriate;
- Review and update FPMP, EMS and staff training, as appropriate.

24.3.2 In the event of a fire the following list of potential contractors will assist with the decontamination of the Site:

- GLJ Recycling Limited and Wave Limited will assist with the removal of any residual waste;
- GLJ Recycling Limited will provide mobile plant and services to remove debris and contaminated solid waste, including any demolition waste from the Site;
- Circular Waste Solutions will assist with the removal of all contaminated waste fluids;
- Undamaged fire extinguishers would be transferred to PJ Fire Limited for processing until the Site was fully operational and approved for reopening.

## **24.4 RECOMMENCEMENT OF OPERATIONS AFTER A FIRE**

24.4.1 Once it is safe to do so and the infrastructure, plant and equipment necessary to operate the Site in accordance with the Environmental Permit and to ensure there is no significant risk of pollution or harm has been repaired or replaced, the facility will recommence waste deliveries and processing.

## **25 REVIEW AND MONITOR FPMP**

25.1.1 The FPMP is a working document and will be reviewed each month as part of the monthly management meetings. In addition, an annual audit will be undertaken and the findings will form part of the senior management annual meeting.

25.1.2 Further reviews of the FPMP will be carried out in the event of the following

- A fire incident (the document and fire management measures will be urgently reviewed and improved as required to address any issues);
- Proposals to accept any additional combustible waste streams at the Site (this is likely to require an application to vary to the permit and be subject to issue of that variation);
- Increase in waste volumes (this is likely to require an application to vary to the permit and be subject to issue of that variation);
- Development of site infrastructure – new buildings (this is likely to require an application to vary to the permit and be subject to issue of that variation);

- Installation of new equipment or plant (this may require an application to vary to the permit and be subject to issue of that variation);
- 25.1.3 As stated above, staff will be trained in the contents and requirements of the FPMP and the fire prevention and mitigation measures in place. FPMP training will form part of induction training for new staff and all personnel will receive refresher talks at least annually. Staff training requirements and records form part of the EMS (see Checkfire Ltd-EMS-RP03-Final).
- 25.1.4 Regular fire drills will be carried out initially six monthly. Frequency will change depending on results of exercises, any incidents and turnover of staff.
- 25.1.5 FPMP monitoring procedures include:
- Fire watch checks at the beginning and end of each working day. Fire watch checks include:
    - All waste storage and processing areas;
    - Inspection and confirmation that there are no identifiable ignition sources;
    - All equipment is either operating correctly or appropriately shut down when not in use;
    - Waste stacks and separation distances are in accordance with the FPMP;
    - Monitoring and recording the temperature of waste stacks by using the thermal camera;
  - Monitoring and recording the residence times of wastes on Site;
  - Ensuring plant and equipment (including FPMP equipment) are adequately serviced and maintained by qualified personnel in accordance with manufacturers' or suppliers' recommendations.

**APPENDIX 1:**

**Record of Non-conformance**

Record of Non-conformance	
Date and time non-conformance identified	
What happened, what was it about?	
What caused it?	
What have you done to make sure that it does not happen again?	
Was there any significant pollution – for example foam entering a surface water drain or public sewer?	
If there was then you must notify the NRW on 0300 065 3000 (open 24hours/day)  Have you done so?	Yes/No/not applicable  Time:  Date:  NRW Incident number:
Please print name and sign:	

**APPENDIX 2:**

**Hot Works Permit**

Permit to Work – Hot Works					
Issued To (to be completed by the Authorising person - Maintenance dept)		Date:			
Company					
Permit No.		Location of work			
POWRA (point of work risk assessment) must be completed and attached with this permit POWRA reference number					
Work covered by the Permit	Oxy-Acetylene Cutting	Yes		No	
	Oxy-Acetylene Welding	Yes		No	
	Angle Grinder / Skill saw	Yes		No	
	Other Welding	Yes		No	
	Other Spark Producing Equipment -Please Specify	Yes		No	
<b>Precautions to be taken before hot work is carried out</b>					
a. Have all tools /Plant and Equipment been thoroughly inspected to ensure safe operation?	Yes		No		N/A
b. Has the work area been screened, protected and warning signs been placed?	Yes		No		N/A
c. Have all combustible materials (combustible / Flammable liquids, vapours, LPG gases etc) around the work area been removed or protected against heat and sparks?	Yes		No		N/A
d. Is there a fire extinguisher appropriate for the task, in date and immediately to hand?	Yes		No		N/A
e. If necessary, have all systems associated with the task been isolated? (If YES isolation permit required no option)	Yes		No		N/A
f. Where the hot work is it likely to activate smoke / heat alarms have they been isolated?	Yes		No		N/A
g. Have all operatives been briefed on the action to be taken in case of a fire?	Yes		No		N/A
h. Has the site manager inspected the area for all the above prior to the Hot Work commencing?	Yes		No		N/A
i. Have you completed a POWRA (point of work risk assessment)	Yes		No		N/A
j. Do you have a "fire watch observer" in place? <small>Fire watch observer to stay in place for 60 minutes after the completion of the hot work activities</small>	Yes		No		N/A
Comments:					

Duration of Permit			
This Permit to work is valid between (maximum duration one shift)	Hours		Hours
Date:			
Authorisation (by Authorising Person) <i>(Maintenance Dept)</i>	Acceptance by Competent Person (Receiver of Permit)		
I am satisfied that the conditions of this Permit to Work have been met and the receiver has been briefed on all relevant emergency procedures.			
Signed:	Signed:		
Print:	Print:		
Date:	Date:		
Time Hours:	Time Hours:		
Work Completion (by Nominated Person) <i>(Maintenance Dept)</i>	Cancellation by Competent Person (Receiver of Permit)		
All persons understand that all work covered by this permit must now cease and the permit to work is cancelled.	The work detailed in this permit is:		
	Complete / Not Complete (delete as appropriate)		
	I confirm that all areas in and around where heat, fire, sparks may have spread were thoroughly inspected on completion of the Hot Works and have been thoroughly inspected one hour after completion and were free from fire or smouldering materials and have been left in a safe condition.		
Signed:	Signed:		
Print:	Print:		
Date:	Date:		
Time hours:	Time hours:		
Comments:			
Please retain all completed Hot Work Permits and return to the Technically Competent Person			

**APPENDIX 3**

**Site Inspection Form**

<b>Site Inspection Record</b>			
<b>Date</b>	<b>Item</b>	<b>Inspected (yes/no)</b>	<b>Comments</b>
	Site entrance and external yard		
	Concrete pad		
	General site cleanliness and sweeping, including corners		
	Carbon absorption unit (including valves, flanges, pressure valves and connections)		
	Bagging plant		
	Cardboard and plastics baler		
	Inclined conveyor		
	Site drainage, including concrete sumps		
	External drainage cut off valve		
	Loading area and kerbing		
	Fire prevention and control system		
	Litter		
	Odour		
	Dust		
	Mud / dirt		
	Pests, vermin, insects and scavenging birds;		
	Security		

## APPENDIX 4

### EMERGENCY SPILLAGE PROCEDURE

#### Environmental Risk

Risks of environmental pollution incidents from Unit 10B, Sir Alfred Owen Way, Pontygwindy Industrial Estate, Caerphilly, CF83 3HU are considered to be from spillage or leakage of fire extinguisher media from the treatment and transfer of spent or unused waste fire extinguishers, including foam, water and powder, and fuel or oil in the event of a spillage or leakage from the fork lift truck or delivery vehicles accessing and exiting the Site.

The Site is equipped with 4 chemical spill kits that are located inside the building. In addition, absorbent granules are stored in a sealed and lidded container on the external yard.

A blind lateral drain, with covering metal grid, is located across the entire internal width of the building entrance to prevent any inadvertent escape of liquid to the external environment. The blind drain falls to a concrete sump. Any inadvertent escape of liquid or foam from IBCs or fire extinguishers inside the building that drains towards the building entrance doors would collect in the lateral drain then fall to the concrete sump, from where it would be pumped to an IBC inside the building for authorised disposal off-site. The blind drain has been installed so that it is not possible for any liquids to by-pass it, e.g. by draining around the sides. The entire building floors comprises engineered concrete and the lateral drain ties into the sides of the sealed building walls thereby preventing any possibility of liquids by-passing the drain, see Plates 1 and 2 below.

Plate 1



Plate 2



Spent or unused waste fire extinguisher foam is transferred to IBCs by site operatives inside the building. Any IBCs containing waste foam or water removed from the site require loading onto lorries on the external yard area.

There is an external lateral drain across the yard to drain roof water run-off. This drain leads to the Nant yr Aber. Checkfire Limited has installed a manual shut off valve in the external drain, so that in the event of any potentially polluting liquids from the Site entering the drain, they could be prevented from draining into the Nant yr Aber by closing the shut off valve.

In addition, to further reduce risk, a dedicated loading and unloading area has been constructed on the external yard, which comprises impermeable concrete pavement circa 5m x 4m in area. It is kerbed to 3 sides, with the unkerbed side enabling access and egress by the fork-lift truck to load and unload lorries.

The external yard naturally slopes from the public highway on Sir Alfred Owen Way to the front of the building. The unkerbed side of the unloading area is up gradient, i.e. nearest the public highway, meaning that any accidental spillage or leakage during loading or unloading would be contained by the kerbed area. The size of the kerbed area is such that it can contain the entire contents of an IBC in the event a container was accidentally punctured or tipped over during loading or unloading. Contained liquid would then be pumped into a separate and sealed IBC for authorised disposal off site.

## **Emergency Spillage Procedure**

### ***Aim***

To ensure that any fire extinguisher media, fuel or other potentially polluting liquid spillages are contained within an area and cause minimal environmental impact.

### ***Steps to be Followed***

#### ***Small scale***

A small-scale fire extinguisher media, fuel or other potentially polluting liquid spillage is one caused by things such as a splash or spill whilst filling an IBC or item of plant or machinery. The volumes involved are small and are confined to a small area.

If a small spill does occur the spill needs to be covered with absorbent granules from the external sealed storage area or treated with a chemical spill kit located inside the building.

The absorbent material or spill kit should be allowed to cover the spill for a sufficient amount of time to allow it to soak up the liquid contamination.

Once the absorbent material has soaked up the spill it should be removed to a quarantine skip for non-conforming waste. From there the waste should be exported off Site to a facility permitted to accept the waste types and all relevant documentation should be maintained by Checkfire Limited, e.g. Hazardous Waste Consignment Note or Waste Transfer Note.

Report to the Site Manager any materials that have been used and need replacing.

#### ***Large Scale***

In the event of a major spillage of fire extinguisher media (e.g. an entire IBC), fuel or other potentially polluting liquid, the essential action to be taken is to prevent the spillage migrating to a position / sensitive receptor where it could cause contamination.

This can be done by:

- Ensuring any spillage inside the building is contained by the internal lateral drain and that the contents that fall to the integral concrete sump are pumped into a sealed IBC for removal off site to an authorised facility.
- Ensuring any spillage on the external yard is prevented from passing via the external lateral drain to the Nant yr Aber, by immediately closing the manual shut off valve.
- Ensuring that any spillage in the external loading area, which will collect in the 3-sided kerbed area, is pumped into a sealed IBC for removal off site to an authorised facility.
- Placing absorbent materials or chemical spill kits on the spillage.

If the spillage is major, it is essential that instant action is taken, including closing the manual shut valve, pumping captured liquids into sealed IBCs for removal off site to authorised facilities and using the chemical spill-kits and absorbent material.

Where possible, site operatives should try to prevent any further spillage from the source e.g. by turning off any valves or blocking any holes or punctures in a leaking IBC etc.

The spill should be reported as soon as reasonably possible to the Site Manager and NRW.

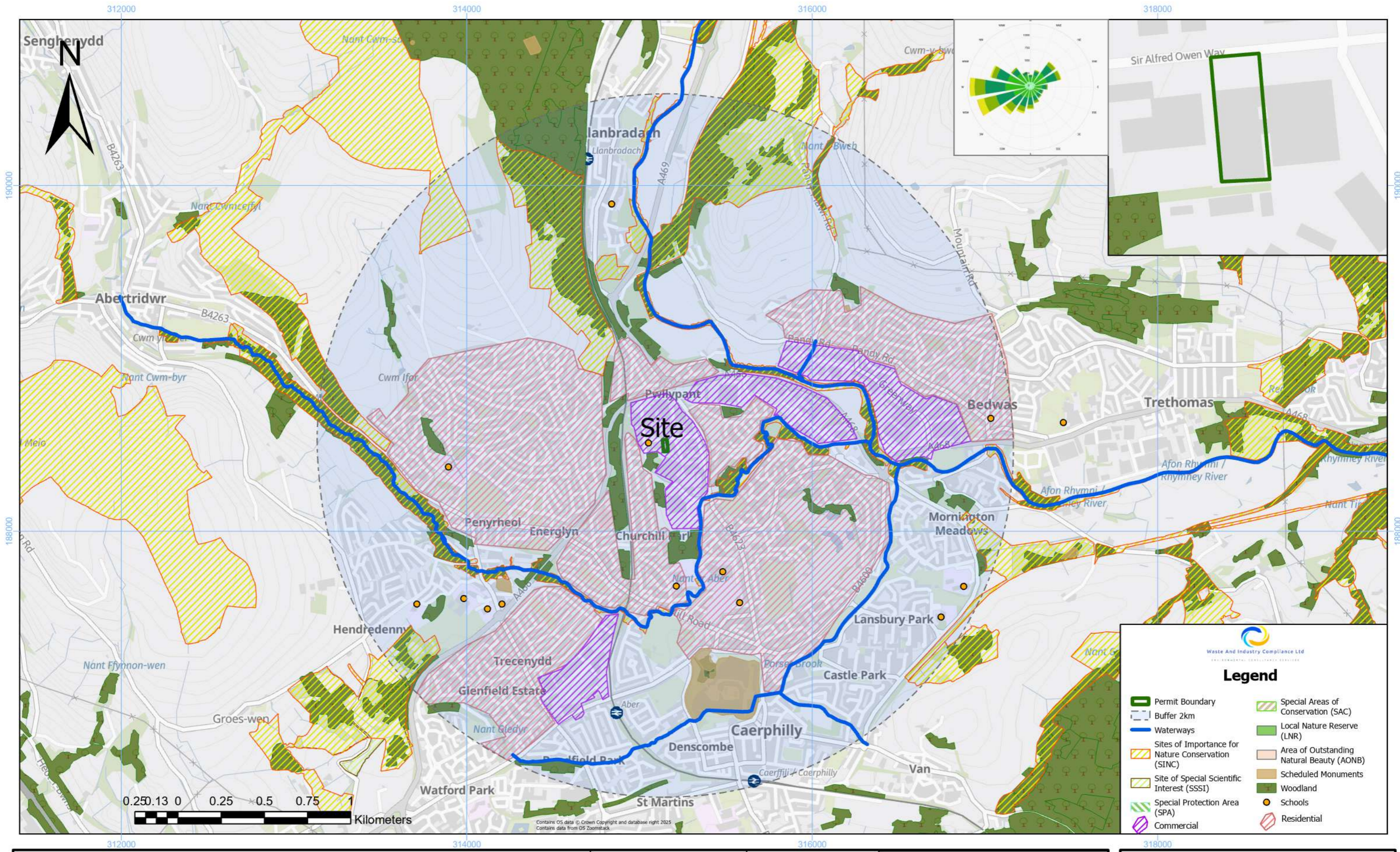
Use the absorbent materials and chemical spill kits to clear up the spillage and seek specialist advice from appropriate contractors.

Once the absorbent material/chemical spill kit has soaked up the spill it should be removed a sealed and lidded quarantine skip. From there the waste should be exported off Site to a facility permitted to accept the waste types and all relevant documentation should be held on site.

Report to the Site Manager any materials that have been used and need replacing.

#### **Consequences of not following procedures:**

If a spill occurs and the above procedures are not followed, then the Site runs the risk of causing pollution to the surrounding land and water courses. This may result in action being taken against the company.



<b>Title:</b> Sensitive Receptors	<b>Date:</b> 03/04/2025	<b>Page Size:</b> A3	<b>Drawing Number:</b> CheckfireLtd-Receptors-DW02
<b>Site Location:</b> Unit 10B, Sir Alfred Owen Way, Pontygwindy Industrial Estate, Caerphilly, CF83 3HU	<b>Version:</b> FINAL	<b>Scale:</b> 1:20000	<b>Grid reference:</b> ST 15149 88490

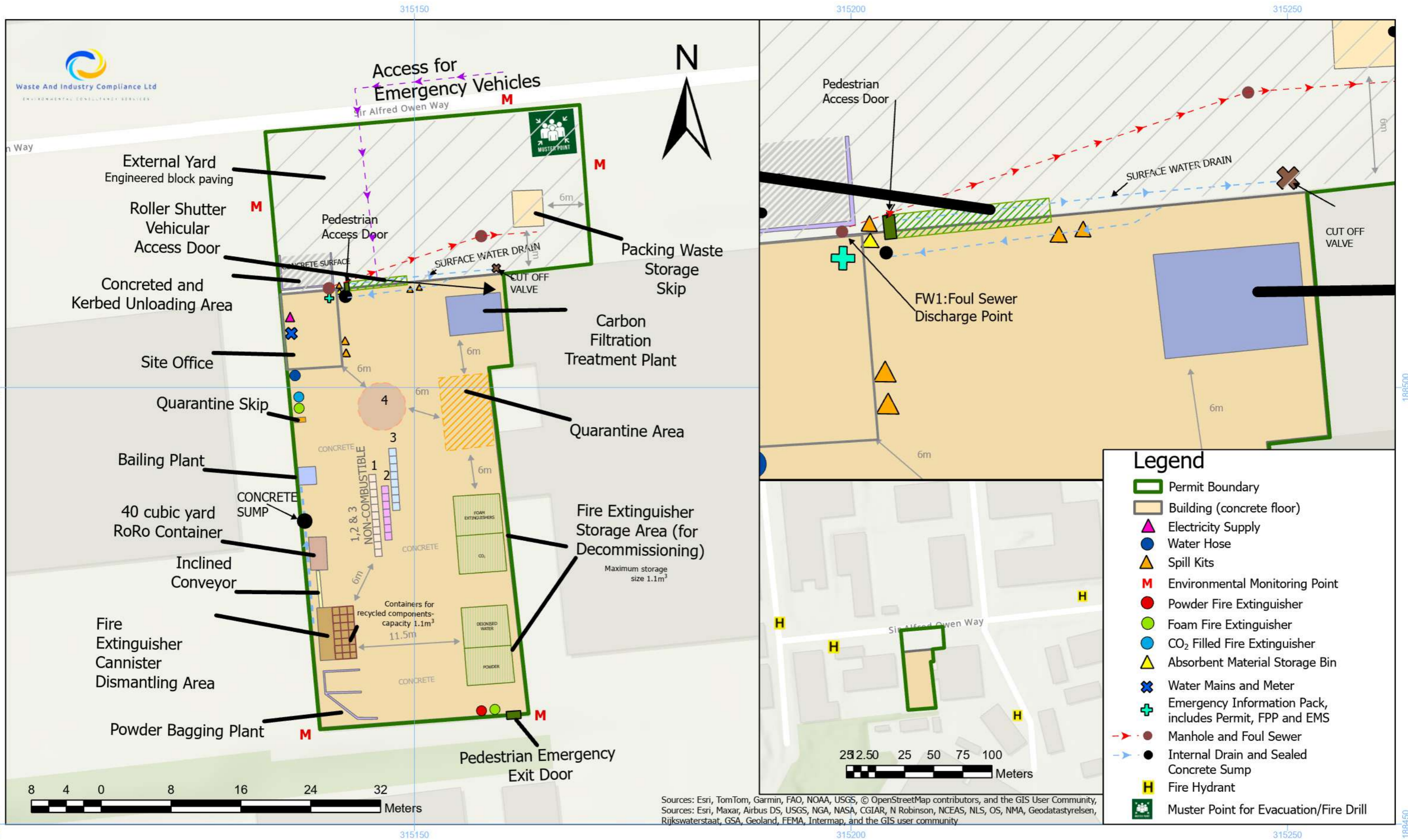
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Legend	
	Permit Boundary
	Building (concrete floor)
	1 IBCs-Decanted Water- x3 high 2 Bulk Bags of Fire Extinguisher Powder 3 IBCs- Decanted & treated Foam- x3 high 4 Forklift Parking Area
	Electricity Supply
	Water Hose
	Powder Fire Extinguisher
	Foam Fire Extinguisher
	CO <sub>2</sub> Filled Fire Extinguisher
	Absorbent Material Storage Bin
	Water Mains and Meter
	Emergency Information Pack, includes Permit, FPP and EMS
	Spill Kits
	Environmental Monitoring Point
	Muster Point for Evacuation/ Fire Drill

Drawing Number: SiteLayout-DW03
Page Size: A3
Date: 04/07/2025
Scale: 1:300
Version: FINAL
Grid reference: ST 15149 88490

Title: indicative Site Layout & Storage	
Site Location: Unit 10B, Sir Alfred Owen Way, Pontyglyndy Industrial Estate, Caerphilly, CF83 3HU	
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<b>Title:</b> Site Drainage <b>Site Location:</b> Unit 10B, Sir Alfred Owen Way, Pontygwindy Industrial Estate, Caerphilly, CF83 3HU	<b>Date:</b> 11/07/2025 <b>Version:</b> FINAL	<b>Page Size:</b> A3 <b>Scale:</b> 1:400	<b>Drawing Number:</b> CheckfireLtd-Sitedrainage-DW04 <b>Grid reference:</b> ST 15149 88490	<p>Author: S. Barnes. Contains OS data © Crowncopyright [OS OpenMap Local][2025].          All Dimensions to be checked on site and not scaled from this drawing. This drawing is not for construction.          This document and its design is copyright of Waste &amp; Compliance Ltd. and should not be reproduced in part or whole without permission. It shall be read in conjunction with accompanied consultant documents and associated project documents.          All services to be checked on site and not scaled from this drawing.</p>
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