Client: Fiberight Limited
Address: Unit 1 Westfield Industrial Park, Waunarlwydd, Swansea, SA5 4SF

Fiberight Limited, Unit 1 Westfield Industrial Estate, Waunarlwydd, Swansea, SA5 4SF

Application for a Bespoke Environmental Permit

Fire Prevention and Mitigation Plan (FPMP)

Our Reference: Fiberight-Waunarlwydd-RP04-Final Rev E (FPMP) 12 October 2023

Waste And Industry Compliance Ltd

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Fiberight-Waunarlwydd-RP04-Final Rev E (FPMP)

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1 SITE DETAILS

1.1 BACKGROUND

1.1.1 This Fire Prevention and Mitigation Plan (FPMP) has been prepared for a proposed non-hazardous waste recycling facility at Unit 1, Westfield Industrial Estate, Waunarlwydd, Swansea, SA5 4SF ***(the Site)***. It has been prepared in accordance with 'Fire Prevention and Mitigation Plan Guidance – Waste Management, Guidance Note 16, Version 2' (Natural Resources Wales, August 2017).

1.1.2 Fiberight Limited (the Operator) will treat a range of non-hazardous wastes for recovery and recycling. Using state of the art Hydracycle™ technology (developed by the Operator), coupled with a range of integrated innovative material purification technologies, the plant is designed to achieve high rates of recycling, typically 70% or greater. It can also recycle many non-hazardous wastes that are typically either landfilled or incinerated, thereby moving these materials up the waste hierarchy and making a significant contribution to recycling targets. The Site will have an annual waste throughput of up to 60,000 tonnes. Hazardous wastes will not be accepted at the Site.

1.1.3 An application for a bespoke Environmental Permit was submitted to NRW on 12 August 2022. Comments were received from NRW on 19 January 2023, which included the requirement for additional information in the FPMP:

We have reviewed your FPMP for completeness and it is clear that it does not comply with the entirety of our guidance. This includes but is not limited to the following:

- *Section 5: See requirements around types of waste received, how its managed and waste types and forms.*
- *Section 5: See requirements for the site plan.*
- *Section 6: See tramp metal, cylinders stored on site and batteries (unexpected batteries in waste).*
- *Section 8: See requirement for separation distances and show separation distances on site plan. We also noticed you have used 6m as the separation distances from the front of the*
- *Section 19: See requirements for suitable heavy plant.*
- *Section 21: See requirements around discharging firewater to sewer*

1.1.4 Following NRW's comments, the Operator has confirmed that:

I. There will be no external storage of wastes outside of the building. All wastes will be received, tipped, stored and processed inside the building, which is fully enclosed and fitted with a roller shutter vehicular access door.

II. The quarantine area for use in the event of a fire will remain external to the building, as shown on Drawing 'Site Location and Layout'. It will comprise a suitably sized, kerbed concrete pad and kept clear of materials at all times, except for emergency use during a fire incident (e.g. to move fire affected waste into after it has been thoroughly quenched or for the receipt of unburnt waste for isolation and to prevent it catching fire.

III. The list of proposed wastes has been significantly reduced and there is no requirement to accept refuse derived fuel (RDR), solid recovered fuel (SRF), wood waste or mixed municipal wastes. As a result the proposed maximum annual waste throughput at the Site has been reduced and will now be 60,000 tonnes per annum.

IV. All waste streams are accepted for the purpose of recycling and recovery. No wastes are received for the specific reason of treating them for disposal. The waste recovery process does produce a small residual mixed fraction that will be mechanically dried for off-site supply as a RDF or SRF. However, the total quantity produced will be 20 tonnes per day on average, with a maximum capacity of 25 tonnes per day.

V. The Site will operate on a 24 hours x 7 days basis, including all production process operations and mobile plant. Staff will be available at all times to operate the facility, including all mobile and heavy plant. There will be no waste deliveries or recyclate collections between the hours of 7.00pm and 7.00am. During this time period, the doors to the building will be kept closed, including the roller shutter vehicular access door (except in the event of an emergency, such as a fire) and all activities will take place inside. The building will be staffed throughout the operational period.

1.1.5 The Operator has also confirmed that plastics will not be extruded under the permit at the Site.

1.1.6 The Site incorporates an enclosed brick and metal sheeting clad building, with impermeable concrete base. A vehicular access roller shutter door is located at the western end of the structure. All waste off loading, storage and treatment processes will be located within the building. Recycled products will also be stored and loaded inside the building for removal off-site to customers. The proposed Environmental Permit boundary is shown on Drawing 'Westfield-Waunarlwydd-DW01'.

1.1.7 A CCTV Drainage survey of the Site was undertaken in January 2022 by P & H Utilities Limited. The CCTV drainage survey confirmed surface water and foul water drainage in the vicinity of the Site. The drainage system is shown on Drawing No 21456-SK-801-0.

1.2 THE SITE

1.2.1 The Site is located within Westfield Industrial Estate, Waunarlwydd, which comprises a large industrial complex to the west of Swansea. The Site formed part of the former Alcoa aluminium works from circa 1978 to its closure in 2007.

1.2.2 The Site building was formerly occupied and used by Alcoa for aluminium processing. The building has an impermeable concrete base, which is generally in good condition although some improvements have been made by the Operator.

1.2.3 The Site is predominantly surrounded by industrial buildings that were historically used for the manufacture of aluminium products. It is accessed from Titanium Road to the east and internal industrial estate roads. A Gatehouse and security barriers are located at the entrance to the industrial estate from Titanium Road.

1.3 SURFACE WATERS / RIVERS

1.3.1 The Afon Llan is located circa 355m north of the Site at the closest point. The river flows east to west,

discharging eventually into the river Loughor estuary, circa 13 Km west of the Site.

1.3.2 There are no surface water abstractions within 1 km of the Site, the nearest is circa 1,646m northwest of the facility. There is no surface water drainage connection from the Site to the area of surface water abstraction. Therefore, surface water abstractions will not be affected by the Site.

1.3.3 There is no internal drainage within the building to surface water drain. Therefore any free standing liquors within the building, e.g. in the event of firewater being used during an incident, would not drain to any surface water drains. A 100mm 'sleeping policeman' type bund will be constructed across vehicular and pedestrian access doors to retain firewater within the building in the event of a fire incident. The internal building dimensions are a minimum of 145m x 28m. Therefore the 100mm (0.1m) high 'sleeping policeman' bunds across entry and exit points creates a 'reservoir' of 406m^3 (145m x 28m x 0.1m), which is sufficient to contain any inadvertent escape of liquid from the drum pulper or firewater in the event of a fire incident.

1.3.4 An engineered quarantine area will be constructed on the external yard area to the west of the building, see Drawing 'Site Location and Layout'. It will comprise a suitably sized, kerbed concrete pad and kept clear of materials at all times, except for emergency use during a fire incident (e.g. to move fire affected waste into after it has been thoroughly quenched or for the receipt of unburnt waste for isolation and to prevent it catching fire. Quarantine area dimensions and storage volumes are included in Section 12.

1.3.5 In the event of a fire incident, any liquors that collect in the kerbed area will be tankered off site to an authorised wastewater treatment works. When the quarantine area is empty and clean, which will be either always or the vast majority of the time, only rainwater will collect in the kerbed area. This will be pumped to foul sewer in accordance with the Trade Effluent Discharge Consent.

1.3.6 Foul water from the Site's portable welfare facilities is pumped out and removed by a contractor to an authorised wastewater treatment facility.

1.4 GROUNDWATER

1.4.1 The bedrock aquifer at the Site is classed as a Secondary A Aquifer, i.e. permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

1.4.2 The superficial deposits on Site are classed comprise partly a Secondary A Aquifer and a Secondary Undifferentiated Aquifer. A Secondary A Aquifer is defined as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. A Secondary Undifferentiated is assigned where it is not possible to attribute either category A or B to a rock type.

1.4.3 The Site is not located in a groundwater Source Protection Zone.

1.5 FIRE PREVENTION OBJECTIVES – OUTLINE METHODOLOGY

1.5.1 The purpose of this FPMP is to ensure that all reasonable measures are undertaken to prevent a fire.

1.5.2 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.

2 FPMP - OVERARCHING MANAGEMENT RESPONSIBILITY

2.1.1 The Site Manager, or in his/her absence due to annual leave etc, the Health and Safety Manager 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 facilities.

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 Fiberight 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 Fiberight-Waunarlwydd-RP01-Final, Rev C (EMS), 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 (see also section 4.2 below).

3 TYPES OF COMBUSTIBLE MATERIALS

3.1 COMBUSTIBLE WASTE

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 60,000 tonnes per annum.

Table 1 Permitted Wastes

ECW Code	Description	Fire Risk
02 01	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**	
02 01 04	Waste plastics	Medium
03 03	**Wastes from pulp, paper and cardboard production and processing**	
03 03 07	Mechanically separated rejects from pulping of waste paper and cardboard	Medium
03 03 08	Wastes from sorting of paper and cardboard destined for recycling	Medium
15 01	**Packaging (including separately collected municipal packaging waste)**	

ECW Code	Description	Fire Risk
15 01 01	Paper and cardboard packaging	Medium
15 01 02	Plastic packaging	Medium
15 01 06	Mixed packaging	Medium
19 12	**Wastes from the mechanical treatment of wastes (e.g. sorting, crushing, compacting, pelletising) not otherwise specified**	
19 12 01	Paper and cardboard	Medium
19 12 04	Plastic and rubber	Medium
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in in 19 12 11 (limited to dry recyclables only)	Medium
20 01	**Separately collected fractions (except 15 01)**	
20 01 01	Paper and cardboard	Medium
20 01 39	Plastics	Medium

3.1.2 Storage arrangements for the wastes listed in Table 2 are detailed in Section 9 'Managing Waste Material Stacks'.

3.2 PERSISTENT ORGANIC POLLUTANTS

3.2.1 Hazardous wastes, including wastes that contain persistent organic pollutants (POPS), will not be accepted at the Site.

3.3 OTHER COMBUSTIBLE MATERIALS

3.3.1 Combustible non-waste materials used on site comprise diesel for mobile plant, engine oil, hydraulic oil, brake fluid and antifreeze etc for maintenance works, and office consumables such as paper and cardboard etc.

3.3.2 Oils, brake fluid, anti-freeze 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 pavement. 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 adjacent to the western end of the building, see Drawing 'Site Location and Layout'. 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.

4.2 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, STORAGE AND PROCESSING

5.1 WASTE RECEIPT

5.1.1 Customers delivering waste to the Site will be required to provide the Operator, in advance, with pre-acceptance documentation to fully characterise the nature of the proposed materials. In addition, a Waste Transfer Note or Season Ticket will be required to accompany the waste load during delivery 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 and waste testing results to ensure that only permitted waste streams are approved for delivery to the Site. Non-permitted wastes or other unsuitable wastes will not be accepted. Any pre-acceptance documentation that indicates a hot load will result in its refusal prior to delivery.

5.1.3 Checks will 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 Site staff 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 (as appropriate) and against the waste types permitted by the Environmental Permit.

5.1.5 Every delivery of waste will be recorded, detailing the date of the transaction, weight, waste type, registered carrier, Waste Transfer 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. Waste loads will arrive in sheeted or fully enclosed vehicles. Where possible the load will be visually inspected on arrival (i.e. prior to a further check upon deposit) and any deliveries found to be non-permitted or at an elevated temperature will not be accepted.

5.1.6 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.

5.1.7 A banksman will instruct waste delivery drivers to the appropriate part of the Site for off-loading, according to the type of waste being delivered, to ensure materials are stored and processed separately.

5.1.8 A visual inspection of the contents of all waste loads, including those received in enclosed containers and in baled form, will be made during deposit.

5.1.9 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
- Removal of the waste to the secure quarantine area, prior to off-site removal either to the waste producer or suitably authorised facility.

5.1.10 Records of all incoming waste loads will be kept on Site or in a secure location off site in accordance with The Duty of Care requirements and the Environmental Permit. Full details are included in the Environmental Management System (Ref: Fiberight-Waunarlwydd-RP01-Final (EMS)).

5.2 NON CONFORMING WASTE

5.2.1 Any loads which contain non-permitted wastes shall be rejected prior to delivery or unloading. In the unlikely event that a hot load has been inadvertently deposited, it will be quenched and temporarily stored in the external quarantine area, pending its removal to the waste producer or an authorised facility. Such loads requiring quarantine before removal from the Site will be sprayed with water to suppress the temperature. As the material cools it will be turned either manually or mechanically (depending on its nature and the quantity present) if it is safe to do so, which will allow the heat to dissipate and additional water to be applied. Details of the external quarantine area are included as Section 12.

5.3 DAILY WASTE THROUGHPUT AND STORAGE CAPACITY

5.3.1 The maximum amount of waste received per day will be 200 tonnes. A maximum of 400 tonnes of waste will be stored on site at any one time. Wastes input control will be managed so that the 400 tonnes storage limit is not exceeded (under the Operator's contractual agreements with waste delivery companies, materials do not have to be accepted at the Site, i.e. they are not contractually obliged). 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.

5.3.2 Wastes will arrive in two main forms, either baled or loose.

5.4 WASTE RECEPTION BAYS

5.4.1 The Site will incorporate three waste reception bays inside the building (it is not possible to construct an individual bay for each waste code). Each bay will be 10m wide, 9.5m deep and 4m high and will comprise a fireproof concrete push wall and two fireproof concrete sidewalls (the fire resistance specification of the concrete will be a minimum of 120 minutes). Wastes will be stored to a maximum height of 3m and a maximum depth of 8.5m of in each bay, thereby maintaining a 1m high headroom above and in front of the waste.

5.4.2 One waste reception bay will be used for the receipt of baled wastes and the other for unbaled materials. The third bay will be used for rotation purposes so that whilst one bay is being emptied for processing, the third bay can be used for receipt of incoming materials. In this way each bay will be emptied completely prior to being refilled. Prior to the weekend, all three bays will be filled with the expectation that they will be emptied and cleaned over the weekend. Once empty each bay will be thoroughly swept, including the corners, to ensure all wastes and debris are removed and the potential for wastes and dusts to accumulate over time is prevented. The overall stock holding for all incoming waste on site would be 400 tonnes.

5.4.3 A banksman will direct waste delivery drivers to reverse up to the appropriate bay for unloading (waste reception bays and labelling are shown on Drawing 'Site Location and Layout'). Bales will be unloaded and then transferred and stacked by mobile plant up to 4 high in a bay (each bale is 750mm thick, therefore 4 high equals a total height of 3m (i.e. 4 x 750mm)). The maximum storage of volume of bales in a bay will be 255m^3 (10m x 8.5m x 3m).

5.4.4 Loose waste will be tipped from the delivery vehicle and bulked up in the appropriate bay by mobile plant. Assuming the piled waste forms a cone, the maximum quantity of loose waste in a bay will be circa 127.5m^3 (0.5 x (10m x 8.5m x 3m)). Further details are provided in Table 2 and Section 9.

5.5 PRODUCT STORAGE BAYS

5.5.1 Eight product storage bays will be constructed at the Site. Each bay will be 6.5m wide, 7m deep and 4m high and will comprise a fireproof concrete push wall and two fireproof concrete sidewalls (the fire resistance specification of the concrete will be a minimum of 120 minutes). Product will be stored to a maximum height of 3m and a maximum depth of 6m in each bay, thereby maintaining a 1m high headroom above and in front of the material.

5.5.2 The location and type of material to be stored in the product bays is shown on Drawing 'Site Location and Layout'. To maintain operational flexibility, it is likely that different products will be stored in an individual bay at certain times throughout the life of the Site, as customer demands will not always be fixed (e.g. the demand for one product may increase, whilst another decreases). However, the storage limits in each bay specified above will be maintained at all times.

5.5.3 Separation distances from the front of the waste reception bays and product storage bays to processing plant equipment is shown on Drawing 'Site Location and Layout'. The waste reception and product storage bays are all designed and located so that there are no other stockpiles in front of the open side of the bay and the distances to the building meet the requirements of 'Fire Prevention and Mitigation Plan Guidance – Waste Management, Guidance Note 16, Version 2' (Natural

Resources Wales, August 2017) (i.e. baled stack to baled stack or building, and loose stack to loose stack or building are all compliant).

5.5.4 Roll on roll off containers will be used to collect ferrous metal and non-ferrous metals at the point of separation in the waste processing plant (see Section 14). The containers are portable and would be removed by fork lift truck in the event of a fire to avoid any risk of them catching alight, although due to the purity of the separated metals this is considered a low risk. Alternatively, a fire in the containers would be extinguished by the automated water cannons, after which they would be moved to the external quarantine area.

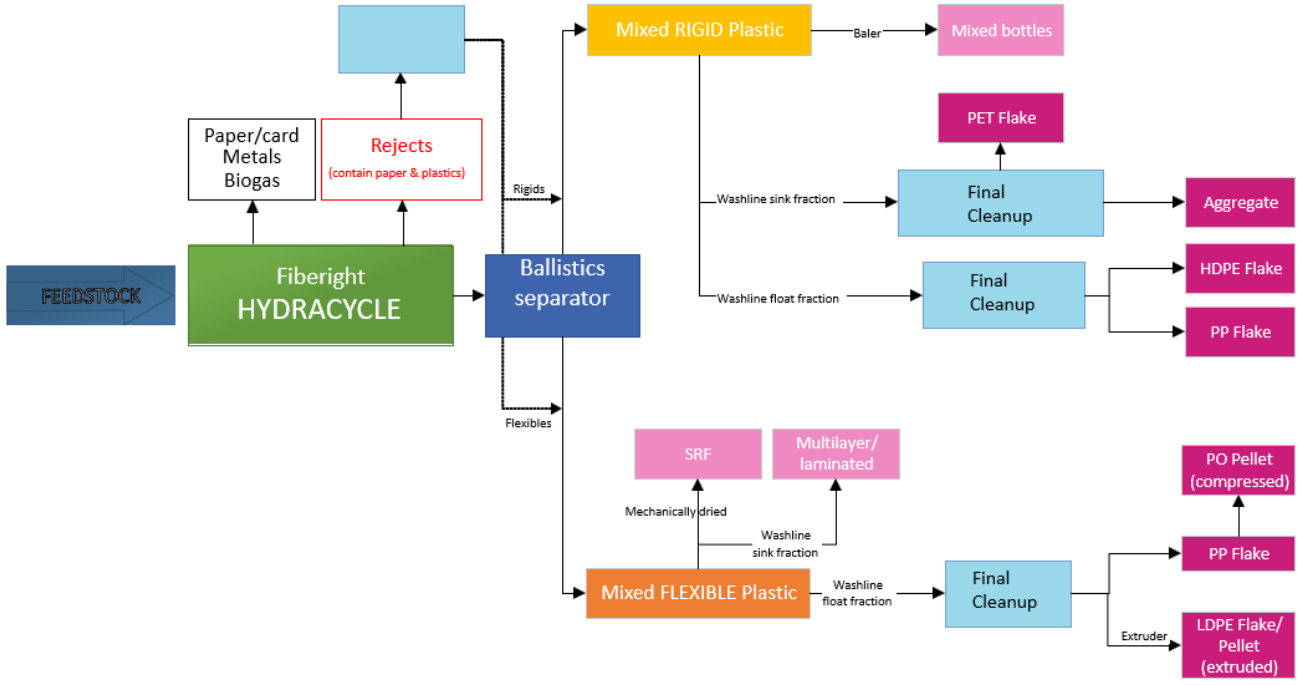
5.6 PEDESTRIAN EMERGENCY EXIT

5.6.1 A 3m wide pedestrian exit route will be located behind the storage bays so that site operatives and any visitors in the building can safely exit the premises in the event of a fire incident, see Drawing 'Site Location and Layout'. Pedestrian access doors are located at the south west corner and southern end of the building, in addition to the vehicular access roller shutter door that would also be opened in the event of an emergency. The layout of the Site is such that the internal perimeter of the building is clear of waste, plant and equipment.

5.7 WASTE PROCESSING

5.7.1 A detailed description of the waste processing operations are included in the EMS and summarised in Figure 1 below.

Figure 1: Process Flow



5.7.2 Waste processing comprises:

- A drum pulping unit. A mechanical grab will be used to transfer incoming wastes from the fireproof waste storage bays into the feed hopper of a drum pulping unit. Water is added to the pulper on a closed loop system to aid the sorting and separation of materials. Materials are passed through screens (typically set between 50mm and 80mm, depending on operational requirements) to separate a <50mm to 80mm fraction and a >50mm to 80mm fraction.

- The small fraction (i.e. <50mm to 80mm) discharges into a biomass hopper from where materials are conveyed to washing tunnels, which comprise various modules. Water is used to saturate the <50mm to 80mm pulp fraction to further assist separation and recovery. Other modules are used to wash out any organic waste contamination and clean the pulp and plastics to an acceptable quality. Further modules are then used to recover excess washing water from the pulp for recirculation and reuse and to clean and separate the plastic. The washing tunnels thereby produce a clean organic pulp fraction, a clean plastic fraction and a rejects fraction. All three fractions are conveyed to the post wash for further processing.

- The post wash. In the post wash, the organic pulp fraction is passed through a screw press to remove excess moisture and conveyed for loading into lorries for supply to customers as a recycled pulp raw material. The clean plastic fraction is further processed in the plant. The rejects fraction is conveyed to a screw press to remove excess water and then to a reversible conveyor, where remaining plastic film can be separated for washing and recovery. The remaining reject material is removed from the Site as waste to authorised facilities.

- The ≥50mm/80mm fraction is passed through a coarse screen (typically 250mm), to separate materials from oversize wastes such as plastic film. The smaller fraction (typically ≥50mm/80mm to 250mm) is conveyed to an air classifier, where lighter materials are separated from the heavier fraction. Lighter fraction materials such as plastic film are separated for onward washing, whilst remaining materials are used for pelletising. The heavier fraction is conveyed to a picking station where rigid plastics are manually separated for washing and bailing, whilst remaining materials are conveyed to an over band magnet and eddy current separator for ferrous and non-ferrous metal recovery. Both ferrous and non-ferrous are separately baled prior to removal from the Site. Remaining materials are passed to a shredder, a screw press (to remove excess moisture) and cyclone to facilitate separation and onward processing.

- The oversize fraction (typically >250mm) is shredded and conveyed to a cyclone to separate plastic film from other materials that can be further processed and recovered. Plastic film is washed and passed to a screw press (to remove excess wash water) to facilitate its' recovery.

- Plastics removed at the pulping and initial sorting stages are further processed to separate them into different polymer types.

- Materials are fed to ballistic separators, which separate mixed rigid plastics and mixed flexible plastic.

- Mixed rigid plastics are processed using a series of proprietary technologies, which first separate the Polyethylene Terephthalate (PET) and then produce concentrated

Polypropylene (PP) and Polyethylene (PE) streams that are suitable for direct supply to plastic product manufacturers. By separating plastics into their various polymer types, recycling and recovery rates are enhanced, including materials such as plastic film that were previously difficult or impossible to recycle.

- Mixed flexible plastics are also separated into specific factions including Polypropylene (PP), Low Density Polyethylene (LDPE) and multi-layered laminate. The small, residual fraction is shredded and mechanically dried and added to the small residual fraction from the pulp recovery to produce a Solid Recovered Fuel (SRF), for export off site. The total quantity produced will be 20 tonnes per day on average, with a maximum capacity of 25 tonnes per day (full details are included in the EMS, paragraphs 4.5.4 to 4.5.6).

5.7.3 The separation technologies used at the Site will enable very high rates of recycling to be achieved, typically 70% or greater, and allow a wide range of materials to be recovered, including plastic film and rigid plastics.

5.7.4 The Site operates on a rapid turnover of non-hazardous wastes, which results in a maximum duration of any incoming waste storage to be 4 days prior to processing. Once empty each bay will be thoroughly swept, including the corners, to ensure all wastes and debris are removed and the potential for wastes and dusts to accumulate over time is prevented. Generally there will be a regular turnover of waste mitigating against the development of hot spots.

5.7.5 In the event of a plant breakdown which results with the incoming material being held on site for longer than 4 days, the procedure will be to monitor the stock as described in Section 7.20, 'Fire Watch Procedures'. If there is any evidence of rapid temperature increase the material in question will be quenched with water and removed to the quarantine area until such time as the plant recommences production. Any further planned deliveries will be delayed or diverted to suitable alternative processing facilities until the plant is operational.

5.8 SITE PLAN

5.8.1 The site layout and fire mitigation infrastructure are shown on Drawing 'Site Location and Layout'. A copy of the drawing is included with this FPMP.

5.9 FIRE ENGINE ACCESS

5.9.1 In the event of an emergency fire incident, fire engines would access Westfield Industrial Estate along Titanium Road. The Site is located to the immediate south of the road. A concrete access road has been constructed across the external area of the permitted site (to the immediate west of the building), up to the roller shutter vehicular access doors at the western end of the structure. Fire engines would use this entrance to gain access to the building. As the Site will be manned on a 24 hours 7 days basis, staff would open the roller shutter door in an emergency incident so that fire engines could gain access.

6 SENSITIVE RECEPTORS

6.1.1 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.

6.1.2 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 Figures 2 and 3. Statistics are based on observations taken from the nearest weather station at Swansea Bay / Mumbles Head (circa 9.225 km south of the Site) between November 2000 and November 2021 indicates that prevailing winds originate predominantly from the south west with an average wind speed of 13 Knots, see Figure 2. The wind rose data is shown in Figure 3.

Figure 2: Monthly wind speed statistics and directions for Swansea Bay / Mumbles Head

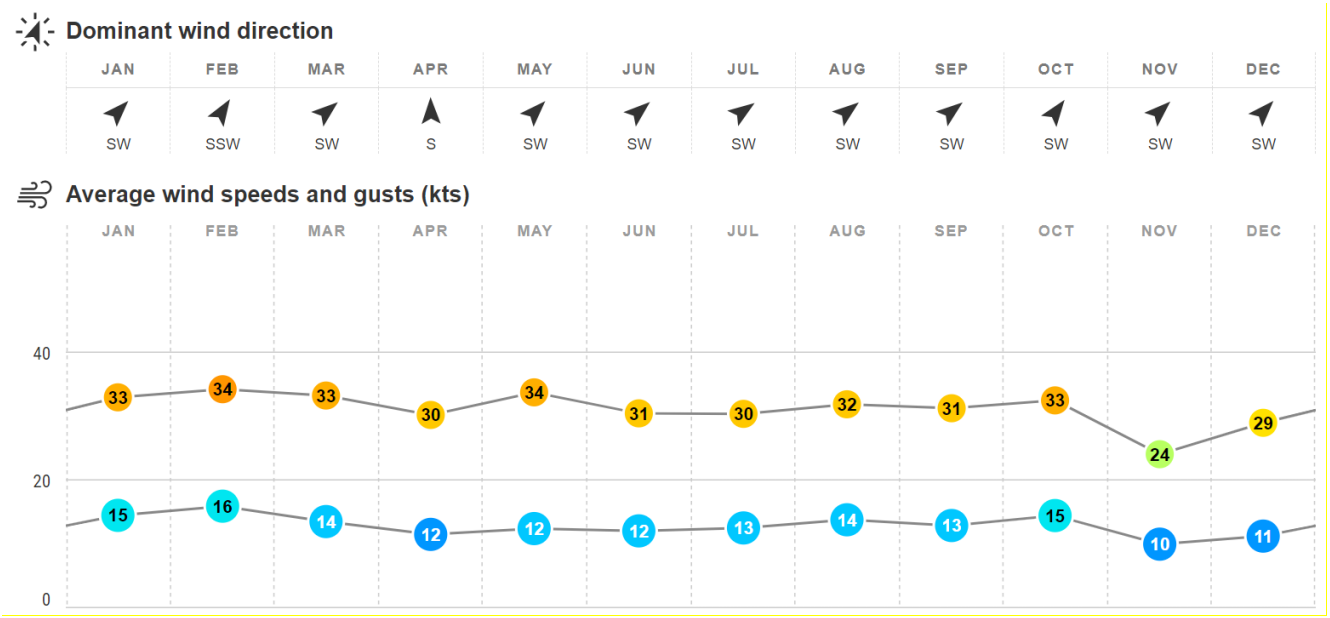
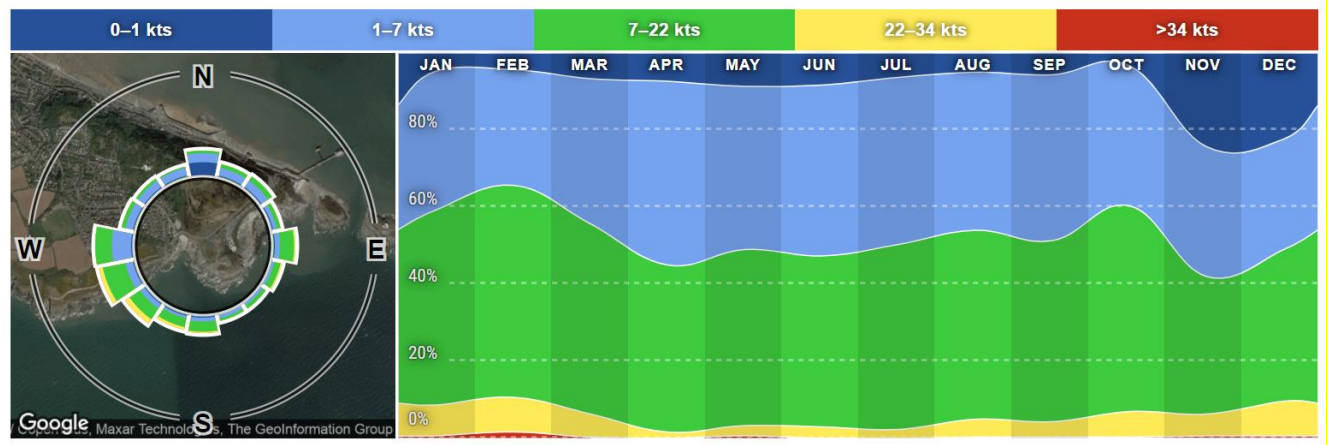


Figure 3: Monthly wind direction and strength distribution



6.1.3 Meteorological Office predictions and recordings of local weather data (https://www.metoffice.gov.uk/weather/forecast/gcjju40vj#?nearestTo=Waunarlwydd%20(Swanse

a)&date=2023-02-10) will be reviewed by the Health and Safety Manager to allow forward planning and information gathering on the direction that smoke would travel from the Site in the event of a fire incident. Daily observations of weather conditions, including wind speed, direction and temperature will be made.

6.1.4 The nearest residential properties to the Site are located to the east, south and south east in Waunarlwydd, i.e. on Titanium Road (circa 330m east), Bridge Road (circa 385m distant), Meadow Croft Close (circa 470m) and on Roseland Road to the east (circa 465m).

6.1.5 Nearby neighbouring businesses on Westfield Industrial Estate include:

- Hill Group (a manufacturing and installation company specialising in insulation, trace heating, electrical install and glass reinforced plastic), circa 50m to the south west of the Site:
- Real Alloy (an aluminium recycling facility), circa 190m to the west;
- Cymru Coaches Ltd, circa 30m to the south;
- Timet UK Ltd (a titanium products manufacturing company), circa 45m to the north.

6.1.6 There are no Special Protection Areas (SPAs), Special Areas of Conservation (SACs), RAMSAR sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNR) or Marine Conservation Zones within 3km of the Site. Therefore, these types of receptor are not considered further in this FPMP because the potential for significant smoke impact from the Site at this distance is very low.

6.1.7 Cwmllwyd Wood Local Nature Reserve (LNR) is circa 1.4km south southeast of the Site. In addition, NRW has identified six Sites of Importance for Nature Conservation (SINCs) within a 1km radius of the Site:

- Main Swansea - Fishguard railway line, circa 410m south of the Site at the closest point;
- Penyfodau Fawr to Llewith, circa 590m northwest of the Site;
- Mynydd Bach-Y-Glo), circa 475m southeast of the Site;
- Alcoa Wet Meadows, circa 330m west of the Site;
- Dunvant Brickworks, circa 665m south southeast of the Site;
- Gowerton Mart Woods, circa 325m west of the Site.

6.1.8 There are pockets of ancient woodland in the vicinity of the Site. The nearest is circa 400m northwest of the Site, which is downwind of the prevailing wind direction.

6.1.9 The nearest AONBs and National Parks to the Site are the Gower AONB (circa 3.5km southwest) and the Brecon Beacons National Park (circa 23km to the northeast). Therefore, these receptors are not considered further in this FPMP as the potential for significant smoke impact from the Site at this distance is very low.

6.1.10 The Site is not located within 3km of a groundwater Source Protection Zone. Therefore, this type of receptor is not considered further in this FPMP.

6.1.11 The Groundsure Report for the Site shows that there are no groundwater abstractions within 2km. There is one active surface water abstraction 1,646m northwest of the Site. At these distances, groundwater and surface water abstractions are not considered further in this FPMP.

6.1.12 Sensitive receptors at potential risk from fire and any smoke emissions at the Site are shown on the Drawing 'Receptor Location Plan' and are listed in Table 2 below.

6.1.13 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 2 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.

Table 2: Assessment of Fire and Smoke Risks at Sensitive Receptors

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
Medical					
West Coast Dental Care (info@westcoastdental.co.uk) (01792 873483)	590m SW	Low	Low/Moderate	Located upwind of the prevailing wind direction and relatively distant from the site (over 500m). There are tall industrial buildings and a belt of trees between the Site and the receptor, which may afford some protection from smoke emissions. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Residential Care Home					
Ty Waunarlwydd (01792 872255)	480m S	Low	Low/Moderate	Located upwind of the prevailing wind direction. There is a thick belt of trees at the southern end of Westfield Industrial Estate (i.e. between the Site and the care home), which may afford some protection from smoke emissions. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Ashgrove House (01792 879767)	650m SW	Low	Low/Moderate	Located upwind of the prevailing wind direction and relatively distant from the site (over 500m). There are tall industrial buildings and a belt of trees between the Site and the care home, which may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Ty Victoria (01792 874306)	750m S	Low	Low	Located upwind of the prevailing wind direction and relatively distant from the site (over 500m). There is a thick belt of trees at the southern end of Westfield Industrial Estate (i.e. between the Site and the care home), which may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Schools and Colleges					
Ysgol Gynradd Gymraeg Y Login Fach Primary School	780m SE	Low	Low	Located upwind of the prevailing wind direction and distant from the site (over 750m). There are thick belts of trees between the Site and the school, which may afford some protection from smoke. Fire prevention	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
(ygg.loginfach@swansea-edunet.gov.uk) (01792 874399)				and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	
Waunarlwydd Primary School (01792 872431)	785m SW	Low	Low	Located upwind of the prevailing wind direction and distant from the site (over 750m). There are tall industrial buildings and a belt of trees between the Site and the school, which may afford some protection form smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Residential Properties					
Keepers Lodge Farm	800m E	Low	Low	Although the dwelling is downwind of the prevailing wind direction it is distant from the site (over 750m). There are belts of trees and shrubs that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Titanium Road	330m E	Moderate	Moderate	Located downwind of the prevailing wind direction. There are belts of trees and shrubs between the two locations, which may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Property off Roseland Road	390m ESE	Moderate	Moderate	Residential receptor is downwind of the prevailing wind direction. There are thick belts of trees and shrubs, which that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Property off Roseland Road	395m SE	Moderate	Moderate	Residential receptor is upwind of the prevailing wind direction. There are thick belts of trees and shrubs between the two locations, which that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Bridge Road	385m S	Moderate	Moderate	Residential receptor is 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

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
Meadow Croft Close	485m S	Low	Low/Moderate	Located upwind of the prevailing wind direction. There is a thick belt of trees between the Site and the residential properties, which may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Westfield Road	395m SSW	Moderate	Low/Moderate	Residential receptor is upwind of the prevailing wind direction. There are tall industrial buildings and a belt of shrubs and trees between the Site and the residential properties, that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Laurel Drive	430m SW	Low	Moderate	Located upwind of the prevailing wind direction. There are tall industrial buildings and a belt of shrubs and trees between the Site and the residential properties, that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Industrial and Commercial					
Timet UK (01792-873471)	45m N	Medium/High	High	The company is in close proximity to the site and there is the potential for significant smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low
Driving Instructor Services (01792 585178)	80m WNW	Medium/High	High	Although the company is located upwind of the site, it is in close proximity and there is a significant risk of smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
Hill Insulation (01792 899177)	50m SW	Medium/High	High	Although the company is located upwind of the site, it is in close proximity and there is the potential for significant smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low
Cymru Coaches (01792 583610) (enquiries@cymrucoaches.co.uk)	30m S	Medium/High	High	Although the company is located upwind of the site, it is in close proximity and there is a significant risk of smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low
Real Alloy (01792 871000)	190m W	Medium	Medium	Although the company is located upwind of the site, it is in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low
Cogent (01792585444)	205m ESE	Moderate	Moderate/ Medium	This company is in relatively close proximity and there is the potential for smoke impacts at this distance. Therefore it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	Low
A 2 Z of Motoring (03300 505 152)	295m S	Moderate	Moderate/ Medium	Located upwind of the prevailing wind direction. At this distance it is important that the fire prevention and mitigation measures set out in this FPMP are implemented to minimise the possibility of a fire incident	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
				occurring. The risk of a fire causing adverse impacts is still considered low because of the automated fire detection system in place, the use of automated water cannons to immediately combat a fire and occupancy of the Site on a 24 hours, 7 days basis.	
Substation	300m ENE	Moderate	Moderate/ Medium	Although this receptor is located downwind of the prevailing wind direction, it is generally unmanned and is considered relatively low risk in terms of its sensitivity.	Low
Sports and Playing Fields					
Waunarlwydd Rugby Club (01792 873285)	555m SE	Low	Low/Moderate	Relatively distant from the site (over 500m). There are thick belts of trees and shrubs between the two locations, which that may afford some protection from smoke. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Community Facilities					
Waunarlwydd Community Centre (07936 391000) (WaunarlwyddCC@yahoo.com)	715m S	Low	Low/Moderate	Upwind of the prevailing wind direction and relatively distant from the site (over 500m). There is a thick belt of trees at the southern end of Westfield Industrial Estate (i.e. between the Site and the community centre), which may afford some protection. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Railway					
Rail Line	410m S	Low	Low/Moderate	Upwind of the prevailing wind direction. Smoke is 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 maintain the line in proximity to the site would have longer periods of occupancy. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Surface Water					
Afon Lian	405m N	Low	Low/Moderate	Downwind of the prevailing wind direction. Smoke is unlikely to cause any significant impacts at this distance on water quality or flora and fauna	Low

Receptor	Distance from Site	Risk Without Mitigation	Unmitigated Consequences	Comments	Risk After Mitgation
				associated with the river. Personnel accessing the river in proximity to the site could have potential exposure to smoke for relatively short periods. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	
Agricultural Land					
Agricultural Land	200m NE (arable land 500m NW)	Moderate	Moderate/ Medium	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. However, agricultural workers could have potential exposure to smoke for relatively short periods. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Ancient Woodland					
Ancient Woodland	400m NW	Low	Low/Moderate	The nearest ancient woodland, which is also downwind of the prevailing wind direction, is circa 400m from the Site. At this distance smoke is considered unlikely to cause significant impacts to the flora and fauna.	Low
Designated Habitat Sites					
Cwmllwyd Wood Local Nature Reserve (LNR)	1410m SSE	Low	Low	The designated nature site is distant from the site and unlikely to be impacted by smoke.	Low
Main Swansea - Fishguard Railway Line SINC	410m S	Medium	Low/Moderate	Upwind of the prevailing wind direction. Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Penyfodau Fawr to Llewith SINC	590m NW	Low	Low	Upwind of the prevailing wind direction and relatively distant from the Site (over 500m). Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Mynydd Bach-Y-Glo SINC	475m SE	Low	Low/Moderate	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. 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 Mitgation
Alcoa Wet Meadows SINC	330m NW	Medium	Low/Moderate	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
Dunvant Brickworks SINC	665m SSE	Low	Low	Upwind of the prevailing wind direction and relatively distant from the site (over 500m). Smoke is unlikely to cause any significant impacts on flora and fauna associated with the habitat site at this distance. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Gowerton Mart Woods SINC	325m W	Medium	Low/Moderate	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. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low
Penyfodau Fawr to Llewith SINC	590m NE	590m NW	Low	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. Fire prevention and mitigation measures set out in this FPMP will be implemented to minimise impacts on sensitive receptors.	Low

7 MANAGE COMMON CAUSES OF FIRE

7.1 ARSON

7.1.1 The building is fully secured. The roller shutter vehicle access door and pedestrian entrance and emergency exit doors are lockable. A comprehensive CCTV security system has been installed, with 12 No cameras fitted to provide complete coverage of the Site. In addition, the Site will be operational on a 24 hours 7 days basis so that it will be permanently manned. A gatehouse and security barriers are located at the entrance to the industrial estate from Titanium Road. This ensures a very high standard of security is maintained at the Site.

7.1.2 The high standard of site security to prevent and detect any attempts at unauthorised entry minimises the potential for arson attacks or vandalism.

7.2 VISITORS AND CONTRACTORS

7.2.1 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 facility during a fire incident or fire alarm and details of the mitigation measures in place.

7.3 IGNITION SOURCES

7.3.1 Waste will not be burnt at the Site and there will be no waste incinerator plant or industrial heaters.

7.3.2 Any ignition sources, e.g. during hot works, will be kept at least 6m away from combustible wastes.

7.4 SELF COMBUSTION

7.4.1 The waste types and processing activities undertaken on site are not anticipated to 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.

7.4.2 All materials will be processed, recycled and dispatched from the facility within a maximum of 10 weeks from initial receipt. Measures to prevent self-combustion are detailed in Section 8.

7.5 PLANT AND EQUIPMENT FAILURE

7.5.1 Plant and equipment preventative maintenance procedures and record keeping form part of the EMS for the Site. As a part of these procedures all plant and equipment which requires maintenance will be assessed for fire risk. Checks will be programmed, and records will be retained with a log of maintenance carried out.

7.5.2 Site vehicles will be fitted with dust filters, fire extinguishers and spark arrestors. Where practicable any bucket loaders will be fitted with rubber strips along the bottom of the bucket. Vehicles and equipment will be regularly inspected for electrical faults. When not in use vehicles will be stored

away from any combustible waste materials.

7.6 SMOKING POLICY

7.6.1 The Site will operate a strict no smoking policy.

7.7 HOT WORKS

7.7.1 A hot work management system will operate on site. 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.

7.7.2 All hot work activities conducted by employees or contractors on site will be controlled in accordance with the Operator's management procedure FR-MP-013 Control of Welding. The hot work activities will be controlled by a "hot work permit" (see Appendix 1)and the controlled fire watch will be carried out for at least 60 minutes after the hot work activity has ceased and the area will be specifically revisited periodically throughout the shift and recorded in the fire risk section of the Supervisor's shift handover report.

7.8 INDUSTRIAL HEATERS

7.8.1 There will be no industrial heaters on site.

7.9 HOT EXHAUSTS AND ENGINE PARTS

7.9.1 All waste storage areas on site will be subject to periodical Fire Watch checks by the supervisor and recorded in the supervisors shift handover report. As a minimum Fire Watch checks will be undertaken at the start of end of each working shift (i.e. a minimum of 6 in a 24 hours day). Each check is anticipated to take a minimum of 30 minutes.

7.9.2 Each shift has an allocated trained Fire Marshal and all employees to receive fire awareness training.

7.9.3 All mobile plant are subjected to prestart inspections in line with the Operator's management procedure FR-MP-014 Equipment Pre-Use Inspections, which includes check for dust build up or fluff settled onto hot exhausts and engines. Visual inspections will be made for the emission of any hot sparks from vehicle exhausts on entering in to 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.

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

7.10 DAMAGED OR EXPOSED ELECTRICAL CABLES

7.10.1 Site operatives are required to report any damaged or exposed cables to the Health and Safety Manager or, in his absence, the Site Manager or other Technically Competent Person. 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.

7.10.2 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.

7.11 ELECTRICAL FAULTS

7.11.1 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 vehicles and equipment will be regularly inspected for electrical faults, including damaged or exposed electrical cables.

7.12 REACTIONS BETWEEN WASTES

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

7.13 HOT LOADS INADVERTENTLY DELIVERED TO THE SITE

7.13.1 Any hot loads inadvertently delivered to the Site will be detected by site staff either during delivery or tipping 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 external quarantine area. 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 or water storage tank if necessary to reach all waste storage bays and containers and the external quarantine area.

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

7.14 BUILD-UP OF LOOSE COMBUSTIBLE WASTE, FLUFF AND DUST

7.14.1 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 10 weeks from initial receipt. As part of this policy, waste storage bays are emptied frequently and the bays 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.

7.14.2 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 Health and Safety Manager, Site Manager or other Technically Competent Person.

7.14.3 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.

7.15 TRAMP METAL

7.15.1 The plant has been designed to separate and remove any residual ferrous or non-ferrous metals. Input materials are conveyed to an over band magnet and eddy current separator for ferrous and non-ferrous metal recovery, which are collected separately in moveable roll on roll off containers located beneath the separation and removal chutes on the conveyor system.

7.15.2 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.

7.15.3 All plant and equipment are subjected to regular maintenance, inspection and cleaning regimes. Suitably trained personnel carryout 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 in accordance with the Site's EMS (see Fiberight-Waunarlwydd-RP01-Final, Rev C). An investigation is undertaken to establish the root cause of the Non Conformance, with mitigating measures implemented as a matter of urgency.

7.16 BATTERIES

7.16.1 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. Bales are split before being fed into the processing plant and a visual inspection of the spilt bale and loose wastes will be made before materials are processed at the Site.

7.17 BATTERIES IN ELVS

7.17.1 The Site does not accept ELVs nor depolluted car shells.

7.18 CYLINDER STORAGE

7.18.1 Any cylinders stored on site would be located in a dedicated cage (except fire extinguishers, which will be located at the points shown on Drawing 'Site Location and Layout').

7.19 LEAKS AND SPILLAGES OF OILS AND FUELS

7.19.1 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 form part of the EMS for the Site (see EMS, Appendix 2 'Refuelling and Emergency Spillage Procedure').

7.19.2 Contaminated spill kits and absorbent will be stored in a sealed container for authorised disposal off site. Spill kit locations are shown on Drawing 'Site Location and Layout'.

7.19.3 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.

7.20 FIRE WATCH PROCEDURES

7.20.1 At the beginning and end of each working shift a Fire Watch will be carried out (i.e. a minimum of 6 in 24 hours). 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.

7.20.2 As part of the Fire Watch checks, selection of processed bales of film materials will be subjected to temperature checks by the quality controller and results are recorded in the Operator's Quality Control reports.

7.20.3 Each shift has an allocated trained Fire Marshal and all employees to receive fire awareness training.

7.20.4 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.

7.21 FIRE ALARM

7.21.1 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. Visual fire warning indicators (strobes) have also been installed. Additionally, audible warning is provisioned by the installation of sounders. Both visual and audible warnings are triggered on activation of the fire detection system. The control panel will provide two sounder circuits and will monitor all zones, power supply and sounder circuits for any faults. Manual Call Points (x6) have been installed at strategic points throughout the facility.

7.22 HOT AND DRY WEATHER

7.22.1 All wastes will be treated 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. In such circumstances the pile will be spread out and water applied to ensure that all materials within the core of the stockpile (and not just external edges) are doused with cooling water.

7.23 ESCAPE OF SMOKE FROM THE BUILDING IN THE EVENT OF A FIRE

7.23.1 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.

8 STORAGE TIMES AND PREVENTION OF SELF COMBUSTION

8.1 WASTE STORAGE TIMES

8.1.1 The Site operates a first in first out policy to ensure non-hazardous wastes are processed within 48 hours of receipt, although this may increase to 4 days during weekends and Bank Holidays. 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 3m.

8.1.2 In addition, once incoming wastes are fed to the drum pulper unit the addition of water to aid the hydrolysis and separation processes ensures that materials are predominantly processed in a wet condition, which further reduces the risk of fire.

8.2 METHODS USED TO RECORD AND MANAGE WASTE STORAGE

8.2.1 Every delivery of waste to the Site will be recorded, detailing the date of the transaction, weight, waste type, registered carrier, Waste Transfer Note or Season Ticket number, (as appropriate), vehicle registration 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 (see Section 5.1).

8.2.2 Bays used for the receipt of wastes will be completely emptied and swept (including the corners of bays) every 48 hours, although this may increase to 4 days during weekends and bank holidays. Checks are made during daily site inspections by the Site Manager or other Technically Competent Person to ensure all bays are emptied and cleared completely, thereby ensuring that all materials are processed and dispatched from the Site and not allowed to accumulate over extended periods of time.

8.3 MONITOR AND CONTROL TEMPERATURE

8.3.1 The Environment Agency commissioned BRE Global Limited to carry out a review of Fire Prevention Plan document '160527 FPP v3 final draft. The BRE Global report includes the results of isothermal self-heating test data (based on test methodology in BS EN 15188 ''Determination of spontaneous ignition behaviour of dust accumulations') on a range of waste types comprising: wood chip, rubber crumb and secondary recovered fuel (SRF). The time to ignition determined during the testing ranged from 74 to 106 days storage for a 4m high stockpile of waste (stockpile heights on site will not exceed 3m).

8.3.2 As the incoming waste stored will only be stored for a maximum of 4 days prior to processing and

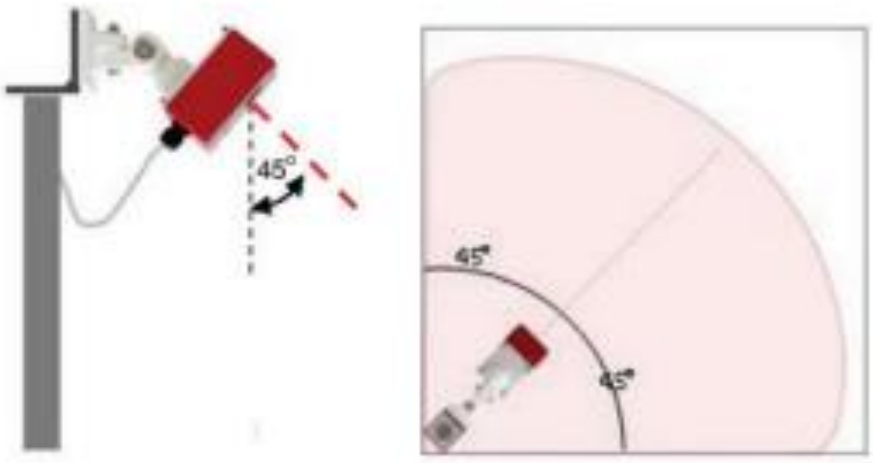
recycling, it is highly unlikely that spontaneous ignition of waste will occur on site. Notwithstanding this as a worst-case scenario it is proposed that a trigger level of 47°C will be used on site. This would give the Operator an early warning that temperatures may approach 57°C, which is the lowest critical temperature determined during the BRE Global trials for spontaneous ignition to occur in a 4m high stockpile. This is seen as a very conservative approach to ensure that temperatures where spontaneous combustion could occur are never reached.

8.3.3 If the trigger level of 47°C is reached in any waste stockpile, the stockpile 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.

8.3.4 Thermal detection cameras have been installed at the Site and will be used to identify any build-up of heat in the waste stockpiles. Based on the temperatures measured, the cameras will sound an alarm in the event of a temperature exceeding the pre-set threshold of 47°C. Instead of issuing an alarm when smoke is already building up, the thermal cameras would do so before smoke arises. Once the temperature limit is in danger of being reached, a pre-alarm is activated in advance so that the situation can be monitored and mitigation measures undertaken to reduce the risk in a timely manner. In the unlikely event that the temperature limit is actually reached, an alarm is issued, thereby ensuring action can be taken before a fire breaks out. The thermal detection cameras have been awarded CNPP certification and comply with fire insurers' requirements. The thermal cameras ensure monitoring of potential heat build-up at all times.

8.3.5 In addition, 6 x FSL 100 flame detection units have been installed at the Site (2 additional FSL 100 flame detection units to be installed) . The FSL100 flame detector has a cone of vision of 90° and range of 35m so it can monitor an area extending from floor to ceiling and extending to approximately 35m (FLS100-IR3). Figure 4 illustrates the Cone of Vision of each FSL100 flame detector.

Figure 4: Cone of Vision



8.3.6 The fire detection system will be serviced every 6 months by a suitable accredited company.

8.4 DEALING WITH HOT WEATHER AND HEATING FROM SUNLIGHT

8.4.1 As all wastes are tipped, stored and processed inside the building and recycled products are loaded inside for off-site dispatch to customers, there is no direct heating from sunlight. In addition, water will be applied to waste stockpiles, using a hose, during hot weather to reduce temperatures where required.

8.5 BALED WASTE

8.5.1 Wastes delivered to the Site in baled form will be stored in a fireproof concrete bay before being 'broken' and transferred to the feed hopper of the drum pulper unit for pulping and onwards materials recovery (see Section 10).

9 MANAGING WASTE MATERIAL STACKS

9.1 STORING WASTE MATERIALS IN THEIR LARGEST FORM

9.1.1 The purpose of the Site is to recycle and recover non-hazardous waste.

9.1.2 Waste delivery vehicles will reverse into the building through roller shutter doors located at the western entrance. Unbaled materials will be tipped on to the concrete floor of the building from where they will be transferred by grab or loading shovel into a dedicated waste reception bay prior to being fed into the processing plant. Baled wastes will be off-loaded and transferred to the appropriate waste reception bay, where they will be temporarily stacked using mobile plant or split and fed directly into the processing plant.

9.1.3 The bays will be emptied in series so that materials are processed on a first in first out basis (i.e. bays containing the longest deposited materials will be emptied first).

9.1.4 Wastes are primarily stored in their largest form before being fed to the feed hopper of the drum pulping unit for onward processing and recovery.

9.2 MAXIMUM PILE SIZES

9.2.1 Waste stockpile sizes are shown in Table 3 below and locations are shown on Drawing 'Site Location and Layout'.

9.3 WASTE STORED IN CONTAINERS

9.3.1 Ferrous and non-ferrous metals will be stored in separate roll on roll off containers located at the point of separation in the waste processing plant (see Section 5.5 and Drawing 'Site Location and Layout). The RORO containers measure 22 feet long x 8 feet high and 8 feet wide (6.7m long x 2.4m high and 2.4m wide), are portable and would be removed by fork lift truck in the event of a fire to avoid any risk of them catching alight. In the unlikely event of a fire in the containers (due to the purity of the separated metals), they would be moved to the external quarantine area to allow them

to cool completely after being doused with water by the automated water cannons.

9.4 SEPARATION DISTANCES

9.4.1 The waste reception bays and product storage bays will each comprise a fireproof concrete push wall and two fireproof concrete sidewalls (the fire resistance specification of the concrete will be a minimum of 120 minutes).

9.4.2 The open side of each bay will meet the requirements of the separation distances shown in the NRW 'Fire Prevention and Mitigation Plan Guidance – Waste Management' (Figure 2 in the guidance). 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'.

9.4.3 Notwithstanding these separation distances, the Site incorporates thermal detection cameras (awarded CNPP certification), FSL 100 flame detection units (x 6 No), a fire alarm system complying with BS 5839 part 1 and automated water cannons. In addition, it will be manned on a 24 hours 7 days basis.

9.4.4 The Site operates a rapid turnover of wastes and uses a first in first out policy to ensure non-hazardous wastes are stored for no longer than 4 days prior to processing and recycling, and that all materials are stored, processed and dispatched from the facility within 10 weeks of initial receipt. Waste reception bays are typically emptied each working day so that all materials are removed. The corners of bays are also swept and cleared to ensure there is no accumulation of materials over an extended time. This prevents the potential for any build-up of heat or hotspots within the waste mass.

Table 3 Waste Stockpile Sizes

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
Baled waste	Pre	Waste	See drawing DW01	Fireproof bay	8.5m	10m	3m	255m^3 (bales are 750mm thick and will be stacked up to 4 high, i.e. 3m, in the bay)	4 days
Loose waste	Pre	Waste	See drawing DW01	Fireproof bay	8.5m	10m	3m	127.5m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (10 x 8.5 x 3)	4 days
Baled waste or loose waste (in contingency bay)	Pre	Waste	See drawing DW01	Fireproof bay	8.5m	10m	3m	This bay will be used for either baled or loose waste storage, to enable waste receipt to continue whilst an adjacent bay is emptied completely (up to 255m^3 when baled waste is stored and 127.5m^3 when loose waste is stored)	4 days
Baled mixed	Post	Waste	See drawing	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a	2 months

Table 3 Waste Stockpile Sizes

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
rigids			DW01					cone, formula = 0.5 (6 x 6.5 x 3)	
Baled mixed rigids	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	2 Months
Baled and wrapped shredded film	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	2 Months
Baled and wrapped shredded film	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	2 Months
Baled and wrapped shredded film	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	2 Months

Table 3 Waste Stockpile Sizes

Waste stream	Treatment Pre/Post	Waste / Non Waste	Location	How it is stored	Maximum length	Maximum width	Maximum height	Volume	Maximum storage time
Pulp bay 1	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	10 Weeks
Pulp Bay 2	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	10 Weeks
RDF/SRF	Post	Waste	See drawing DW01	Fireproof bay	6m	6.5m	3m	58.50m^3 (angle of rest of waste in the bay forms a cone, formula = 0.5 (6 x 6.5 x 3)	7 days
Metal Ferrous	Post	Waste	See drawing DW01	RORO	6.7m	2.4	2.4m	38.59m^3	10 Weeks
Metal Non Ferrous	Post	Waste	See drawing DW01	RORO	6.7m	2.4m	2.4m	38.59m^3	10 Weeks

10 BALED WASTE STORAGE

10.1.1 Due to the density of baled wastes, it is not practicable to manually insert a probe into the centre of the waste mass to record the temperature. The thermal detection cameras installed at the Site have been awarded CNPP certification and comply with fire insurers' requirements. In the event that the cameras detect a temperature exceeding 47°C, they sound an alarm. The thermal cameras will be used to monitor baled waste temperatures.

10.1.2 Once a bale is broken, i.e. prior to feeding to the waste processing plant, it will be possible to use a probe to record temperature as a further check. The risk of fire when waste is in baled form is low due to the exclusion of oxygen from the waste mass. Once the bale is broken and oxygen introduced, the risk of fire increases. To combat this, 10 fire hoses are located on the southern internal wall of the building. Two hoses are located adjacent to the waste reception bays and other hoses are located close to the product storage bays, see Drawing 'Site Location and Layout'. In the event of a fire starting or excess heat being detected when a bale is broken, water will be applied from the hose to extinguish the fire / rapidly reduce the temperature.

10.1.3 Bales will be stacked up to 4 high in the waste reception bay. Bales will be interlaced when stacking to minimise air flow between them.

10.1.4 In accordance with the NRW guidance, the weight and composition of wastes from each supplier is sampled to ensure materials are suitable for processing at the Site.

11 ENCLOSING STACKS USING BAYS AND WALLS

11.1.1 The fireproof storage bay walls will be made of concrete panels or blocks, with a fire resistance design specification of a minimum of 120 minutes.

11.1.2 The fire resistance performance for the non-loadbearing wall assembly has been tested in accordance with clause 5 of BS476 Part 22 1987, BS476 Part 20 and recorded WF Report No: 397322.

11.1.3 Wastes will be stored to a maximum height of 3m in each bay, thereby maintaining a 1m high headroom above the waste.

11.1.4 The maximum height of the storage bay walls will be 4m. The top of all waste stockpiles stored within the bays will be at least 1m below the top of the storage bay walls and at least 1m from the front edge of the storage bay walls, thereby maintaining a 1m freeboard and minimizing the risk of a fire 'licking over' the top of a bay or bridging around the front of the bay and spreading to other combustible materials and wastes stored on site. The top and front edges of the storage bay walls will be clearly marked to indicate and maintain the safe "freeboard area". The floor area in between the storage bay will also be marked to indicate and maintain the safe freeboard area.

11.1.5 Fireproof concrete walls will be will be installed in accordance with the manufacturer's recommendations and installation requirements. An approved and suitable contractor

will undertake the installation works and, as part of the work contract, will be required to confirm that concrete walls have been installed in accordance with the manufacturer's recommendations.

11.1.6 The material storage bays will be subjected to regular inspections by the Site Manager or Health and Safety Manager and the shift supervisor (as part of the supervisor's recorded shift inspection and also recorded in the supervisors shift handover report). The material storage bay inspections will ensure that wastes are correctly stored inside the bays and that 1m freeboard requirements are being maintained at the top and at the front of each bay.

11.1.7 Stock rotation is detailed in Section 5.4.

12 QUARANTINE AREA

12.1 QUARANTINE AREA LOCATION AND SIZE

12.1.1 A quarantine area is designated on the external yard area at a minimum size of 72m^2 and is capable of holding 142.5m^3 of waste (i.e. 55% of the size of the largest waste stockpile). Its location is shown on Drawing 'Site Location and Layout'. A minimum 6m clearance distance to the site building, external waste storage bays, plant and equipment will be maintained at all times. It will comprise a kerbed concrete pad and 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). In the event of a fire incident, any liquors that collect in the kerbed area will be tankered off site to an authorised wastewater treatment works. When the quarantine area is empty and clean, which will be either always or the vast majority of the time, only rainwater will collect in the kerbed area. This will be pumped to foul sewer in accordance with the Trade Effluent Discharge Consent.

12.1.2 The quarantine area will be clearly identified and signposted to only allow the storage of fire damaged materials, or for materials which are showing signs of overheating to cool, and for any hot materials, following quenching, that arrive at site. Quarantined materials will be removed as soon as practicable in appropriate vehicles and properly disposed of at suitably authorised facilities.

12.1.3 Any hot loads inadvertently deposited on Site would be quenched and then diverted to the quarantine area.

12.1.4 There is adequate hose reel capacity to reach the quarantine area from the water storage tank and mains supply (see below).

12.1.5 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.

12.2 FIRE WATER MANAGEMENT IN THE QUARANTINE AREA

12.2.1 It is anticipated that the maximum time required to put out a fire in the event that quarantined material reignites in the quarantine area would be 30 minutes. The design of the quarantine area would be 5m x 15 m with a curb on the entrance of 100mm and a fall through the length of the area of 0.5 m providing a total volume of (0.1 x 15 x 5) + (0.5 x 0.5 x 15 x 5) = 26.25m^3. There would also be a 0.5m x 0.5m x 0.5m low point sump to allow captured water to be pumped to tanker to allow disposal of the water by a suitable waste water treatment plant.

12.3 PROCEDURE TO REMOVE MATERIALS TEMPORARILY STORED IN THE QUARANTINE AREA

12.3.1 Waste and materials stored in the quarantine area will only be removed when it is safe to do so.

12.3.2 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.

12.3.3 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.

13 WASTE BUILDING

13.1.1 A Fire Risk Assessment has been 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) 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 states:

- The building is of steel portal frame construction with profile metal cladding to approximately a 12 metre elevation providing secure high bay accommodation. There are currently no structural features that are considered to present a significant feature as regards the spread of fire;
- The closest fire station is Swansea Central Fire & Rescue Station, which is situated 4.7 miles from the Site. Timed response to the facility is estimated at 16 minutes;

- 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;
- Emergency lighting has been installed above the emergency exits and a testing regime implemented;
- Site offices and welfare facilities. There are no significant findings raised with regards to 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. In addition, the roller shutter vehicular access doors would be opened.

13.1.4 Waste storage in the building, fireproof bays, stack sizes and separation distances etc are detailed in Sections 9.

14 WASTES STORED IN CONTAINERS

14.1.1 Wastes stored in containers is detailed in Section 9.3. Ferrous and non-ferrous metals will be stored in separate roll on roll off containers (measuring 22 feet long x 8 feet high and 8 feet wide, i.e. 6.7m long x 2.4m high and 2.4m wide) and located at the point of separation in the waste processing plant. These containers are both portable and can be freely accessed by fork lift truck in the event of a fire to move them to the external quarantine area during a fire incident if required.

15 LAYOUT OF WASTE STACKS

15.1.1 Layout of waste stacks is detailed in Section 9.

15.1.2 A 3m wide emergency pedestrian exit route will be located behind the waste and product storage bays so that site operatives and any visitors in the building can safely exit the premises in the event of a fire incident, see Drawing ‘Site Location and Layout’. The pedestrian access route will be kept clear.

15.1.3 Fire hoses are located on the internal southern wall of the building and are easily accessible. The location of the waste stacks does not impede access to the fire hoses.

15.1.4 Fire extinguishers are located on the southern, western and northern internal perimeter walls of the building. The location of the waste stacks does not impede access to the fire extinguishers.

15.1.5 The layout of the building, including the waste reception and product storage bays, the processing plant and equipment has been designed to ensure efficient access by waste delivery and product 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 external quarantine area.

16 SEASONALITY

16.1.1 The waste types received at the Site and the recycled materials that will be produced and supplied to off-site customers are not subject to significant seasonal variations, unlike for example green waste that arises in greater quantities in the spring and summer months. The range of wastes accepted at the Site and the design of the processing plant ensures flexibility for the Operator to produce types of plastic recyclate etc that meets customer demand, even when demand for products may vary over time.

17 MONITORING AND TURNING OF STACKS

17.1.1 Stack management is detailed in Sections 9 and 10.

18 FIRE DETECTION

18.1 DETECTION SYSTEMS

18.1.1 In addition to the CCTV camera coverage, 2 No thermal cameras and 6 No flame detector cameras have been installed to provide coverage of all the entire site, including all waste storage and processing areas.

18.1.2 In the event of after-hours motion, flame detection or temperatures exceeding 47^{o}C, the system sends an alarm to the Site Manager's and Health and Safety Manager's mobile phones, which are kept switched on and accessible 24/7.

18.1.3 During the working day, operational areas of the Site are 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. This ensures that any fire is likely to be rapidly detected by both the surveillance camera systems and site personnel on a 24/7 basis.

18.2 CONE OF VISION

18.2.1 The FSL100 flame detector has a cone of vision of 90° so it can monitor an area extending from floor to ceiling and extending to approximately 35 m (FLS100-IR3) (see Figure 4 above).

18.3 DETECTION SYSTEM CERTIFICATION

18.3.1 The camera surveillance systems have been designed, installed and are maintained by a contractor who is covered by an appropriate UKAS-accredited third party certification scheme.

19 FIRE SUPPRESSION SYSTEM

19.1 SUPPRESSION SYSTEM IN USE

19.1.1 The system is a fully extinguishing system with automatic fire detection sensors for flame and heat. The system will be configured to be operated automatically or with a manual release. The at risk areas will by GPS plotted on a preprogrammed monitoring pattern, which if required can be overwritten and taken over by a wireless remote control. Remotely controlled water cannons will be installed at the Site and activated in the event of a fire incident. Locations are shown on Drawing 'Site Location and Layout'. The system will be supplied and maintained in accordance with BS -EN 671-1 Fixed Firefighting systems.

19.1.2 In total, 3 fire suppression water cannons will be installed and positioned facing directly at all waste storage bays and containers, including pre-processing waste bays, processed waste bays (pulp, baled mixed plastics, RDF/SRF, baled and wrapped shredded film), ferrous and non-ferrous containers and quarantine skip located in the building). The water cannons will be pumped fed via a 100mm pipe from an automatically filled and replenished 400m^3 water storage tank, which will be fitted with 2 x 70mm female instantaneous fire coupling connections to allow direct connection by the Fire and Rescue Service if required. The duty feed pump will be powered electrically and the standby pump will be powered by diesel. The water cannons will be linked to the installed thermal sensors and will activate automatically.

19.1.3 The water cannons will be designed, installed, and maintained by UKAS accredited third party certification scheme and have been agreed by the Operator's insurer. Records of checks will be retained for inspection by NRW.

19.1.4 The Site is equipped with 10 No fire hoses, the locations of which are also shown on Drawing 'Site Location and Layout' (see above).

19.1.5 Portable fire extinguishers are installed on site and staff will be trained in their use. Records of training, testing and maintenance of fire extinguishers will be kept. Fire extinguishers will meet the requirements of BS 5036.

20 FIRE FIGHTING STRATEGY

20.1 ACTIVE FIRE FIGHTING

20.1.1 The Site is equipped with heavy plant, including telehandler and 360^0 excavator, which can be used by trained site operatives to move materials in the event of a fire or assist the Fire Service if requested to do so by them.

20.1.2 The telehandler and 360^0 excavator have enclosed cabs for the driver and fire and heat protected hydraulic systems. As well as water cannons, the Site is equipped with fire hoses and fire extinguishers to fight fire.

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 heavy mobile plant;
- Separate materials, using heavy mobile plant, that are safe to do so after being thoroughly quenched by the water cannons, fire hoses 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 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 $300m^3$ stockpile of combustible waste must have a water supply of at least $2m^3$ per minute for a minimum of 3 hours, i.e. $360m^3$ water supply in total. This rate is proportional and as the largest combustible waste stockpile on site has a capacity of $255m^3$, this equates to $306m^3$ of water.

21.1.2 A water tank to contain $400m^3$ water storage will be installed on site, the location of which is shown on Drawing 'Site Location and Layout'. This will provide sufficient water

availability to more than meet NRW guidance requirements and extinguish a fire in the event that the largest waste stockpile catches fire.

21.1.3 The water tank will be fed with mains water via a float valve set at a level to maintain the tank at 400m^3. There will be a bypass line with a manual valve that can be used in the event that the float valve fails or has to be removed for maintenance. A level transmitter will be fitted to the tank which is connected to the main plant control system. In the event the level falls below 380m^3 an alarm will come up on the main plant control system HMI.

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 within the building by the concrete floor, sealed side walls of the structure and the 100mm high 'sleeping policeman' bunds across vehicular and pedestrian access doors. The internal building dimensions are a minimum of 145m x 28m. Therefore the construction of 100mm (0.1m) high 'sleeping policeman' bunds across entry and exit points creates a 'reservoir' of 406m^3 (145m x 28m x 0.1m), which is easily capable of containing 400m^3 of fire water in the event that the largest waste stockpile catches fire.

22.1.2 In order to prevent potentially contaminated firewater entering the foul sewer and surface water drains external to the building, drain mats will be located to seal off drains, drainage gullies and manholes.

22.1.3 Captured firewater will be tankered off site to a suitably authorised wastewater treatment plant.

23 DURING AND AFTER AN INCIDENT

23.1 DEALING WITH ISSUES DURING A FIRE

23.1.1 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.

23.1.2 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.

23.2 NOTIFYING RESIDENTS AND BUSINESSES

23.2.1 Adjacent businesses and other high-risk receptors (see Table 2) will be contacted and informed of the fire incident.

23.2.2 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 1Km 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.

23.3 CLEANING AND DECONTAMINATION AFTER A FIRE

23.3.1 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 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 Service, NRW and other regulatory bodies, as appropriate;
- Review and update FPMP, EMS and staff training, as appropriate.

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

- Dyfed Recycling and Derwen Group will assist with the removal of any residual waste;
- Gavin Griffiths Group 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.

23.4 RECOMMENCEMENT OF OPERATIONS AFTER A FIRE

23.4.1 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.

24 REVIEW AND MONITOR FPMP

24.1.1 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.

24.1.2 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);

24.1.3 As stated in Section 4.2, 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 Fiberight-Waunarlwydd-RP01-Final, Rev C).

24.1.4 Regular fire drills will be carried out initially six monthly. Frequency will change depending on results of exercises, any incidents and turnover of staff.

24.1.5 FPMP monitoring procedures include:

- Fire watch checks at the beginning and end of each working shift (the Site operates a daily 3 shift system, therefore a minimum of 6 fire watches are undertaken per 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 I use;
    - Waste stacks and separation distances are in accordance with the FPMP;
    - Monitoring and recording the temperature of waste stacks by using temperature probes and taking measurements throughout the waste stockpiles (probes are only suitable for recording the internal temperatures of waste bales once they have been split (it is important to note that thermal detection cameras are also in use at the Site);

- Monitoring and recording the residence times of wastes on Site (see Section 5.1);
- Ensuring plant and equipment (including FPMP equipment) are adequately serviced and maintained by qualified personnel in accordance with manufacturers' or suppliers' recommendations. Maintenance and serving procedures form part of the Site's EMS (see Fiberight-Waunarlwydd-RP01-Final, Rev C).

Permit to Work – Hot Works

Fiberight

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		

Precautions to be taken before hot work is carried out

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? *Fire watch observer to stay in place for 60 minutes after the completion of the hot work activities*	Yes		No		N/A	

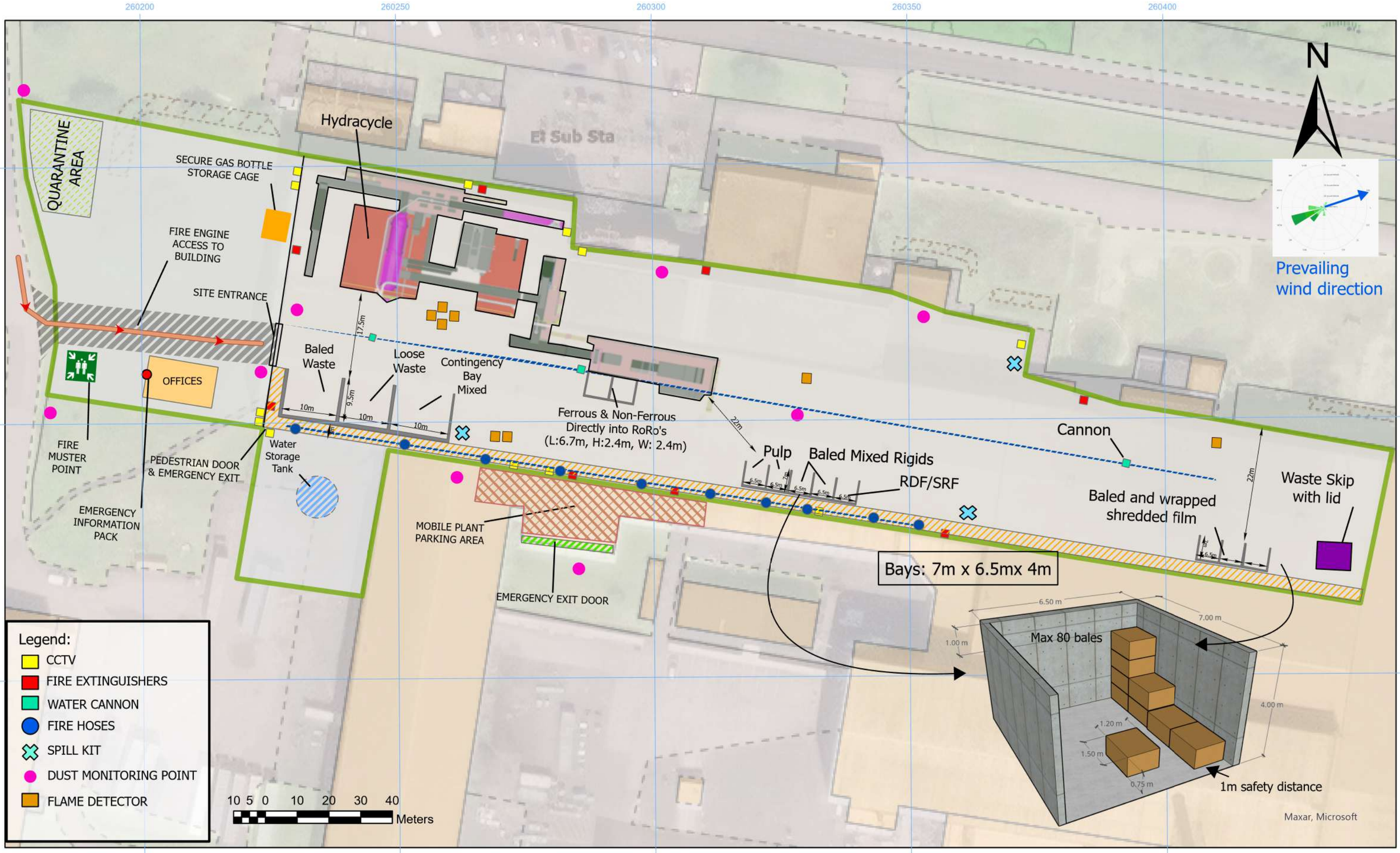
Comments:

Duration of Permit				
This Permit to work is valid between (maximum duration one shift)	Hours		Hours	
Date:				

Authorisation (by Authorising Person) *(Maintenance Dept)*	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) *(Maintenance Dept)*	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 Health and Safety Manager

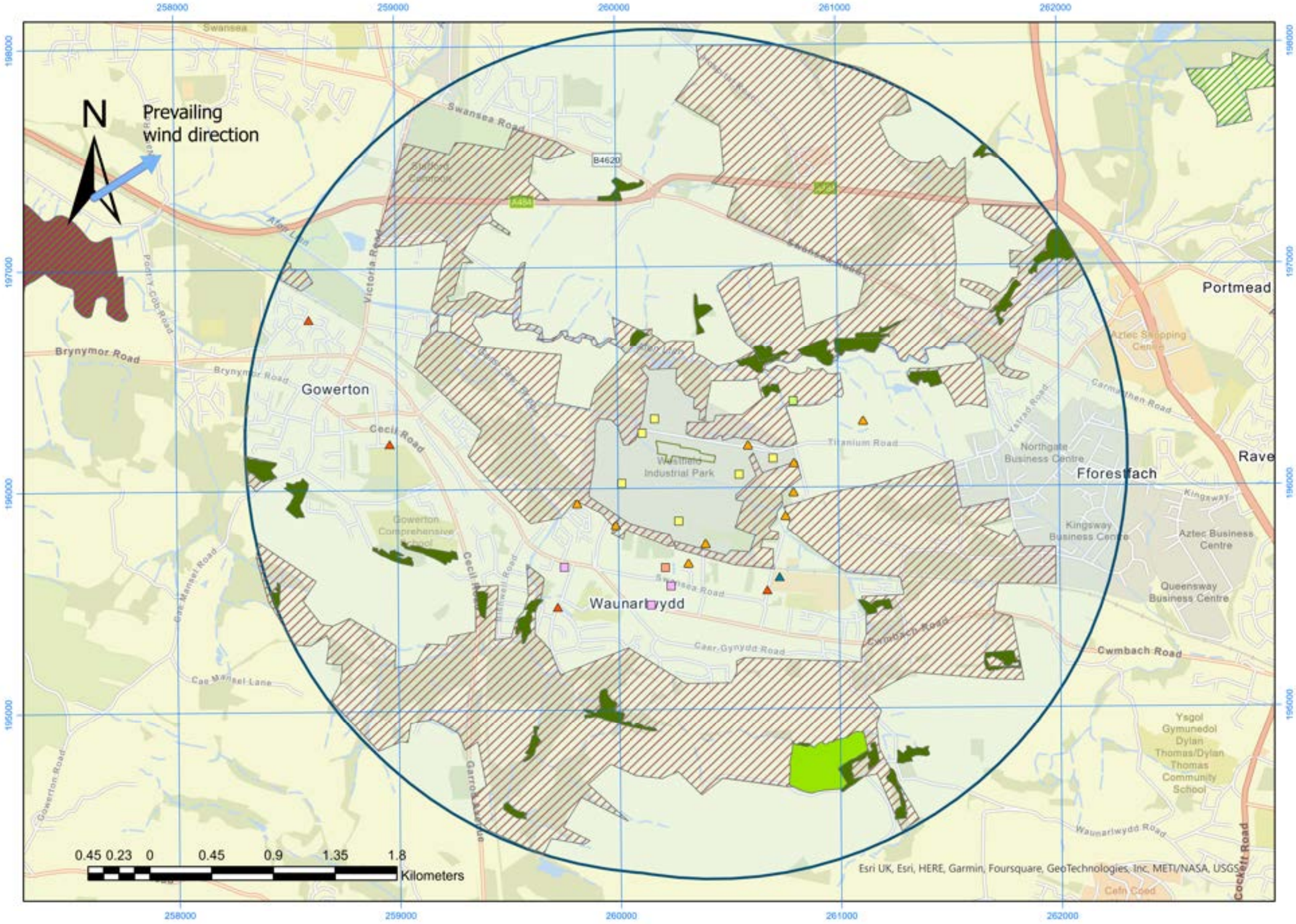


Waste And Industry Compliance Ltd
ENVIRONMENTAL CONSULTANCY SERVICES

Title: Site Location and layout

Unit 1, Westfield Industrial Estate, Waunarlwydd, SA5 4SF

Date: 18/09/2023 Version: FINAL	Drawing Number: FIBERIGHT-SITELAYOUT-DW01-FINAL
Author: S. Barnes Page Size: A3	Scale: 1:1,100



Waste And Industry Compliance Ltd

ENVIRONMENTAL CONSULTANCY SERVICES

UNIT 1, FIBERIGHT LTD

Legend:

- PERMIT BOUNDARY
- 3km Buffer
- Ancient Woodland
- AONB
- LNR
- NNR
- SAC
- SPA
- SSSI
- SINC

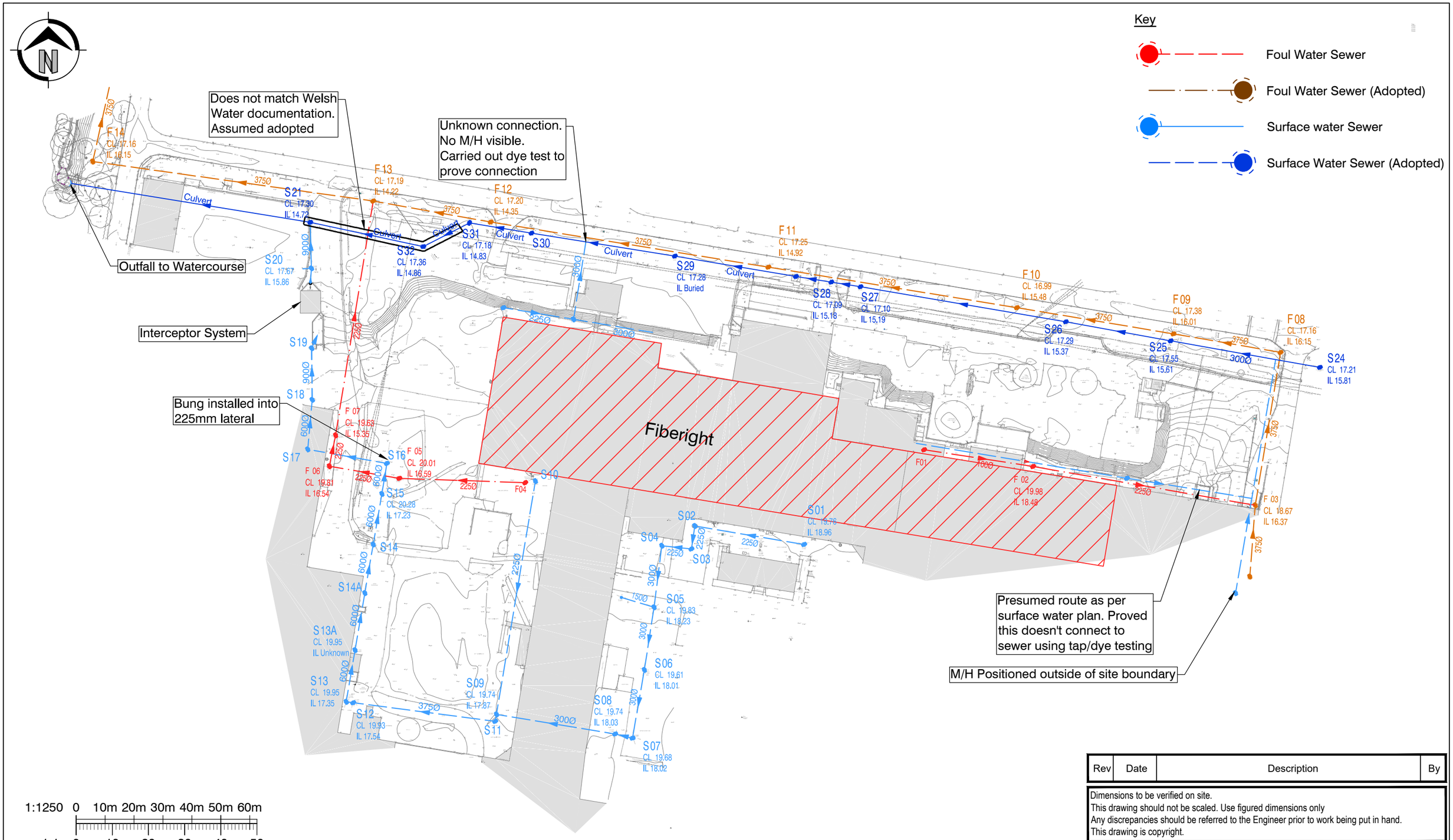
Receptors

- Arable land
- Care Home
- Commercial
- Community Centre
- Domestic
- Rugby Club
- School

Drawing Number:
Fiberight-DW02- Receptors-FINAL

All Dimensions to be checked on site and not scaled from this drawing.
This drawing is not for construction
This drawing is for planning only
All services to be checked on site and not scaled from this drawing

Title: Receptors Location Plan	Date: 18/02/2023	Author: S. Barnes
Unit 1, Westfield Industrial Estate, Waunarlwydd, SA5 4SF	Version: FINAL Page Size: A3	Scale: 1:27,750



Rev	Date	Description	By

Dimensions to be verified on site.
This drawing should not be scaled. Use figured dimensions only
Any discrepancies should be referred to the Engineer prior to work being put in hand.
This drawing is copyright.

Drawing Status

FOR INFORMATION

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QuadConsult ENGINEERS IN PARTNERSHIP
Consulting Civil & Structural Engineers

Client: Fiberight

Project: Fiberight Swansea

Title: EXISTING DRAINAGE LAYOUT

Designed by	Drawn by	Checked by	Date	Scales @ A3 size
-	GS	IMH	JAN'22	1:1250

Drawing No: 21456-SK-801-0

File name: 21456-SK-801-Existing Drainage Layout.dwg