Final V3

Pembrokeshire County Council Waste Transfer Station

Fire Prevention & Mitigation Plan

Environmental Permit Ref.: EPR/PB3490HV

Project code: 416.00798.00037
Date: February 2024

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Acknowledgements

The content of this Report has been based upon information provided by WRAP Cymru and Pembrokeshire County Council.

Version Control Table

Version	Date	Description
V1	October 2019	FPMP prepared to support EP variation application (ref: EPR/PB3490HV/V008).
V2	July 2023	FPMP updated to reflect partial surrender of permitted area covering land to the south of the Unit 41 entrance.
V3	February 2024	FPMP updated to reflect partial surrender of permitted area covering waste storage Units 29, 29A, and the welfare / new recycling container storage unit at Unit 35.

1.0 Introduction

1.1 Report Context

The Waste and Resource Action Programme (WRAP), on behalf of Pembrokeshire County Council (PCC), has instructed SLR Consulting Limited (SLR) to update the Fire Prevention & Mitigation Plan (FPMP) in support of an application to partially surrender the Environmental Permit (EP) (Ref: EPR/PB3490HV) at the Unit 41 Waste Transfer Station (WTS), located at The Dockyard, Pembroke Dock, Pembrokeshire.

This report follows the Natural Resources Wales (NRW) guidance for FPMPs[1] and details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The information contained within this FPMP aims to satisfy NRW that the following factors are equivalent or less than would be incurred if the site followed the minimum standards in the regulatory guidance:

- Likelihood of fire;
- Impact from emissions during or after a fire on the local community, critical infrastructure and the environment;
- Resources required by NRW and other emergency responders during an incident; and
- Post incident clean-up and remediation costs.

Under current fire safety legislation[2], a responsible person must carry out, or appoint a competent person to carry out, a suitable and sufficient Fire Risk Assessment (FRA) of the risks of fire to employees and others who may be affected by the site. The FRA will be kept on site available for review at any time.

A copy of this FP&MP is stored in the security office at Gate 1 at Pembroke Dock.

1.2 Environmental Permit

The site operates under an Environmental Permit (EP) (Ref: EPR/PB3490HV) originally issued to PCC in January 2015 under reference number: EPR/CB3793HE. The EP was transferred to Sundorne Products (Llanidloes) Limited in March 2015 when the current EP reference number was assigned. The EP was varied 4 times before it was transferred back to PCC in August 2018. In September 2019 a partial surrender of a section of land from the permitted area that had not been used for any waste operations was completed.

1.2.1 Environmental Permit Variation Application – March 2020

In 2019/2020 PCC were undertaking a service change from comingled to kerbside sort recycling collections. The FPMP was updated in support of an EP variation for the site to include Units 29 and 29A within the permitted area and to expand the permitted waste types. An existing exemption (S2: Storing waste in a secure place) was in place on site and remained following the variation. Glass continued to be tipped within a designated

1 Fire Prevention & Mitigation Plan Guidance, August 2017
2 Regulatory Reform (Fire Safety) Order 2005

bay within Unit 41 however, the exemption is occasionally used for the storage of commercial glass outside in a container.

This FPMP was updated to include the current fire prevention and mitigation measures in place on site, and the proposed changes or additions to be installed before the service change in line with the approved varied EP.

The EP variation was issued in March 2020.

1.2.2 Partial Environmental Permit Surrender Application – August 2023

PCC wish to partially surrender the EP at the Unit 41 WTS, in multiple phases.

The first phase consisted of a partial surrender of the permitted area covering land to the south of the Unit 41 entrance, which was used by PCC as a carpark.

As requested by NRW[3] the drawings referenced within the FPMP were updated to reflect the proposed EP boundary following the partial surrender.

1.2.3 Partial Environmental Permit Surrender Application – Current

This second phase constitutes a partial surrender of the permitted area covering waste storage area Units 29, 29A and the welfare / new recycling container storage unit at Unit 35. The resulting proposed EP boundary is illustrated on Drawing 002 V3.

The FPMP and referenced drawings have been updated to reflect the proposed EP boundary and waste storage areas following the partial surrender.

1.3 Site Location

1.3.1 Surrounding Land Use

The site is situated in Pembroke Dock which is approximately 3km north west of Pembroke in south west Wales. The site is located within The Dockyard and is accessed via Whites Farm Way which links into the A477 further to the east. The National Grid Reference (NGR) for the site is SM 95702 03746.

The surrounding land uses and local receptors within 1km are identified on Drawing 003 V3, Environmental Site Setting.

A summary of the site's immediate surrounding land uses is identified in Table 1-1 below.

Table 1-1
Surrounding Land Uses

Boundary	Description

[3] *NRW Request for Information dated 14th July 2023.*

North	Industrial and commercial businesses located within The Dockyard and the Milford Haven waterway.
East	Industrial and commercial businesses located within The Dockyard. Beyond this lies the town of Pembroke Dock with associated residential areas.
South	A parking area, tank and electrical substation followed by South Pembrokeshire hospital. The residential areas of Llanreath and the South Pembrokeshire golf club lie beyond this.
West	Industrial and commercial premises located within Pembroke Dock and a waste water treatment works are located adjacent to the site. Beyond this lies the Milford Haven waterway.

The immediate surrounding land uses are described in further detail below.

1.3.2 Dockyard

The site is located within The Pembroke Dockyard and premises associated with the operation of the Dockyard lie adjacent to the site's EP boundary in every direction.

1.3.3 Residential Properties

The nearest residential receptors are located along Martello Road approximately 180m south of the site's boundary. Larger residential areas located within Pembroke Dock town lie approximately 300m to the east.

1.3.4 Local Transport Network

Whites Farm Way is used to access the site and it located adjacent to the site's eastern boundary. The Pembroke Dockyard is accessed off the A477 to the east.

The wider local road network is illustrated on Drawing 003 V3.

1.3.5 Hospitals

South Pembrokeshire hospital is located approximately 130m south of the site. The Surehaven Pembroke hospital is located 200m south east of the site's boundary.

1.3.6 Educational Facilities

There are 3 educational facilities within 1km of the site's boundary. Pembroke Dock Community Learning Centre is the closest, located approximately 690m south east of the site.

1.3.7 Waste Water Treatment Works

The Welsh Water waste water treatment works is located adjacent to the site's western boundary.

1.3.8 Golf Course

South Pembrokeshire golf club is located approximately 360m south of the site's boundary.

1.3.9 Open Ground

There are several small areas of open ground within 1km of the site's boundary. The closest of these lies approximately 130m south west.

1.3.10 Surface Water Features

The Milford Haven waterway is located to the west and north of the site and at its closest point is approximately 180m to the west.

1.4 Ecology

The following information has been assessed to determine the ecological site setting:

- MAGIC Mapping Website[4];
- Lle Map Browser; and
- Natural Resource Wales Designated Sites Tool[5].

Searches have confirmed that there is one Site of Special Scientific Interest (SSSI) and one Special Area of Conservation (SAC) within 1km of the site's boundary:

- The Milford Haven Waterway SSSI (180m west); and
- The Pembrokeshire Marine/Sir Benfro Forol SAC (180m west).

The searches confirmed that there are none of the following within the 1km:

- Ramsar's;
- Special Protection Area's (SPA).
- Areas of Outstanding Natural Beauty;
- Local Nature Reserves;
- National Nature Reserves; and
- National Parks.

1.5 Cultural and Heritage

A review of the Cadw website revealed that there are several listed buildings within 1km of the site's boundary as illustrated on Drawing 003 V3. Two of the listed buildings lie within 10m of the site's boundary as shown below:

- A Former Foremen's Office is located approximately 10m north; and
- The Timber Pond located approximately 8m west.

There are 4 scheduled monuments within 1km of the site's boundary:

- Paterchurch Tower: 90m south east;
- Bomb stores at west end of Fort Road: 170m south west;
- South West Dockyard Tower: 200m south west; and
- Defensible Barracks, Pembroke Dock: 500m south east.

The search on Cadw confirmed that the following features do not lie within 1km of the site:

- World Heritage Sites;
- Registered Battlefields; and

4 https://magic.defra.gov.uk/MagicMap, accessed February 2024
5 NRW Designated Site Search, accessed February 2024

■ Registered Parks and Gardens.

1.6 Receptors

Table 1-2 and Drawing 003 V3 show the locations of receptors that are considered to be potentially sensitive and could reasonably be affected by the activities occurring on site.

Table 1-2
Identified Receptors

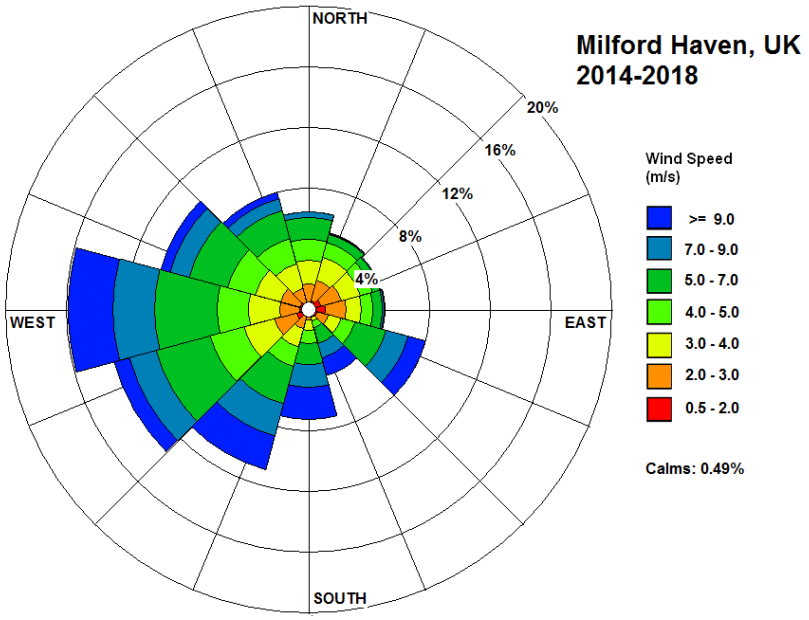
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary at closest point (in metres)
Receptors located within 1km of the EP boundary as shown on Drawing 003 V3			
Pembroke Dockyard	**Dockyard**	**North, East and South**	**Adjacent**
Welsh Water	Waste Water Treatment Works	West	Adjacent
Whites Farm Way	Local Road Network	East	Adjacent
The Timber Pond	Listed Building	West	8
Former Foremen's Office	Listed Building	North	10
Paterchurch Tower	Scheduled Monument	South-east	90
South Pembrokeshire Hospital	Hospital	South	130
Open Ground	Open Ground	South-west	130
Milford Haven Waterway	**Surface Water Feature**	**West, North and North-east**	**180**
Milford Haven Waterway	Site of Special Scientific Interest (SSSI)	South-west, West, and North-west	180
The Pembrokeshire Marine/Sir Benfro Forol	**Special Area of Conservation (SAC)**	**South-west, West, North-west, North and North-east**	**180**
Martello Road	Residential	South	180
Surehaven Pembroke Hospital	Hospital	South-east	200
South Pembrokeshire Golf Course	Golf Course	South	360

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary at closest point (in metres)
Pembroke Dock	Residential	East	300
Pembroke Dock Community Learning Centre	Educational Facilities	South-east	690

1.7 Windrose

Figure 1-1 shows the wind patterns between 2014 and 2018 as identified by the Milford Haven meteorological station. The most prominent wind direction is from the south west. Winds from the north and east are relatively infrequent. Receptors highlighted in bold in Table 1-2 above are likely to be affected in the event of a fire as they are located in the path of the prevailing wind (from the south west).

Figure 1-1
Milford Haven Meteorological Station, 2014-2018



1.8 Site Type

The site is permitted as a WTS and accepts non-hazardous household, commercial and industrial waste. The site can accept up to 74,000 tonnes per annum (tpa) of non-hazardous waste for treatment and/or storage.

The site is permitted to carry out treatment activities including manual and/or mechanical screening, metal removal (magnets and/or eddy current), compaction, baling or wrapping of wastes for the purposes of disposal or recovery. However, the only treatment operations carried out on site are baling and bulking up.

The site layout, including waste storage locations have been identified on Drawings 004 V3 and Drawing WRML – PDOCK37N.

An exemption (S2: Storing waste in a secure place) is in place on site and has been used on occasion for the storage of glass outside in a dedicated container.

1.9 Waste Types

The EP allows for the following wastes to be accepted on site which are defined as 'combustible materials' in the FPMP Guidance[1]:

- Plastic;
- Metal;
- Paper;
- Cardboard;
- Rags/textiles;
- Waste Electrical and Electronic Equipment (WEEE);
- Non-hazardous batteries; and
- Mixed waste.

The full waste list is included within Table S2.1 of the EP.

1.10 Site Access

The site is accessed via Whites Farm Way to the south which leads from Meyrick Owen Way. The closest Fire Station is Mid and West Wales Fire Brigade to the south east of the site. Using Google directions and mapping[6], the drive time is approximately 4 minutes and it is approximately 1.0 mile between the site and the Fire Station.

The road network within The Dockyard is designed to accommodate large haulage vehicles. As such, the Fire & Rescue Service (FRS) would be able to reach the site without difficulty.

Access roads around the perimeter of the site and each material storage building will be kept clear to allow easy access to the combustible material storage areas during an incident. The access points for vehicles are illustrated on Drawing 004 V3.

The site's operating hours are as follows:

- Monday – Saturday: 07.30 – 19.30; and
- Sunday and Public Holidays: 09.00 – 16.00.

Outside of operational hours, the site benefits from the presence of security staff. Therefore, in the event of a fire, the FRS would be able to gain immediate access.

1.11 Environmental Management System (EMS)

The site operates its own Environmental Management System (EMS) that governs all operations at this facility.

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6 Google Maps, Accessed in February 2019

Consequently, operational procedures for the management of the facility ensures that all appropriate pollution prevention and control techniques are delivered reliably and on an integrated basis.

2.0 Fire Prevention Measures

The following measures are implemented on site to minimise the causes of fires.

2.1 Fire Detection and Alarm System

Unit 41 benefits from a fire detection and alarm system consisting of Thorn infrared flame detectors in the four corners of the main section of the building and in the smaller section behind. A Vesda air aspirating smoke detection system (2100IDV2) is also installed consisting of 3 lines running the length of the building's roof (one down the centre and one either side of this). Manual call points are installed by each exit and heat detectors are fitted in the break room and adjacent to the main electrical position.

Each element of the system connects to a Fireclass precept panel which is monitored using a CSL Dualcom (2 paths and a BT line). CCTV within the building is linked to a central control station. The alarm system is monitored 24 hours a day, 7 days a week (24/7) by a contracted alarm receiving centre. If an alarm is raised, the site manager (Peter Harts) and/or the emergency services are contacted immediately.

Site operatives are trained in the detection of fires and therefore can provide an additional level of management for fire detection when the site is operational.

2.2 Waste Acceptance and Rejection

The site follows strict waste acceptance and rejection procedures to ensure that no non-conforming waste is accepted on site. The procedure to be adopted by all site operatives is included in the EMS. The procedure includes the following key points:

- Each incoming load will be visually inspection as it is deposited. Particular attention will be given to the identification of batteries and non-conforming waste;
- If safe to do so, non-conforming waste will be moved to the quarantine area. The site management will be informed and, if required, a specialist contractor will be contacted to remove the waste from site within 24 hours;
- Any non-conforming waste deemed to be unsafe to move to the quarantine area will be cordoned off and site operations/traffic movements in that area will be suspended; and
- All details will be recorded in the site diary and an incident report form is completed.

2.3 Inspections and Amenity Monitoring

The site is continually manned and site operatives/security guards are asked to remain vigilant at all times and look out for signs of fire. Staff are trained in how to identify fires and fire hazards on site. Staff also receive training on the use and selection of fire extinguishers, site evacuation and shut down procedures, fire safety and all relevant emergency procedures.

All waste storage areas are visually inspected throughout the day and all findings are logged in the site diary as a minimum.

The site undergoes regular cleaning using mobile plant and wash down hoses/jet wash to prevent a build-up of debris and dust on site. All escape routes, fire exits, alarm call points and fire extinguishers are kept clear from waste at all times.

Daily and weekly monitoring is recorded in line with the requirements of the EP and detailed in the EMS.

2.4 Waste Storage Arrangements

Waste storage takes place within the areas illustrated on Drawing WRML – PDOCK37N. All waste, with the exception of WEEE, batteries and textiles, is stored in bays constructed from Legato block walls with the following fire resistance properties:

- Class A1 fire resistance in accordance with clause 4.3.4.4 of EN 13369;
- Concrete specification of RC40/50XF equivalent with a minimum cement content of 360kg/m³, cement type CEM1 52.5N;
- Walls have a designed work life of 100 years as defined in BS EN 1990:2002 + A1: 2005; and
- Are 0.8m thick.

A freeboard space of 1m is maintained at the top, sides and front of each bay. Lines drawn on the inside of each bay mark the maximum height and width of each stockpile ensuring the maximum volumes are adhered to.

Processed cardboard, plastic and cans are stored in bales and all other unprocessed and processed wastes are stored within loose stockpiles. Table 2-1 details the storage location and how each waste type is stored.

Bales are stored a maximum of 3 high, and wherever possible when material stocks allow, are stacked interlaced (pyramid stacked) to avoid the chimney effect by reducing air-flow and the intensity of a potential fire.

Separation distances have been calculated in accordance with guidance from WISH, WASTE 28: Reducing fire risk at waste management sites, issue 2 April 2017 and are shown on Drawing WRML-PDOCK37N. The separation distances and 1m freeboard prevent the spread of fire between piles and brands or lighted material moving outside the bay walls.

The amount of waste received daily is as follows:

- Monday – Friday: 50-300 tonnes;
- Saturday: 10-100 tonnes; and
- Sunday: 0-100 tonnes.

The amount of any one waste type included in Table 2-1 received or stored on site could be up to the maximum thresholds shown above. The combination and quantities of different waste types will vary daily but will not exceed the maximum daily tonnage shown above.

The total amount of waste stored on site at any one time will not exceed 570 tonnes.

The waste types, maximum storage times and storage arrangements are detailed in Table 2-1 below. Non-combustible waste types are shaded grey in the table below and are not subject to the FPMP guidance requirements.

Table 2-1
Waste Types, Storage Time and Dimensions

Waste Type	Max Storage Time	Length (m)	Width (m)	Height (m)	Max Volume (m^3)
Unit 41					
Mixed Cans/Plastic/Composite Packaging/Metals Bay A	Maximum of 1 week – More likely to be 1 day	11.2	6.4	3.0	111[7]
Mixed Cans/Plastic/Composite Packaging/Metals Bay B		11.2	6.4	3.0	111[7]
Paper		8.8	7.2	3.0	108[7]
Cardboard Bay A		8.8	7.2	3.0	108[7]
Cardboard Bay B		11.2	4.4	3.0	44[7]
Food	72 Hours	6.4	3.6	1.5	35
Glass	Glass stored in bay = 1 week. Glass stored outside in container = 1 day.	8.8	7.2	3.0	108[7]
Plastic/Cans/Composite Packaging/Metals Bales	Maximum of 1 week – More likely to be 1 day	8.8	7.2	3.0	97.2[8]
Cardboard Bales		12.8	5.2	3.0	97.2[8]
Small WEEE	3 months	1.3	1.3	1.0	1.69[9]
Non-hazardous Batteries	3 months	1.3	1.3	1.0	1.69[9]
Textiles	1 week	1.3	1.3	1.0	1.69[9]

7 Maximum volume accounts for the slope of the waste pile and the freeboard space at the top and sides of each stockpile.
8 Maximum volume based on 90 bales. Bale size: 1.2 x 1.2 x 0.75 = 1.08m^3.

9 Maximum volume based on a 1,100 litre storage container.

2.4.1 Non-Waste Materials

The site stores non-waste materials that are not covered by the FPMP Guidance but are considered in this FPMP due to the potential for them to cause or increase the impact of a fire on the site. The materials and their storage arrangements are shown in Table 2-2 below and illustrated on Drawing 004 V3.

Table 2-2
Non-Waste Materials: Storage Arrangements

Type	Storage Location	Storage Arrangement
Fuel Tank (2,000 litre red diesel)	At the entrance to Unit 41 (external).	Stored within an Atlas 2300 VFDA tank. The tank is integrally bunded with a leakage containment bund capable of containing at least 110% of the volume of the tank.

There is no storage of gas bottles or oil on site.

2.4.2 Seasonality of Waste Acceptance

Waste volumes and supply and demand of waste on site are subject to seasonal variation at Christmas and during summer months. Procedures to monitor the variations are included within the EMS. Incoming material volume is measured and recorded via the weighbridge software and treated waste transfers off site will be increased if the site appears to be reaching maximum capacity.

2.5 Management of Hotspots

2.5.1 Bay Storage - Stockpiles

As detailed in this FPMP, suitably qualified site operatives carry out daily checks of the site to identify the risks and to inspect the storage bays. Visual checks on moisture content are included and any excessively wet loads will be monitored to check for 'steaming off'. If identified, the stockpile will be rotated using a loading shovel.

To reduce the likelihood of hotspot development within waste storage areas the storage time is minimised. Under normal operating conditions, all waste received on site is processed and removed within a maximum of 1 week (usually 1 day).

The site operates on a 'first in, first out' basis. Waste is deposited within the material specific bay and emptied entirely on a daily basis starting with the waste that was accepted first. The site only stores enough material for one load due to space restrictions and to ensure economic haulage. Therefore stock rotation is not required.

During normal operating conditions, wastes are not driven over by on site plant to avoid compaction, which may contribute to a build-up of heat within the pile.

The only treatment of waste on site is baling and bulking up, therefore all material is stored in its largest form prior to being removed from site.

Stockpiles are visually inspected throughout the day and the findings logged within the site diary at the start and end of each shift as a minimum.

To summarise, stockpiles are managed as follows to minimise self-combustion:

- Stockpile storage times are minimised;
- Risk factors (e.g. mixing of materials and heat generated during baling) are reduced;
- Stockpile sizes are minimised due to space restrictions and to ensure economic haulage;
- Stored materials are rotated, on a first in and first out basis; and
- Hotspots are detected and controlled within stockpiles by:

- Routinely visually monitoring stockpiles; and
- Minimising external heating during hot weather by avoiding ignition hot spots / concentrated beams of sunlight or glare reflected onto stockpiles through surfaces.

2.5.2 Bale Storage Areas

As detailed in Section 2.5.1 above, suitably qualified site operatives carry out daily checks of the site including the bale storage bays.

As shown in Table 2-1, bales are stored on site for no longer than 1 week therefore probing for temperature and moisture is not deemed necessary.

To summarise, bales are managed as follows to minimise self-combustion:

- Bale storage times are minimised;
- Risk factors (e.g. mixing of materials and heat generated during treatment) are reduced; and
- Bale storage areas are minimised.

2.6 Plant and Equipment on Site

The following items of mobile plant are held on site:

- 2 x Forklift truck;
- 2 x Loading Shovels; and
- 1 x Baler

Daily checks are carried out on all mobile plant and any findings are recorded in the site diary. All mobile and fixed plant servicing and maintenance is carried out as per the manufacturer's instructions. Any defects that might harm the environment are entered into the incident management system.

All mobile plant is fitted with fire extinguishers as are all vehicles entering the site.

Any mobile plant not in use is temporarily stored within the dedicated plant parking areas as illustrated on Drawing 004 V3. The storage areas are located over 6m from any combustible waste.

Plant and equipment are visually inspected prior to every use to ensure it is fit for purpose.

2.7 Training

Staff receive training in the use and selection of fire extinguishers, site evacuations, fire safety and all relevant emergency procedures.

All staff and contractors working on site are made aware of the contents of the FPMP and the procedures that are in place in the event of a fire on site during their induction. Staff training is regularly refreshed particularly in the event of non-compliance.

The procedures for fires discovered on site are provided both in the site's EMS and on-site notice boards.

PCC conduct a test and review the FPMP at least once a year, or in the event of any significant changes to site operations, to ensure that the contents are still relevant and that all staff members' knowledge is current and up to date.

2.8 Security Measures

The site is almost entirely enclosed by a mixture of metal palisade fencing and security fencing topped with barbed wire (where the perimeter is not formed by a building). There will be lockable gates at the site's access points which will be locked outside of operational hours. An additional security barrier will be in place to prevent unauthorised vehicle access to the site.

The site is manned on a 24/7 basis by site operatives during operating hours and security staff outside of operational hours.

The gates and fencing are inspected weekly to identify any weaknesses or defects. Any defects identified are repaired with a temporary solution within 24 hours, with a permanent fix implemented within 7 days, unless a timescale is otherwise agreed with the NRW.

The site benefits from CCTV that is monitored 24/7 by EMCS Nottingham and all doors to buildings are locked when not in use.

2.9 Fire Sources and Prevention Measures

Table 2-3 below provides a summary of the potential causes of fire on site and associated preventative measures and is taken from the FPMP guidance.

Table 2-3
Fire Sources and Preventative Measures

Cause	Preventative Measure
Arson and Vandalism	The site has a number of security measures in place to limit the likelihood of arson or vandalism including:

Cause	Preventative Measure
	■ Perimeter fencing with a gated entrance which is locked if appropriate; ■ Lockable doors on the processing building and office/welfare facilities; ■ Full CCTV coverage of all areas; ■ 24/7 presence of site operatives or security guards; ■ Inspection and maintenance procedures; and ■ A visitor sign in system. In the event of a breach of security at the site, the cause will be investigated, and appropriate mitigation measures implemented. This will be recorded in the Daily Site Log. Records maintained will include inspections and maintenance of doors and locks, breaches of security, investigations and actions taken.
Site Visitors and Contractors	Site safety and fire prevention procedures are explained to all site visitors and contractors. Site visitors are accompanied at all times by a site operative.
Self-Combustion	Effective stock management limits the likelihood of the self-combustion of materials stored on site. As such, the site has waste acceptance and stock management procedures which are upheld by all employees at the site, as detailed in Section 2.2. Only wastes included in Table S2.1 of the EP are accepted at the site. Non-waste materials that pose a risk of self-combustion are stored as indicated in Table 2.2.
Plant or equipment failure	Plant and equipment are maintained in accordance with the manufacturer's recommendations. All new plant on site is fitted with telematics, which automatically highlights any faults. Plant and equipment are operated in accordance with the manufacturer's instruction manuals. Instruction manuals for plant and equipment are held either on site or online if a hardcopy is not available from the manufacturer. No industrial heaters are utilised on site. Wall mounted convection heaters are provided in the office and welfare areas. The Site Manager ensures the heaters are switched off when an area is not in use. There is no heating provided in the main building. Induction training and refresher training is provided to staff in the safe operation of plant and equipment relevant to their role, in accordance with the EMS. Inspection of plant and equipment is undertaken on a daily basis to check for faults and ensure appropriate safeguards are in place. The procedure also covers general housekeeping and cleaning of plant and all equipment on site. Storage of mobile plant is detailed in Section 2.6 above. In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is

Cause	Preventative Measure
	shut off in a safe manner and not used until the equipment can be repaired or replaced.
Electrical faults (including damaged or exposed electrical cables)	All electrics on site are fully certified by a qualified electrician and regular safety inspections are carried out in accordance with the EMS. Records of faults and/or daily electrical maintenance are recorded in the site diary.
Naked lights	All ignition sources are kept a minimum of 6m away from the storage of combustible and flammable wastes. No naked lights are permitted on site.
Discarded Smoking materials	A designated smoking area is provided outside the welfare facility. The area is located a minimum of 6m from any combustible waste. No smoking outside of the designated shelter is permitted on site.
Hot works	All hot works are undertaken under a permit to work system which includes a 60-minute fire watch by a competent person at the end of the works. No hot works are undertaken by staff unless they are trained and have the relevant permit to work. All hot works are conducted in a cleared area of the site at least 6m from any combustible wastes. A site operative performs a continuous fire watch during the hot work and for a minimum of 60 minutes after the work is completed.
Hot Exhausts	Vehicles are turned off when not in use. Consideration is given to the high-risk time for hot exhausts (one hour after switch off when dust can settle on hot surfaces) and wherever possible vehicles are given time to cool down prior to site staff leaving site at the end of a shift. Plant is parked a minimum of 6m from waste storage, minimising potential for exhausts to result in ignition of wastes when left unattended following the end of the shift.
Open Burning	Burning is not permitted on site.
Reactions between incompatible materials	To ensure that incompatible materials or reactions do not take place, waste is offloaded at the site supervised by suitably qualified site operatives. Only vehicles that are accompanied by the correct documentation are accepted onto site. Waste undergoes a visual inspection at the point of deposit into the building. Tanks containing fuel are constructed so that any leaks/spillages are contained. Tanks are integrally bunded with a leakage containment bund capable of containing at least 110% of the volume of the tank. Bunds are impermeable and resistant to the stored materials.
Neighbouring sites	The site is located within The Pembroke Dockyard and no immediate neighbours pose a risk of fire. Employees remain aware at all times and report activities or behaviour which could represent a fire risk from neighbouring sites to the Site

Cause	Preventative Measure
	Manager. The manager will then take action as appropriate to address the risk.
Incompatible Wastes (Including reactions between incompatible materials and batteries)	All wastes arriving onsite are checked in accordance with the waste acceptance procedure, details of which are included within Section 2.2 of this FPMP, to ensure no non-conforming materials are accepted at the site. Any identified non-conforming materials are safely handpicked and moved to the relevant bay or into the residual waste bays for removal from site. Any identified batteries are safely handpicked and placed into the specialised battery storage box supplied by the off taker. Spillages and leakages of fuels and oils will be handled in accordance with the Accident Management Plan.
Hot loads deposited at site	No burning, reactive / reacting or visibly hot (producing steam or heat) loads are accepted on site. In accordance with the waste acceptance procedure detailed within Section 2.2 of this FPMP, each load is visually inspected at the site entrance to ensure compatibility with accompanying delivery notes, therefore minimising prohibited wastes and the acceptance of hot loads. Instructions are given to customers to ensure no hot loads are accepted on site. Should a hot load be deposited on site, it will immediately be removed to the dedicated quarantine area and removed from site the same day to a suitably licenced facility for disposal.
"Tramp" metal	Wastes are pre-segregated before acceptance on site and the waste acceptance procedures outlined in Section 2.2 ensure a low risk of contamination.

3.0 Fire Management

3.1 Containing and Mitigating Fires

A fixed fire suppression system, such as a deluge or high-level sprinkler systems are not considered to be appropriate or Best Available Technique (BAT) for buildings that are open and have very high ceilings.

The nature of the on-site buildings is that they have very high ceilings with the roller shutter doors kept open throughout the day.

Because such systems rely on being activated by heat sensors located in the roof of a building, they need to detect a temperature well above 50 degrees to be activated. However, in large buildings with high ceilings, a 'cold air plug' would typically develop at ceiling level during the early stages of a fire due to cold air becoming trapped above the rising hot air. This means that the system is only likely to be activated in this type of building once a fire has become deep seated.

Therefore, the most effective way of minimising the time it would take to extinguish a fire in this type of building, is to focus on early detection and monitoring of waste piles. This allows any potential fire to be detected and managed at the earliest possible stage when on-site plant can be utilised to move waste and isolate a fire so that it can be suppressed and extinguished quickly using fire hoses and extinguishers.

As discussed in Section 2.1, the site benefits from an extensive series of detection systems and is manned 24/7, therefore fires will be detected early by the trained employees or the security guards.

In the event of a fire, site operatives trained in the use of the mobile plant and fire management procedures can be on site within 1 hour of being notified of a fire.

The local FRS will assume full control for the approach to suppression/extinguishing of any fire once it is in attendance at the site.

3.1.1 Manual Fire Suppression

The locations of all fire extinguishers on site are illustrated on Drawing 004 V3. Foam, carbon dioxide and powder extinguishers are provided across the site. The extinguishers are inspected annually.

Hose reels are located around the site at the locations illustrated on Drawing 004 V3. The hose reels are fed by a mains water supply.

The waste processing buildings are constructed to the appropriate standards. Should fire compromise the stability or integrity, the buildings and site will be immediately evacuated.

3.1.2 Site Plans

Up-to-date site plans are on display in the site office and detail:

- Site layout;
- Waste storage arrangements;
- Firefighting equipment locations (Pollution Control Equipment); and
- Personal Protection Equipment (PPE).

In addition, all procedures relating to emergency procedures on site, including fires, are held within the site office and can be easily found and are readily available.

3.2 Managing Emissions to Air, Land and Water

3.2.1 Fire Combustion Emissions

As detailed in Section 2.1, the building is alarmed and has a fire detector connected to a 24hr alarm receiving centre ensuring rapid detection of a fire and minimisation of damage and emissions. The fire will likely be contained within the building and the waste is classified as non-hazardous.

All buildings have roller shutter doors to aid fire-fighting by enabling the clearance of any smoke.

3.2.2 Emergency Response

As detailed in Section 3.6.3, all firewater will primarily be kept within the building via the use of sand bags. The FRS will collect and reuse firewater where possible to reduce the volume of water requiring containment and therefore reduce the risk of any emissions to water. As a secondary means of containment, drain mats stored on site will be used to ensure no emissions to surface water or sewer can occur.

3.3 Fire Drills on Site

A fire drill is carried out and documented on a 6-monthly basis.

This FPMP is implemented across the site and all fire management equipment is tested on an annual basis.

If any issues are found during these fire drills, the FPMP will be updated or amended accordingly and site operatives will be re-trained.

Regular checks are made of all escape routes and equipment.

3.4 Emergency Contact Details

An emergency contact sheet is included in Appendix 01. In the event of a fire the following procedure will be followed:

- The Site Manager or individual nominated by the Site Manager will locate the emergency contact list included in Appendix 1;
- In the event of a large fire, 999 will be dialled first;
- The Site Manager or individual nominated by the Site Manager will phone each of the local receptors included in Appendix 1, followed by the sewage service if appropriate to do so; and
- Finally, the NRW incident hotline will be dialled once the situation is under control.

PCC will use its website and social media channels to further communicate information regarding the fire event.

3.5 Site Procedures

3.5.1 Small Fire

A small fire or area of smouldering waste will be dealt with as follows:

- A fire or area of smouldering waste will not be dealt with in-situ, mobile plant will be utilised to pull the affected waste into the open and away from any further waste that could become a light on contact; and
- Depending on the size / nature of the fire the waste will either be:

- Extinguished immediately[10] utilising the fire extinguishers or hose reels; or
- Moved to the quarantine area and extinguished[11].

Depending on the size, location and nature of the fire the burning waste will be pulled into the dedicated fire prevention quarantine area following the procedures detailed in Section 3.7.1.

Once a small fire is dealt with the remaining area will be visually inspected immediately by site operatives for any signs that a fire / smouldering waste still remains. The same procedure, detailed in this section, will be implemented should this be the case.

3.5.2 Uncontainable Small Fire or Large Fire

The following procedure is in place on site that will be followed in the event of a small fire becoming uncontainable or in the event of a major fire onsite:

- The Site Manager and FRS will be contacted immediately. The local sewerage service and NRW will be notified at the first opportune moment.
- Following arrival of the FRS, all site staff will take instructions from them which may include any of the following:

- If possible, waste that is unburnt will be dampened down to prevent the fire from spreading further;
- If possible, unburned material will be separated from the fire using heavy plant;
- The burning area will be isolated, and attempts will be made to extinguish the fire utilising the onsite fire extinguishers/hose reels if safe to do so; and
- The site and buildings will be evacuated.

3.5.3 Additional Procedural Considerations

The following techniques will be considered in addition to extinguishing a fire using water:

- Reducing the amount of firewater run-off generated by using sprays and fogs rather than jets.

This is the responsibility of the FRS.

- Recycling firewater will occur if it is not hazardous and it is possible to reuse.

Site operatives will work in conjunction with, and take instruction from, the FRS if they deem recycling firewater to be a possibility.

The following parameters will be considered when determining which firefighting options/strategy to implement in the event of a fire:

- The scale and nature of the environmental hazards on site and the activities that take place on it;

10 Should a single item of the waste stream be alight, and the fire is well contained, then the waste will be doused via use of an extinguisher/hose reel as it is pulled from the waste pile. The burned / fire- damaged portion will then be removed to the quarantine area and the remaining waste returned to the pile.
11 If the fire is not easily contained to a single item, then the obviously alight portion of the waste will be removed to the quarantine area.

- The risks posed to people, the environment and property;
- The types of materials currently stored on site, in what form they are stored in and the length of time needed to extinguish a fire involving them; and
- The availability of firewater containment facilities.

3.6 Fire Waters

3.6.1 Site Drainage

The main details of the site's drainage system are illustrated on Drawing 004 V3. There is no drainage within Unit 41and external site drainage is managed as follows.

The drainage channel situated at the entrance to Unit 41 and surface water from the external yard area all drains to foul sewer. The surface water outlet located in the external yard area that drains to the former pickling pond (noting this pickling pond was infilled in 2023) (salt water tidal lagoon) is plugged to ensure no release of surface water from the site. All waste is stored inside Unit 41. All liquid generated within Unit 41 will be contained within the building and tankered off site.

Clean surface water collected from the building roofs and from the external yard area in the northern part of the site is channelled to a surface water outlet.

3.6.2 Firewater Calculations

Based upon the FPMP guidance firewater calculations a 300m³ stack of combustible material will require an average water supply of at least 2,000 litres a minute for a minimum of 3 hours. This equates to approximately 360m^3 of water. Based on this calculation and the largest stockpile within Unit 41, the water requirements are as follows:

- Unit 41: 133,866 litres (134m³).

Sources of water available onsite are:

- 3 x Hydrants[12] as shown on Drawing 004 V3 all with a flow rate of between 416 litres per minute and 1,083 litres per minute; and
- The on-board water supply from FRS vehicles.

If possible, the FRS will collect and reuse firewater run off as part of normal operating procedures.

3.6.3 Fire Water Containment

The primary and secondary means of containment detailed below provide sufficient containment for all likely firewater arising from an incident.

Bunding Building Doorways (Primary)

As a primary means of containment on site the doorways to Unit 41 will be bunded to ensure all firewater is kept within the building. Bunding kits and / or made up sandbags are stored within the Unit 41 permitted area ready for use in the event of a fire.

12 A replacement programme for all hydrants will commence in 2019.

The containment capacity of Unit 41 is shown below and is based on the area of the building in m² and the height of a sandbag at 0.15m:

- Unit 41: 421,000 litres (421m^3).

Unit 41 is therefore capable of containing the worst-case firewater requirements calculated in Section 3.5.2 above.

Any firewater contained within the building will be removed via tanker to a suitably authorised facility. PCC will utilise their own fleet of tankers to remove firewater from site or can utilise the services of Wales Environmental and Ambipar Response Ltd whose details are included in Appendix 01.

To ensure there is no release of firewater from the site, the secondary means of containment described below is also in place.

External Yard Area (Secondary)

Drain mats stored on site will be utilised in the event of a fire to ensure no potentially contaminated firewater can enter the surface or foul water drainage systems. It is anticipated that only the drainage channels located at the entrance to Unit 41 and the open drains illustrated on Drawing 004 V3 will need to be covered with a drain mat.

3.7 Management after a Fire Event

After a fire event, the following procedure will be implemented depending on the severity of the fire:

- A small and containable fire that can be safely dealt with in-house using suitably trained staff and firefighting equipment located on site: The fire will be recorded in the site diary, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPMP and the site's EMS as required.
- A larger fire that requires the presence of the FRS: If the site operatives have been told to evacuate or cease operations by the NRW and/or FRS, the site will wait until told safe to re-enter site and resume operations. All incoming waste will be diverted to the authorised facilities shown below and no waste collections will take place during the fire event. Any closure of the site will be followed by informing customers and the regulatory authorities. The fire will be recorded in the Daily Site Log and in an incident report and will detail the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPMP and the site's EMS as required.

Should damage be sufficient to prevent the site from being able to store waste, the site will cease accepting waste and will divert to the following authorised facility:

- Residual and recycling bulking and disposal at AJ Recycling in Boncath.

The Site Manager will liaise with NRW to determine a plan-of-action to introduce normal operations at the site, and the timescales involved to achieve this.

3.8 Fire Damaged Waste

A visual assessment will be carried out by the Site Manager to determine whether the waste can be baled on site. Wherever possible, unburnt wastes will be separated from fire damaged piles. If waste piles have become mixed, then it is likely that the waste will be removed from site to a suitably permitted facility.

Site Management will determine what decontamination and cleaning measures will be required to be carried out proportionately to the impact caused by the fire. Measures to be implemented include (but are not limited to):

- Hose down affected areas;
- Sweep/brush up any loose burnt waste or contaminated firewater ready for removal from site; and
- Assess any damage to site infrastructure as detailed below.

After a significant incident, an assessment will be undertaken by a suitably qualified individual. Technically competent managers and/or engineers and/or the insurance company will assess the degree of damage caused by a fire and the residual risk from fire damaged waste, emissions or equipment. Burnt waste material will be kept on site for a short period of time if required for a subsequent internal investigation. Following this, the material will be transferred off site to a suitably licensed disposal facility.

The period of time taken to restore the site or affected part of the site to operational status will be determined by the nature and extent of the fire. If the affected area does not impact the rest of the site's operation, operations will re-start as and when appropriate.

3.8.1 Quarantine Area

The site benefits from a dedicated fire management quarantine area that can hold at least 50% of the largest stockpile on site. The quarantine area will remain clear at all times.

The location of the quarantine area is illustrated on Drawing 004 V3 and detailed in Table 3-1 below.

Non-conforming waste will be handled in one of the following ways:

- Deposited within the residual waste;
- Handpicked in the existing bay; or
- Reprocessed until it reaches the appropriate quality.

Table 3-1
Quarantine Area Dimensions

Quarantine Area	Primary Use	Length (m)	Width (m)	Height (m)	Volume (m^3)
Fire Prevention	Separation of unburnt waste.	6.4	6	3	115

The quarantine area always maintains a separation distance of at least 6m on all sides (where not adjacent to a wall).

The quarantine area will be used to store unburnt waste that has been separated from any burning waste to prevent any further fire spread. The area will not be used to douse burning waste therefore no containment measures for firewater are required.

The placement of the quarantine area in this location provides an open area of the site to allow for the prompt and direct removal of unburnt wastes from the waste storage and to allow access by the FRS.

Site Management will instruct all site operatives when and how the unburnt waste, or any hot loads delivered accidently to site, will be moved to the quarantine area. The following procedure will be implemented on site:

- When it is safe to do so, the waste will be moved by on site plant to the quarantine area;
- The movement of the waste will be overseen at all times by the Site Manager to minimise any spillages and ensure the area is not overfilled; and
- To limit any spillages, plant will not be overfilled when moving the waste.

All site operatives will be trained to follow this FPMP and all procedures listed in the above sections.

4.0 Conclusion

This FPMP is considered to be a 'working' document that is reviewed and updated annually or as required should any of the following occur:

- A fire on site;
- A change or review of legislation; or
- If the site is instructed to do so by the NRW.

It is the responsibility of the Site Manager or nominated person to maintain this FPMP and to ensure it is adhered to in the event of a fire on site.

Appendix 1: Emergency Contact Sheet

Fire Service (in the event of a major fire)

- 999 or 112

Natural Resources Wales Hotline (24 hour service)

- 0300 065 3000

Local Receptors (with associated directions)

- South Pembrokeshire Hospital (South): 01646 682114;
- Essential Furnishings (North): 01642 492182;
- Mainstay Marine Solutions (North-East): 01646 681117;
- Pembroke Port (East): 01646 696631;
- Surehaven Pembroke Hospital (East-West): 01646 621105;
- Irish Ferries (North-East): 0843 506 0310;
- Lakeland Guest House (South): 01646 687274;
- South Pembrokeshire Golf Course (South): 01646 621453;
- Pembroke Dock Heritage Centre (South-East): 01646 684220;
- Pembroke Dock Community School (South-East): 01646 684872;
- Penner Community School (South): 01646 684402;
- Grainger Tubolt Ltd (East): 01646 683584;
- The Shipwright Inn (East): 01646 682090.

Sewage Service – Welsh Water Emergency Number (24-hour service)

- 0800 085 3968

PCC Waste Transfer Station

- Peter Harts (Emergency Key Holder): 07774 294296;
- Nigel Cole (Emergency Contact): 01437 776677;
- Andrew Wood (Emergency Contact): 07900 654510;
- PCC Site Number: 01437 764551

Fire Detection System

- OCON Fire & Security: 01646 601 100

Alarm Monitoring Centre

- EMCS Nottingham: 0844 80 999 80 (Emergency number: 07866 896481)

Incident Response

- Wales Environmental: 01834 860 777 (24/7 Number: 02920 456 456);
- Ambipar Response Limited: Emergency number: 01202 653558.

Appendix 2: Drawings

Drawing 002V3: Environmental Permit Boundary

Drawing 003 V3: Environmental Site Setting

Drawing 004 V3: Site Layout and Fire Management

WRML-PDOCK37N: Unit 41 Layout

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