

EMS

Appendix 5



Fire Prevention and Mitigation Plan

Jay Metals

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1 Introduction, Summary and On-site Combustible Wastes

1.1 Introduction and Summary

1.1.1 Introduction

This **Fire Prevention and Mitigation Plan (FPMP)** has been compiled using the latest **Fire Prevention and Mitigation Guidance – Waste Management (Guidance Note 16, Version 2, August 2017)** provided and compiled by **Natural Resources Wales (NRW)** in collaboration with the **Fire & Rescue Service (FRS)** in Wales. **This FPMP forms part of the Operators Management System (EMS)** in accordance with **Condition 1 – "General Management" and 3.4 – "Fire"** of the **Environmental Permit**, previous additional and supporting information is also provided within the Operators **EMS, Accident Management Plan, Spillage Procedure** etc.

This **FPMP** aims to provide measures and **procedures to minimise the likelihood of fire** occurring at the site and **limit and control the impacts of emissions from the site** to adjacent receptors and the local environment. The information contained within this **FPMP** also helps to identify resources required by **NRW** and other emergency responders during an incident and any post incident remedial actions. **A copy of this FPMP (Fire and Rescue Emergency Information Pack) should be kept on-site**, be made known to and be **readily available to site employees and the FRS** by placing an additional external copy in the **FRS EMERGENCY SERVICES BOX which is located outside the site at the site entrance**.

Any changes to this plan or site operations which may affect changes to this **FPMP**, should first be consulted with the **NRW** for agreement beforehand, the agreed changes should then be detailed within the revised **FPMP** and any other relevant **supporting Appendices, Plan(s)** or **EMS** documents before implementation. This **FPMP should also be reviewed** regularly and immediately afterwards where there has been a fire incident, the review should address concerns raised from the incident and to assess whether the procedures and controls can be improved and revised within an updated plan.

1.1.2 Summary of Site and Environs

The Scrap Yard (The Site) is located in an area of natural and rural countryside, the site is constructed of a bunded concreted surface laid on top of made ground consisting of granular fill to raise levels of the site where the underlying natural unmade **ground slopes** from the adjacent Road located at the Northern perimeter of the site **towards a drainage ditch located approximately 40 metres away to the Southern perimeter of the site**.

Recycling and Recovery Operations carried out at the Site include depollution of End of Life Vehicles and their storage, including the fuels, oils fluids and batteries removed from vehicle depollution within a covered ELV Building located towards the northern portion of the site. Storage of depolluted engines, axles, gearboxes and Waste Electrical and Electronic Equipment (WEEE) is within the adjacent Workshop Building located within the centre of the site. Scrap Metal Storage and Baling is carried out within the Open Yard areas of the site.

The owners and Operators' residential property (**the Farm House**) is located immediately to the North West of the Site and adjacent to the country road. An **agricultural yard and building** is located beyond the Eastern perimeter of the Scrap Yard Site.

A drainage ditch Located approximately 40 metres South West of the Site is which begins the start southern upper reaches of the Afon Pedarn which flows to the North West. A well- used for potable water extraction & supply the Farm House is located approximately 75 metres South East of the Site.

Other nearby residential properties are located approximately 0.5km (Maesgwyn, Clungwyn, Fron-glyd etc.) and beyond to the East towards Llanfrynach and North towards Cilrhedyn of the site.

There are no protected habitats or SSSIs, source protection zones or fisheries within 1 Km of the site, the site is not at risk of flooding or located within a flood zone.

Further details of the sites' Sensitive Receptors are provided in **Section 2.5 - Sensitive Receptors** of this document.

1.2 On-site Flammable, Combustible & Self Combustible Wastes

1.2.1 Flammable & Combustible wastes which are accepted and stored at the site are limited to the following wastes listed below:

- Waste fuels, oils & liquids from depollution of ELVs only
- End of Life Vehicles (ELV's, pre & post depollution)
- Tyres (Whole) removed from ELV's
- Lead Acid batteries removed from ELV's

Maximum storage times for all potentially Flammable and Combustible wastes **are less than 6 months**.

1.2.2 Qualifying **Self Combustible** wastes which are accepted and stored at the site are limited to the following waste listed within the FPMP Guidance:

- Tyres (Whole) removed from ELV's

Maximum storage times for all potentially Combustible wastes **are less than 3 months**.

1.2.3 The types quantities, locations and storage duration of listed combustible wastes are provided within Table 1.2.3 below:

Table 1.2.3 On-site Flammable & Combustible Wastes			
Waste Type	Quantity / Volume	Storage Location & Duration	Comments
Waste Fuels, Liquids and Oils from ELV Depollution	ELV Treatment Area End of Life Vehicles x 2 - Not Stacked Depollution Equipment containing: Petrol – 200lt Diesel – 200lt Oil – 200lt Coolants, etc. – 200lt Separately Bunded Containers, containing: Oil –10 x 205lt steel drum Coolant – 6 x steel drum Brake Fluid – 1 x 205lt steel drum	ELV Depollution Building, Area A1 < 6 months	All fluids must be stored in fire resistant & sealed metal drums. Plastic drums & IBCs must not be used for storing any flammable or polluting liquids in this area! High Risk Fire Hazard

Table 1.2.3 On-site Flammable & Combustible Wastes			
Waste Type	Quantity / Volume	Storage Location & Duration	Comments
End of Life Vehicles	Less than 15 tonnes (10 vehicles) / 100m ³ (5m x 10m x 2m) Stacked no more than 2 vehicles high	ELV Depollution Building, Area A2 < 3 months	Sealed drainage within the ELV Building, open fronted building allowing unrestricted access from the north (road side) of the site High Risk Fire Hazard
Whole Tyres	Less than 5 tonne / 50m ³ (8m x 2.5m x 2.5m)	Shipping Container North-East Corner (road side) of the Site Area A6 < 3 months	Kept in Lockable Steel Fireproof Shipping Container. Moderate Risk Fire Hazard
Lead / Acid Batteries	28 x 1tonne covered battery boxes, maximum	ELV Depollution Building Area A3.2 < 6 months	Sealed drainage within the ELV Building, open fronted building allowing unrestricted access from the north (road side) of the site. Low Risk Fire Hazard
Metal Baler	Approximately 1 Vehicle or 2 tonnes scrap metal maximum treatment / baling capacity	Open Yard Area, near SW Perimeter, Area A4 < 1 day	Sealed drainage to sump. Low Risk Fire Hazard
Baled Depolluted ELVs	Less than 2 x 15 tonne / 30m ³ (6m x 2.5m x 2.5m)	1m ³ to 2m ³ Metal bales > 95% metal Area B7 < 2 weeks	Kept in 2 x Roll-on / Roll-off steel containers Low Risk Fire Hazard
WEEE	Large Metal Appliances (Cookers & Washing Machines) < 20 tonnes / 105m ³ (3.5m x 10m x 3m)	Southern portion of the Workshop Building at the centre of the site Area B4.2 < 6 months	Kept within closed and locked building Low Risk Fire Hazard
Non-permitted Waste. (unspecified)	1m ³ contained within a battery box within the steel shipping container	Shipping Container North-East Corner (road side) of the Site Area A5 < 1 month	Closed & Lockable steel fireproof container. Low Risk Fire Hazard
Scrap Metals	<i>See details provided separately in Table 1.4.1:</i>		Powders, Fines & Small Particles are not accepted or produced from recovery operations. Low Risk Fire Hazard

Locations, process and storage areas site drainage, pollution controls and emergency provisions are provided in:

- **Appendix 1.3 –Site Layout & FRS Emergency Plan**, and;
- **Appendix 1.4 –Operational Site Layout & Drainage Plan**.

1.2.4 The storage duration of degradable, combustible or flammable wastes will be controlled on a first in / first out basis to ensure that wastes do not exceed storage times or increase any potential fire hazards.

1.3 On-site other Potentially Flammable or Combustible Non-Waste Materials

1.3.1 Other notable combustible and flammable substances and materials which are stored at the site are also included within **Table 1.3.2** Below:

- Diesel fuel – for use in on-site vehicles & plant
- LPG Cylinders– for off-site domestic use in heating & cooking at the Farm House

1.3.2 The types quantities and locations of listed combustible wastes are provided within Table 1.3.2 below:

Table 1.3.2 Flammable or Combustible Non-Waste Materials			
Waste Type	Quantity / Volume	Location	Comments
Diesel fuel	2 x 2,500lt, maximum	Western edge of the site between the site offices	GRP tank within bunded area High Risk Fire Hazard
Gas Cylinders	4 x 19kg Propane / Flammable Gas Cylinders, maximum	Kept within cage near the site entrance at the North-West corner of the site	For off-site domestic use. Gas Cylinders are not accepted on-site High Risk Fire Hazard

1.4 On-site Non-Flammable and Non-Combustible Scrap Metal Wastes

1.4.1 The majority of the wastes (Scrap Ferrous & Non-ferrous Metal) stored on site are non-flammable and non-combustible, these are also included within **Table 1.4.1** Below:

Table 1.4.1 Non-flammable and Non-combustible Wastes		
Waste Type	Location	Quantity / Volume & Storage Duration
Scrap Non-ferrous Metal (Sorted/Treated)	A3.1	Less than 10 tonne Non-ferrous Metal Stored within Building < 12 months
Scrap Non-ferrous Metal (Loose untreated)	B1	Westerly Pile: Approximately H x 3m x D x 4m L x 8.5m Easterly Pile: Approximately H x 3m x D x 4m L x 12m Approximately 20 tonnes combined total < 3 months
Scrap Non-ferrous Metal (Sorted/Treated)	B2	Approximately H x 2m x D x 2.5m L x 44m Approximately 5 tonnes < 12 months
	B3	Approximately H x 2m x D x 2.5m L x 18m Approximately 10 tonnes < 12 months

Table 1.4.1 Non-flammable and Non-combustible Wastes		
Waste Type	Location	Quantity / Volume & Storage Duration
Scrap Ferrous & Non-ferrous Metal (Sorted/Treated)	B4.1	Depolluted Engines, Axles & Gearboxes Less than 15 tonnes kept within Building < 12 months
	B5	Scrap Metal Skips / 35 cu' yard steel Containers Approximately (2 x 15 tonnes) 45 tonnes maximum storage. < 3 months
Scrap Ferrous Metal	B5	Scrap Metal Pile, pending baling Approximately H x 3m x D x 4m L x 18m Approximately 30 tonnes < 3 months
Scrap Ferrous & Non-ferrous Metal (Sorted/Treated)	B6	Scrap Metal Skips / 40 yard ³ steel Containers x4 Approximately (4 x 15 tonnes) 60 tonnes maximum storage < 3 months

- 1.4.2** The storage duration of degradable, combustible or flammable wastes will be controlled on a first in / first out basis to ensure that wastes do not exceed storage times or increase any potential fire hazards.

2 Site Details and Controls for Fire Prevention and Mitigation

2.1 Storage and Management of Combustible and Flammable Wastes

- 2.1.1 **End of Life Vehicles** (ELVs) received at the site are placed directly onto the Depollution Unit in **Area A1**, or are stored within the **ELV Depollution Building** in **Area A2** awaiting depollution, which then undergo depollution procedures which are further described separately in the **EMS – Process Description Management and Controls** document.



The ELV Depollution Building is a steel framed and clad roofed building which is closed on 3 sides, the north side of the building (facing the road) is open and provides access all along its length.

This building covers an area of approximately 25m x 12m, the floor comprises of an impermeable concrete base with drainage to a sealed sump located in the North-West corner of the building.

All combustible, flammable and polluting fluids are removed from vehicles and are **also stored within the building** as detailed previously in **sections 1.2 & 1.3 - On-site Combustible Wastes** etc.

Tyres removed from vehicles are **stored within a steel fireproof lockable shipping container** which is located opposite the North-Eastern section of the ELV Depollution Building in **Area A6**.

Non-ferrous metals (typically copper piping and brass fittings) are sorted, cut to size and stored with the North-Western section of the building in **Area A3.1**. This area is partitioned from the ELV Depollution operations and Storage areas (A1 & A2). **Metal powders, fines, turnings, pyrophoric metals or other reactive metals** or substances **are not accepted at the site or stored** within the building.

Due to the quantity and nature of the combustible and flammable wastes stored and produced from **ELV Depollution Operations**, the **ELV Depollution Building Areas A1 & A2 is considered as the Main Fire Risk** area on the site.

2.2 Access and Separation Distances

- 2.2.1 Access  to the site is via 2 lockable sturdy **steel panelled gates which adjoin the country lane**.

The **width of the access to the site** when the gates are fully open is **approximately 6 metres**.

Access for FRS Vehicles to all areas around the internal site perimeter and central buildings allows for an **access distance of more than 4 metres**, the management and control of scrap metal storage areas, and location of plant and equipment will need to ensure that minimum access distances within the site are maintained and that stockpiles are not exceeded or creep into and obstruct these access areas.

2.3 Common Causes of Fires and Preventative Measures

Table 2.3 Common Causes of Fires and Preventative Measures		
Common Causes		Risk Reduction Measures and Controls
1	Arson or vandalism	<p>Security measures include a CCTV system which is continuously monitored via an on-site monitor in the site office and on mobile phones application) during operational and non-operational periods and alarmed to inform the Operator on-site and family staff residing at the adjacent property of unauthorised intruders.</p> <p>Entrance to the site is via a 2.4m high steel gate which is kept locked outside operational hours and a 2.4m high steel palisade and steel mesh security fencing is installed around the site perimeter.</p> <p>All site areas and site perimeters at the site are within easy visual range for on-going surveillance during working and non-working hours by the Operator, site staff and staff family members residing and working in and around the farm land that also surrounds the site.</p>
2	Visitors & Contractors	<p>Fire Safety Procedure and Information Notices are provided for Visitors and Contractors at and by the Site Reception Office. Fire Prevention Signs (No Smoking, No Naked Flames, No Mobile Phones) are placed around the site in readily visible locations.</p>
3	Ignition sources	<p>No naked flames, space heaters, hot works (e.g. welding) is employed or permitted on-site.</p>
4	Self-combustion	<p>There are readily self-combustible wastes permitted, accepted or stored at the site.</p> <p>Combustible wastes are not stored next to or in contact with oxidising (rusting) wastes.</p> <p>Storage of a small quantity of whole tyres are kept within a fire-proof closed container for no longer than 3 months.</p>
5	Plant or equipment failure	<p>Maintenance and inspection programs are in place for all static and mobile plant and equipment.</p> <p>Mobile Machine Grab & 2 x Fork Lifts are fitted with Fire Extinguishers.</p> <p>Locations of static and parked equipment and plant are within areas that are not used for treating or storing combustible or flammable wastes.</p>
6	Discarded smoking materials	<p>A No Smoking Policy is in place, smoking is prohibited on-site, site staff, visitors and contractors wishing to smoke are directed to the designated area (near the Fire Assembly Point) outside the site on the opposite side of the road.</p>

Table 2.3 Common Causes of Fires and Preventative Measures

Common Causes		Risk Reduction Measures and Controls
7	Hot works (e.g. welding or cutting)	Hot works are not carried out as part of the daily recovery operations by site staff, where hot works are required for maintenance, they will be carried out by qualified contractors, then the Site Manager will prepare a Safety Report, a Permit to Work and arrange a Fire Watch during and following the Hot Works.
8	Industrial heaters	Industrial Heaters or heating appliances are not used on-site.
9	Plant & Hot exhausts	The metal recovery activities on-site do not generate combustible debris, dusts or fluff. The Machine Grab and 2 x Fork Lifts are constantly monitored by site staff using them and are visually inspected and cleaned at the end of their working day.
10	Damaged or exposed electrical cables	There are no damaged or exposed cables on-site, regular inspection, certification and maintenance of the site electrics is carried out by a locally qualified electrician.
11	Reactions between wastes	Incompatible wastes or Lithium or Dry Cell Batteries are not accepted or received on-site. Lead Acid Batteries are removed immediately from ELVs on receipt and are placed within covered battery boxes prior to off-site recovery.
12	Hot loads deposited at the site	Hot loads or wastes generated from thermal industrial processes (E.g. Slags) are not accepted at the site. Where any hot wastes are inadvertently accepted on-site, these will be moved and confined to the Hot Waste Isolation Area, (Area 10) as shown in FPMP Appendix 1.3 – Site Layout & FRS Emergency Plan.
13	Build-up of loose combustible waste, dust and fluff	The wastes received at the site do not contain loose combustible waste or dusts & fluff, nor does the site recovery activities generate them. Daily site inspection and good housekeeping and cleaning is employed to ensure that there is no accumulation of loose debris or dust/mud within the site.
14	'Tramp' metal	The site recovery activities do not produce Tramp metal or fine metal debris.
15	Batteries within waste deposits	Lead Acid Batteries are received at the site from customers as separate items and are not accepted

Table 2.3 Common Causes of Fires and Preventative Measures

Common Causes		Risk Reduction Measures and Controls
		as part of a mixed load, batteries are handled separately and are placed immediately within covered battery boxes for storage prior to off-site recovery.
16	Batteries in ELVs	Lead Acid Batteries are removed immediately from ELVs on receipt and are placed within covered battery boxes prior to off-site recovery.
17	Cylinders stored at the site	There are no more than of 4 x 19 Kg LPG Gas Cylinders kept upright within a metal cage in a well-ventilated position in the open yard area of the site. The LPG Gas Cylinders are safely stored away from sources of heat and ignition a designated Area (Area 1) as shown in FPMP Appendix 1.3 – Site Layout & FRS Emergency Plan.
18	Leaks and spillages of oils and fuels	All Oils and fuels on-site are kept within containers with secondary containment. Depollution operations are solely carried out within the contained ELV pollution area. Locations of fuel, Oil and Depollution treatment and storage activities shown in FPMP Appendix 1.3 – Site Layout & FRS Emergency Plan. Any leaks or spillages are immediately dealt with in accordance with EMS Appendix 2.1 - Leaks & Spillage Procedure to prevent these polluting and flammable or combustible substances from being tracked around the site.

2.4 Management of Waste Stacks and Separation Distances

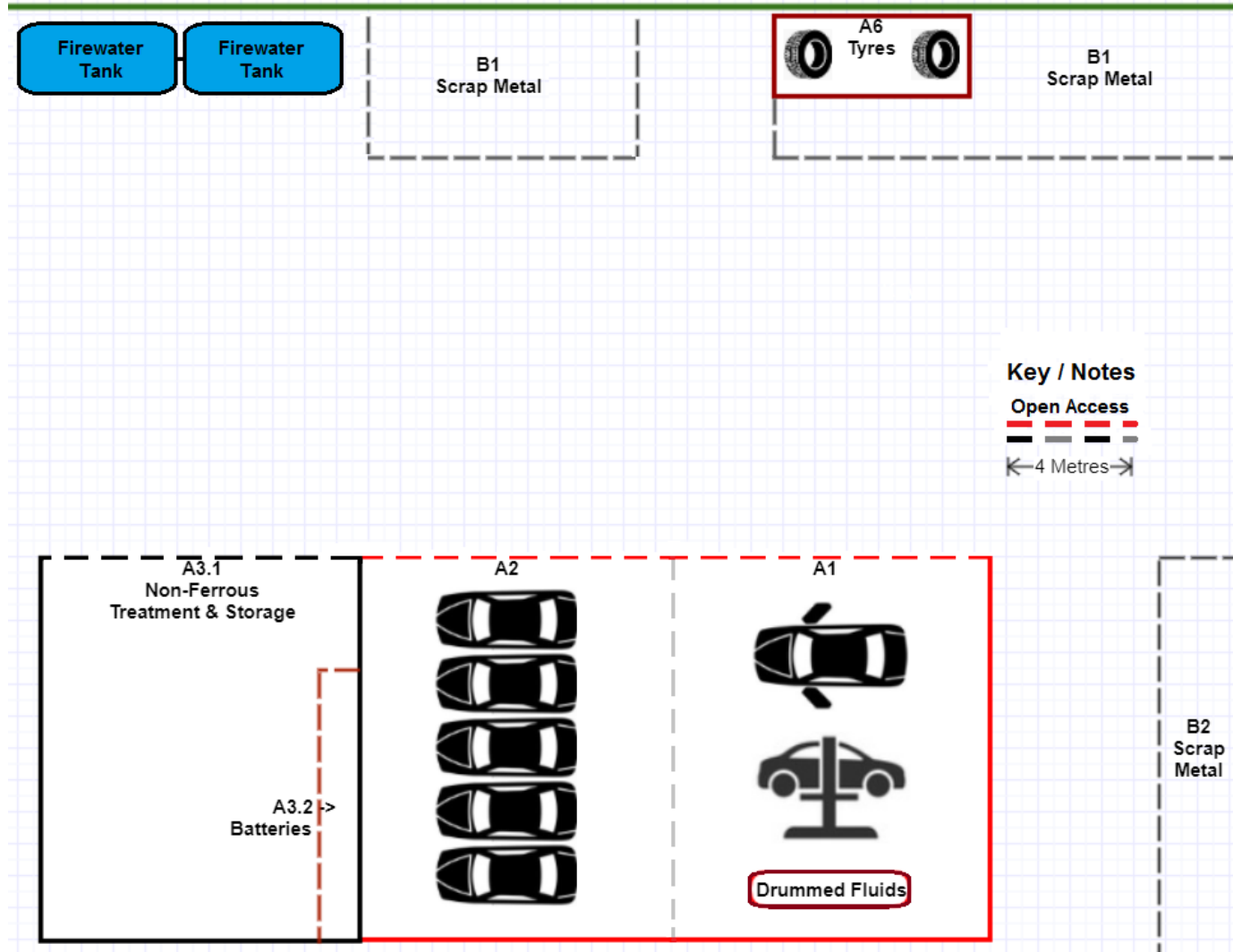
2.4.1 The types of waste, their locations and dimensions of the site waste storage areas & stacks are provided in *FPMP Appendix 1.3 – Site Layout & FRS Emergency Plan & FPMP Appendix 1.4 – Operational Site Layout & Drainage Plan*.

2.4.2 Storage of ELVs and flammable or combustible wastes in the form of stacks on-site are confined to:

- **Tyres** (whole) stored within the confines of a steel fire-proof shipping container measuring less than: H x 2.6m x D x 2.5m x L x 6m.
- **Depolluted ELVs** stored, a maximum of 10 vehicles within Area A2 of the ELV Building are stacked no more than 1 x 2 high x 5, allowing access to and removal of vehicles for fire-fighting, a maximum of 2 vehicles (not stacked) awaiting or undergoing depollution are stored in Area 1.
- A distance of no less than 1m gap between all the buildings walls is maintained for the storage of ELVs, drummed fluids, WEEE and baled depolluted ELVS.

The storage layout and separation distances of the *ELV building* is shown and provided to scale (1m grid lines shown) in *Figure 2.4.2* below:

Figure 2.4 2 Waste Stacks and Separation Distances – North East Section of the Site



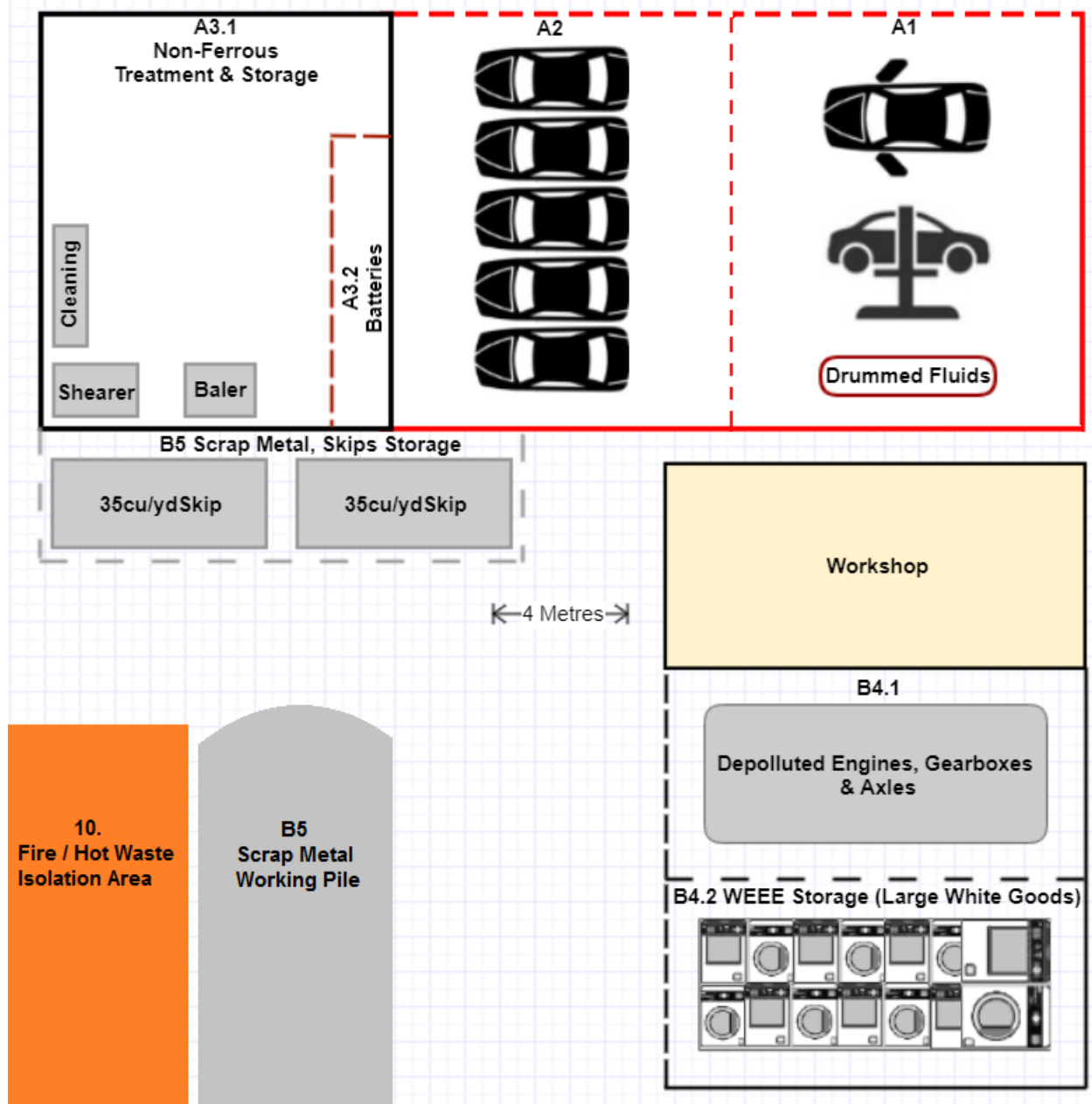
2.5 WEEE Storage

2.5.1 *The types of WEEE* stored on-site pending off-site treatment and recovery are confined to non-hazardous Large Electrical Appliances (Washing Machines and Cookers) also known or commonly referred to as "White Goods. Fridges or other electronic waste containing liquids or hazardous substances are not accepted or stored at the site.

2.5.2 *Storage of WEEE* in the form of stacks measuring no more than 3m high x 4m wide x 10m Long within Area 4.2 of the Workshop Building:

*The storage layout and separation distances of the Workshop building and adjacent areas are shown and provided to scale (1m grid lines shown) in **Figure 2.5.2** below:*

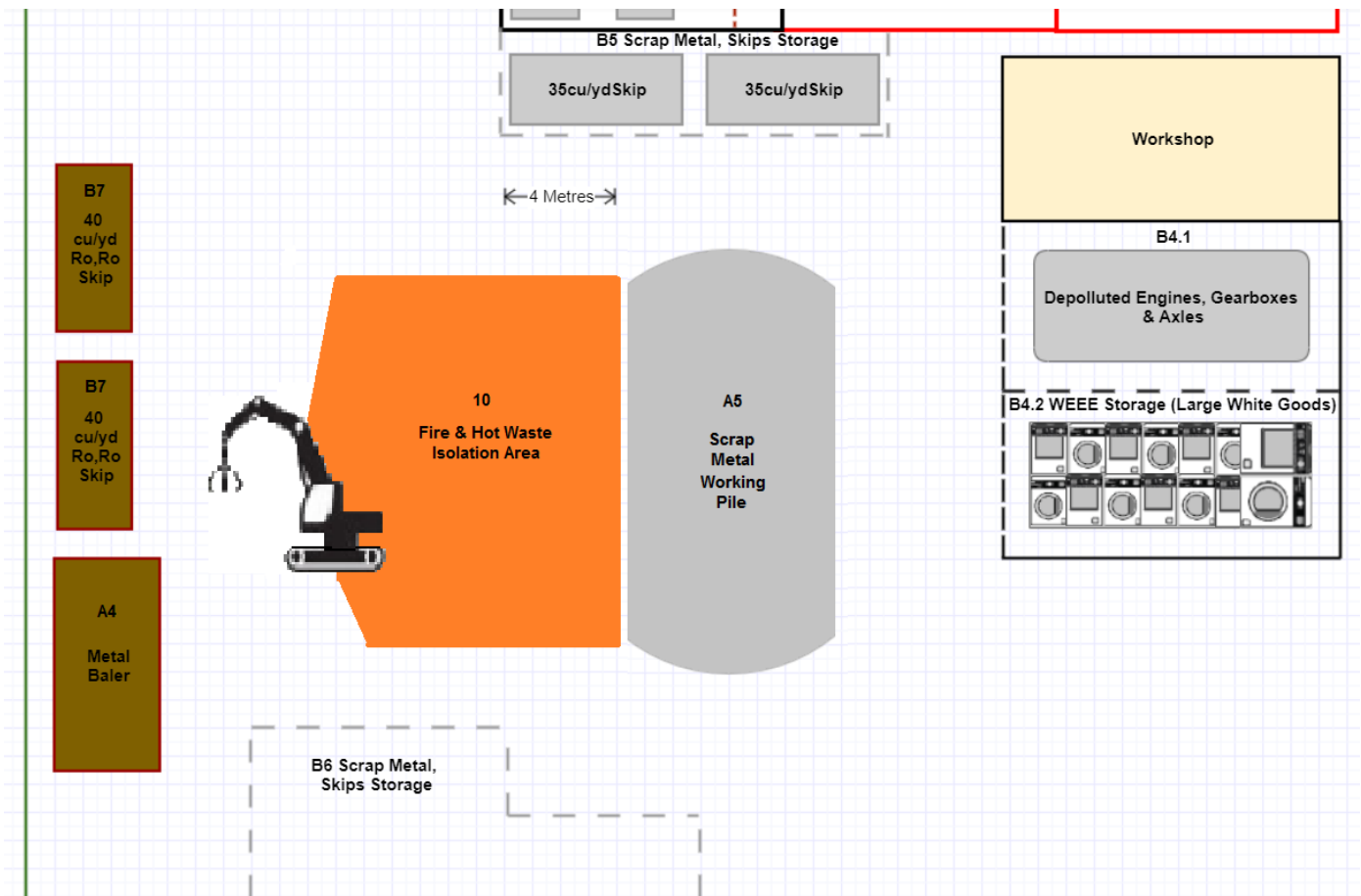
Figure 2.5 2 Waste Stacks and Separation Distances – Central Section of the Site



2.6 Baled Depolluted ELV & Scrap Metal Storage

- 2.6.1 Baled Depolluted ELVs** are transferred from the Baler located in Area A4 to the Roll on / Roll-off skips located in Area B7 for storage no longer than 2 weeks prior to despatch off-site to authorised Metal Processing Recovery Facilities.
- 2.6.2 Baled Ferrous and Non-ferrous Metals** are transferred from the Baler located in Area A4 to Scrap Metals Skips located in Areas B5 & B6 for storage no longer than 6 months.
- 2.6.3** Baler capacity is limited to 1 vehicle per time & bale or approximately 2 tonnes of loose scrap metal per time & bale. Bales of both ELVs and Scrap Metals measure approximately $>1\text{m}^2$ to $<2\text{m}^3$, the maximum capacity of each container or skip used to store the baled metal wastes are approximately 15 tonnes and 30m^3 .
- 2.6.4 The storage layout and separation distances of the Baler and the Skip Storage locations** for the baled metals and adjacent areas are shown and provided to scale (1m grid lines shown) in **Figure 2.5.2** below:

Figure 2.6 4 Baled ELV Waste and Separation Distances – South West Section of the Site



2.7 Types and Amounts of Waste Received Daily

2.7.1 The types and maximum amounts of waste received at the site on a daily basis are provided in Table 2.7.1 below:

Table 2.7.1 Types and Amounts of Waste Received Daily			
Waste Type	Quantity/Day	Treatment / Storage Area	Comments
ELVs	≤ 7.5 Tonnes /.5 Vehicles	ELV Depollution Building Area A1	Depollution & treatment of ELVS is carried out in Area A1. Fluids removed are stored in bunded steel drums in Area A1
		→	Depolluted ELVS are stored in Area A2
		→	Batteries removed from ELVs are stored in battery boxes in Area 3.2
		→	Depolluted Engines, Axles & Gearboxes are stored in the Workshop Building in Area B4.1
WEEE	≤ 5 Tonnes	Workshop Building Area B4.1	Storage only (no treatments) for off-site recycling/recovery
Scrap Ferrous and Non-ferrous Metals	≤ 20 Tonnes Combined Total	ELV Building Area 3.1	Ferrous Metal treatment, ≤ 2 tonnes/day throughput.
		Open Yard Areas B1, B2, B3, B5, B6 & B7	Baling in Area A4 ≤ 20 tonnes/day throughput.

2.7.2 Storage / Treatment areas and quantities are provided previously in **Sections 1.2, 1.3 & 1.4** and **Appendix 1.4 –Operational Site Layout & Drainage Plan**

2.8 Fire Risks, Prevention, Detection and Suppression

There is a no smoking policy and naked flames or fires are not allowed on site, there are no welding or use of oxyacetylene cutting operations carried out on-site either.



2.8.1 **Possible low risk ignition sources** on-site have been identified as:

- **Disk cutting operations for cleaning non-ferrous metals** (which are non or very low spark producing metals) are carried out within the partitioned **Area A 3.1** Non-ferrous Metal Treatment section of the **ELV Depollution Building**.

There are no flammable or combustible materials stored within the immediate vicinity of this area. Depollution operations are carried out separately and not at the same time or during the cutting and cleaning of non-ferrous metals.

- **Moving and baling of ferrous metals** at the southern portion of the site in open yard **areas B3, B5, B6, B7 & A4**.

There are no flammable or combustible materials stored within the immediate vicinity of this area.

2.8.2



Smoke and heat detection fire alarms are fitted to the Eastern (**Area A1**) and Western (**Area A3.1**) sections of the **ELV Depollution Building**.

The site also employs a CCTV visual flame detection system via an on-site monitor in the site office and mobile phone application for on & off-site monitoring too.

2.8.3



Fire extinguishers are positioned in easy visual, signed and readily available locations within the on-site Machine Grab, ELV Depollution and Workshop Buildings and open yard areas of the site as shown in **Figure 1.2 – FPMP Site Layout Plan**.

Fire Extinguishing media consists of **CO₂** (Class A, B & E), **Powder** (Class D) and **Foam** (Class A & B) hand operated cylinders which are suitable for dealing with:

- **Class A fires** involving **organic solids** e.g. **paper and wood**.
- **Class B fires** involving **flammable or combustible liquids**, including **petrol, grease, and oil**.
- **Class D fires** involving combustible **metals**.
- **Class E fires** involving **electrical equipment**.

A Mobile Foam Trolley should also be deployed in the event of a fire occurring on-site, this would most possibly be confined to a small scale petrol and or fuel/oil fire in the Eastern section of the ELV Depollution Building for **Class B fires** to fight the fire and prevent spreading and pollution to other areas, of the site and drains. The location of the mobile foam trolley is kept in **Area 12** as shown in **FPMP Appendix 1.3 –Site Layout & FRS Emergency Plan**.



2.9 Fire-Fighting Strategy



Fire (heat and smoke detection) alarms and visual monitoring provide early warning for detecting a fire on-site, easily accessible and **readily available and appropriate fire extinguishers** are strategically positioned around the site along with a **mobile foam trolley** positioned by the site office is available for use by site staff and operators to prevent and control the fire from the possibility of escalation and spread of fire on the site.

2.9.1



In the event of preventing a small fire escalating on site, or containing and isolating a hot spot fire risk, and only **if it is safe to do so**, the **on-site machine grab** which has an enclosed cab can be used **to remove and isolate any hot items or waste** to an open area of the site identified as the **Hot Waste Isolation Area** (Area 10) as shown in **FPMP Appendix 1.3 –Site Layout & FRS Emergency Plan**.







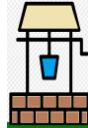
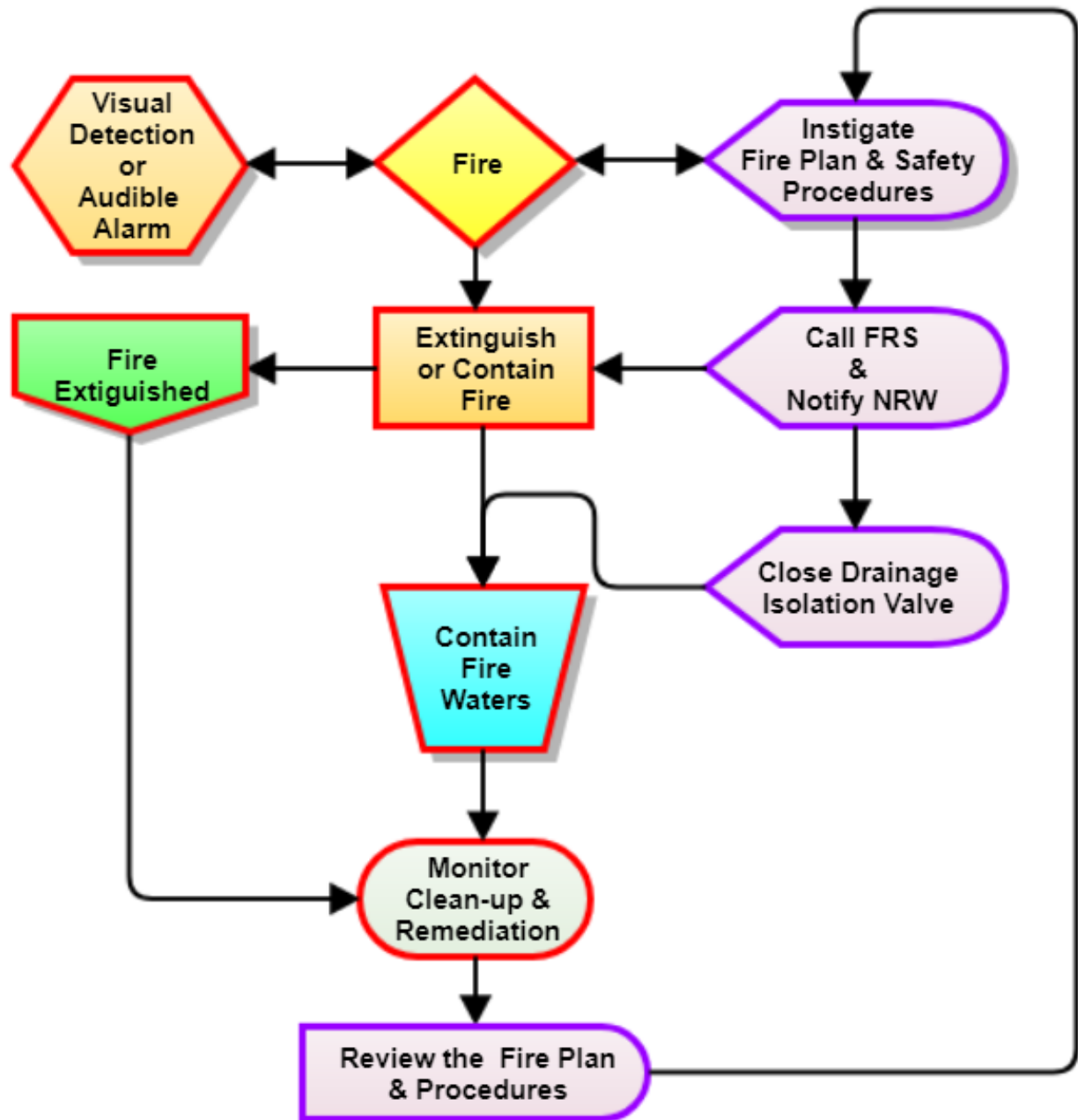
- 2.9.2  Hot items or wastes will be kept away from any combustible or flammable sources within the isolation area where it can be dealt with separately **by dousing and cooling with water with the use of a mobile motorised water pump** which is kept by the site office.
- 2.9.3  ***In the event of a fire where it has escalated and cannot be safely and easily contained or controlled using on-site firefighting methods, then the Fire Rescue Service FRS will be contacted immediately*** by dialling **999** on the telephone to deal with the fire. The site manager or supervisor will arrange to cancel all scheduled deliveries to and collections from the site and ensure that site staff are also safely stationed outside the site to prevent and divert any vehicles entering the site. Local nearby residents can be contacted (using the **FPMP Contact Details**) and informed of the fire situation.
- 2.9.4  The site **Drainage Isolation Valve** which is located on the external wall of the Southern Perimeter of the site should be **switched to the OFF position**, easy **access to the Isolation Valve** is along a path which runs from behind the site office and adjacent residence, along the outside Eastern perimeter of the site to the **Southern perimeter of the site and located on the side of the raised site wall**.
- 2.9.5  **Additional local FRS contact details and information is provided below:**
Mid and West Wales Fire and Rescue Service
Nearest Station is in Crymych, located on the A478 only 7 miles to the North of the site.
Phone: 0370 6060699
Fax: 01267 220562
Fire Safety visit: please call us on 0800 169 1234
Email: mail@mawwfire.gov.uk
Web Site: <http://www.mawwfire.gov.uk/Pages/Welcome.aspx>
- 2.9.6  ***There are no readily available Fire Hydrants within the locality***, the nearest fire hydrant is located in the village of Trelech approximately 2 Km away to the south of the site. ***Additional Emergency Fire Water is provided on-site and off-site.***
- 2.9.7  An **Emergency Fire Water Tank** is located near the site access, on entering the site, it is sited immediately on the right-hand side in between the site gate and site offices, identified **as Area 11** in **FPMP Appendix 1.3 –Site Layout & FRS Emergency Plan**. The tank holds approximately 3,500 litres of water for the FRS to use if additional water is needed for firefighting.
- 2.9.8  There is also **optional use of groundwater for firefighting** by accessing the **Groundwater Monitoring Well** which is located approximately 50 meters South West of the Site Boundary, identified as **Area 2** in **FPMP Appendix 1.2 – Site and Sensitive Nearby Receptors within 100m Plan**.
- 2.9.9 In the event of a small containable or large fire occurring on-site, the **Fire Plan Procedures summarised and provided in Figure 2.3.4** below are to be followed:

Figure 2.9.9 - Fire Plan Procedures



3 Sensitive Receptors, Water Management, Remediation & Review

3.1 Sensitive Receptors

- 3.1.1 The Scrap Yard (The Site) is located in an area of natural and rural countryside, the site is constructed of a bunded concreted surface laid on top of made ground consisting of granular fill to raise levels of the site where the underlying natural **ground slopes** from the adjacent Road located at the Northern perimeter of the site **towards a drainage ditch located approximately 40 metres away to the Southern perimeter of the site.**

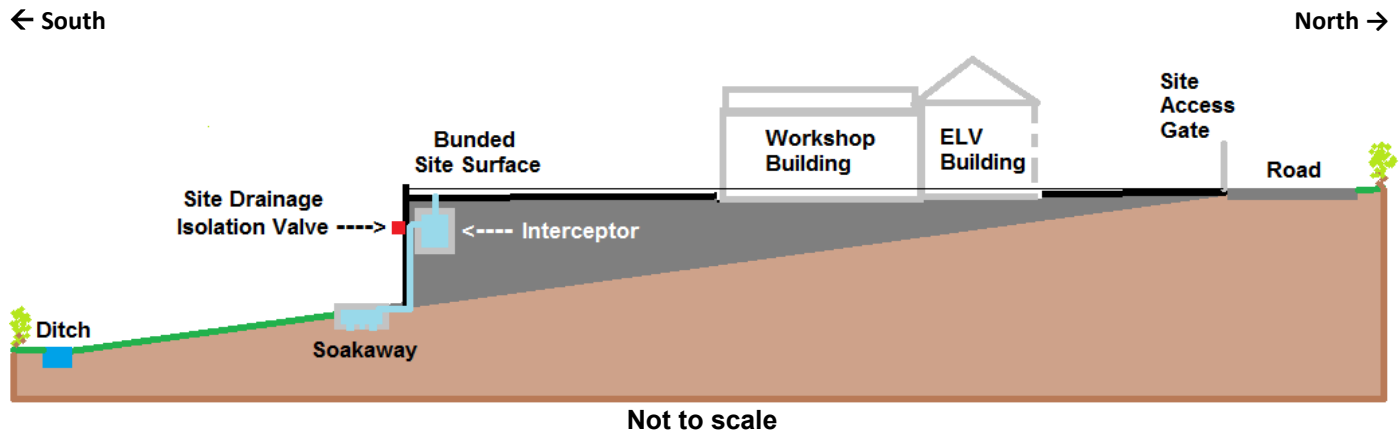


Environmental receptors which may be impacted from site infrastructure **failure to contain polluting firewater water escaping from the site** are:

- **Groundwater** flowing in a South Westerly direction underneath the site and adjacent field, and;
- **Surface water drainage ditch** located approximately 40 meters to the South and West of the site.

A **simplified conceptual site model is provided in figure 2.5.1** below which also details the site drainage infrastructure and containment system for **isolating and preventing fire water escaping the site.**

Figure 3.1 - Simple Conceptual Site Model



- 3.2 The likely hazards and harm in the event of a fire occurring at the site **are emissions of black smoke to air from the combustion of vehicles, fuel, oils and tyres. These emissions, if there is a large and or prolonged fire**, are likely to affect both the **immediate and wider surrounding locality**, the severity of these impacts will also be influenced by weather conditions and wind direction.

Prolonged fire and heat generated within and from the ELV Depollution Building may also **cause pressurisation and explosion of drums and containers** containing combustible and flammable liquids which are also stored within the building.

Wind direction is predominantly from the South West, therefore, **receptors which are most likely to be impacted by aerial emissions** generated from a fire at the site **are those which are situated to the North East of the site.**

Wind Roses showing historical weather data for wind direction for Pembrokeshire Wales, United Kingdom, 51.83°N 5.08°W 77m) and Carmarthenshire (Wales, United Kingdom, 51.86°N 4.31°W 23m) is provided below in **figures 3.2 i, ii, & iii** below:

Figure 3.2 i

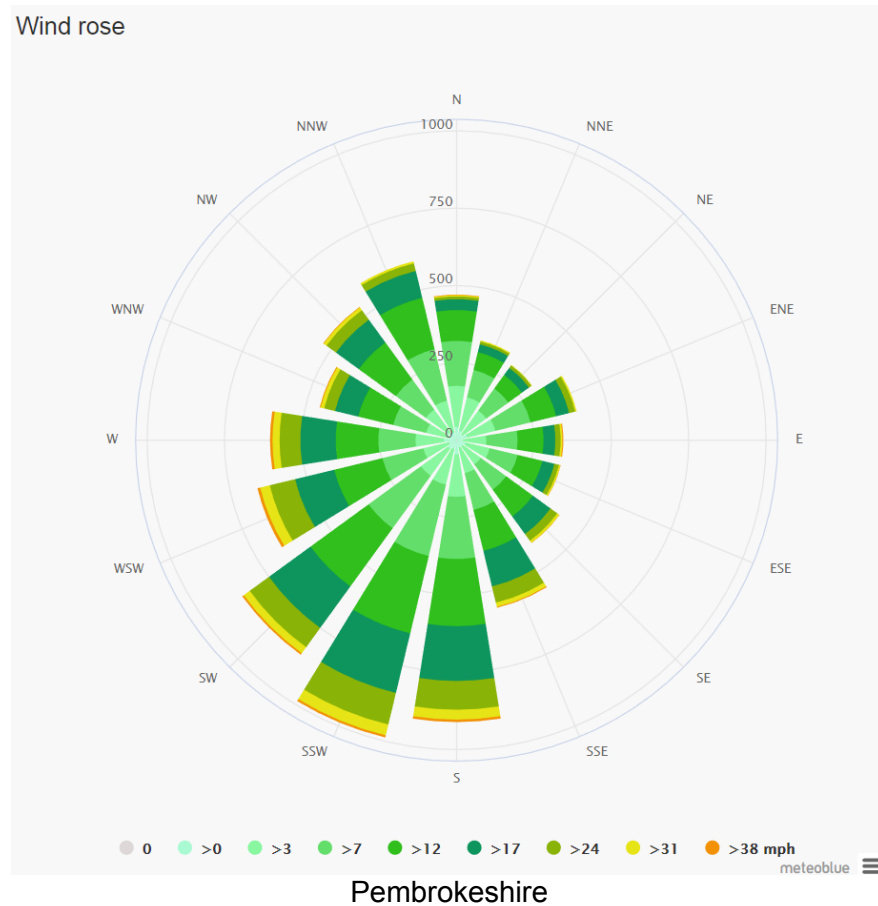


Figure 3.2 ii

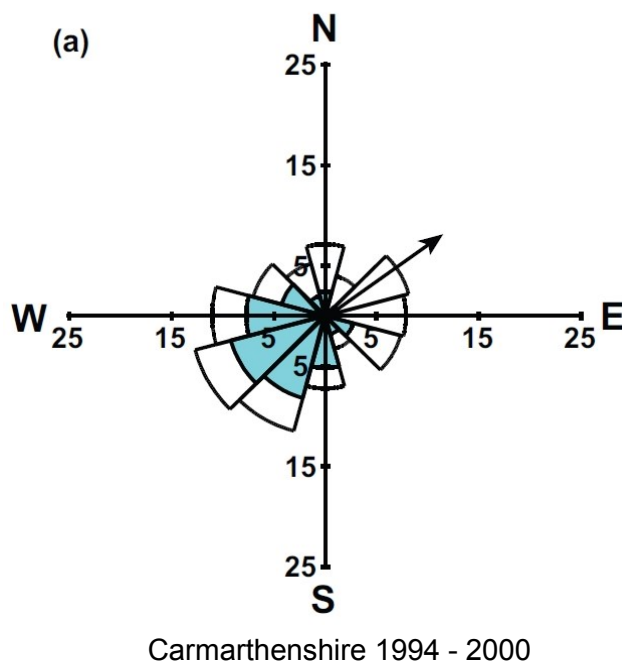
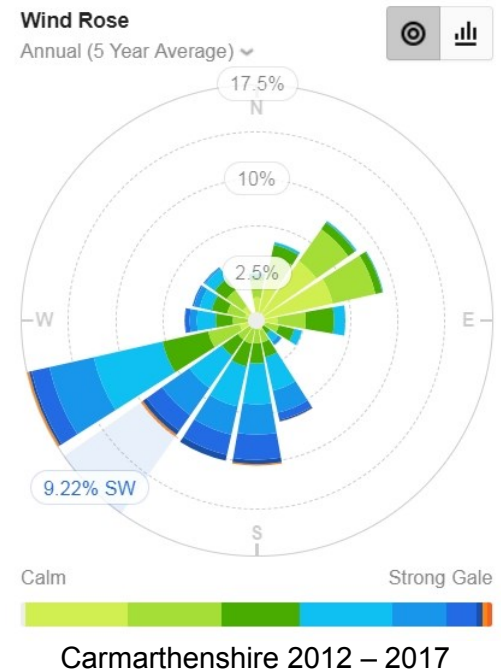


Figure 3.2 iii





Human receptors which may be impacted by emissions from the site are:

- **Employees, customers and visitors** on-site,
- **Site owner, occupier and residents** in adjacent property, Wern Glyd,
- **Pedestrians and commuters** using the adjacent road,
- **Farmers working and tending to livestock** in adjacent and surrounding fields,
- **Public using the bridleway & footpath** approximately 200m South of the site,
- **Local Nearby Residents,**

Properties located at:

Maes Gwyn (500m West of the site),
Fron-glyd (550m North of the site),
Clungwyn (650m North-West of the site), and;
Henffald (700m North of the site)

- **Other Residents in the Locality**, 4 x residential properties, each located approximately 1 Km to the North, East, West and South of the site.

The Distance to Human Receptors *is provided in figure 3.2 iv* below:

Figure 3.2 iv - Distance to Human Receptors



3.2 Water Supplies

3.2.1 Water supplies available on-site for use in fire-fighting have previously been discussed in Section **2.9 Fire-Fighting Strategy**, and consist of the following:

1. *Emergency Fire Water Tanks*

There are 2 newly installed and coupled 15,000 litre firewater tanks located in the Northern section of the site, each tank has a capacity of 15,000 liters, the tanks are situated immediately on the left-hand side on entering the site and are readily accessible for use. The tanks are made of Stainless Steel and are fitted with fire hose couplings at the base and ladders with gantry to manholes on the tops for use for fire hoses and refilling, the combined total of both tanks hold approximately 30,000 litres of water.

2. **Groundwater Monitoring Well**, which is located approximately 50 meters South West of the Site in the lower section of the field adjacent to the hedgerow field boundary, the well can be accessed via the entrance to the farmhouse. Readily available capacity of water is 2,500 litres, the rate of water recharge is good/high, the water from this well is also used on-site for refilling the firewater tanks.

3.2.2 Estimated water needed for Fire-Fighting the largest amounts of “**typical combustible waste**” within the waste stored on-site are calculated in accordance with the Fire Prevention and Mitigation Plan Guidance for **conventional specified typical combustible wastes** (e.g. loose or baled RDF, wood, paper, plastics, rubber, etc.) is provided in **Table 3.2.2** below:

Table 3.2.2 Estimated Water Needed for Fire-Fighting Typical Combustible Waste				
Area	Waste Type(s)	Volume M ³	Comments	Water Needed
ELV Depollution Building - A1 & A2	Fuels & Oils	2.855 M ³ (2,855 lts)	Combined total ≈ 123 M ³ ¹	≈ 820 lts x 180 mins = 147,600 lts
	ELVs	20 M ³ (2 Vehicles)		
	Depolluted ELVs	100 M ³ (10 Vehicles)		
Shipping Container - A6	Tyres	50 M ³		≈ 334 lts x 180 mins = 60,120 lts
Workshop Building - A4.2	WEEE	105 M ³		≈ 700 lts x 180 mins = 126,380 lts
Baler, & 2 x Ro/Ro Containers – A4 & B7	1 x ELV	10 M ³		≈ 67 lts x 180 mins = 12,060 lts
	Baled Depolluted ELVS (2 x 15 tonnes)	30 M ³		≈ 200 lts x 180 mins = 36,000 lts

• **Comments to Table 3.2.2**

Except for tyres stored in exposed or open stacks, we consider the methodology in Section 20 of the Fire Prevention and Mitigation Plan Guidance for combustible waste stacks and water use calculation is not aimed at or appropriate for Scrap Metals or Metal Articles i.e. ELVs (whole or baled) and Large WEEE solely consisting of Cookers and Washing Machines.

We consider the water needed and calculated in Table 3.2.2 for combustible wastes stored in stacks is inappropriate for the waste types and their storage conditions at Jay Metals, Metal Recycling Facility and **propose that Table 3.2.3 below is more appropriate.**

3.2.3 Estimated water needed for Fire-Fighting the largest amounts of “**non-typical combustible waste**” stored on-site are **calculated using the actual amount of combustible waste within the waste articles** in accordance with the Fire Prevention and Mitigation Plan Guidance for conventional combustible wastes is provided in **Table 3.2.3** below:

Table 3.2.3 Estimated Water Needed for Fire-Fighting Untypical Combustible Waste				
Area	Waste Type(s)	Weight Kg ^[Notes]	Comments	Water Needed
ELV Depollution Building - A1 & A2	Fuels & Oils	2,855 Kg	Combined total; 3,755 Kg	≈ 25 lts x 180 mins = 4,500 lts
	ELVs	(2 ELVs) 150 Kg ^[Note 1.]		
	Depolluted ELVs	(10 ELVs) 750 Kg ^[Note 1.]		
Shipping Container - A6	Tyres	5,000Kg ^[Note 2.]	Tyres contained in Fireproof Container	≈ 33.4 lts x 180 mins = 6,012 lts
Workshop Building - A4.2	WEEE	1,000 Kg ^[Note 1.]		≈ 6.7 lts x 180 mins = 1,206 lts
Baler, & 2 x Ro/Ro Containers – A4 & B7	1 x Depolluted ELV	75Kg ^[Note 1.]		≈ 0.5 lts x 180 mins = 90 lts
	Baled Depolluted ELVS (2 x 15 tonnes)	2,250 Kg ^[Note 3.]		≈ 10 lts x 180 mins = 2,714 lts

• **[Notes to table 3.2.3]**

The Fire Prevention and Mitigation Plan Guidance states that “A 300m³ stack of **combustible material** will normally require an average water supply of at least 2,000 litres a minute for a minimum of 3 hours.”, however, this is based on combustible wastes such as loose or baled RDF, wood, paper, plastics, rubber, etc. without any significant voids or spaces within the waste materials, therefore, the following methodology is used to calculate the amounts of waste for the amount of Firewater needed.

1. **ELVs and WEEE** comprising of Cookers & Washing Machines contain significant void spaces and contain **no more than 5% w/w combustible material**, therefore without any other available reference for these waste materials, **the water needed has been calculated using the weight (not volume) of the combustible material only within the wastes stored**, the maximum weight of each ELV vehicle is set at 1.5 tonnes, and the combustible material contained within ELVs and WEEE is assumed to have a density of 1.
2. **Tyres** are stored hole with the majority of the volume taken up as void space, the tyres are **kept within a steel locked fire proof shipping container**, therefore, the risk of combustion or fire occurring is very unlikely.
3. **Baled ELVs** do not contain any significant voids spaces, therefore, reducing the exposure and fire risk of any entrained combustible materials, **these metal bales contain no more than 5% w/w combustible material**, therefore, without any other available reference for these waste materials, the water needed has been calculated using **the weight (not volume) of the combustible material only within the wastes stored**, the maximum weight of each ELV vehicle is set at 1.5 tonnes, and the combustible material contained within ELVs and WEEE is assumed to have a density of 1.

3.2.4 Estimated fire water supply needed for the worst -case likely scenarios using the figures provided in Table 3.2.3:

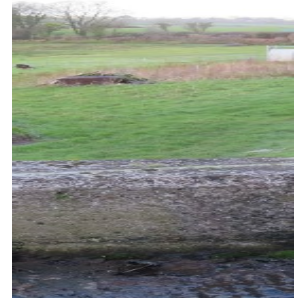
- Most likely scenario: **The ELV Building = 4,500lts** of fine water spray or mist.
- Least likely scenario: **Tyres within the Shipping Container = 6,012lts** water.
- Least likely worst case scenario: **All combustible & potentially combustible wastes = 14,522lts** water.

Total estimated combined volume of fire water needed on-site = 14,522 litres.

3.3 Managing Fire Water Run-off

- 3.3.1 The **site drainage** from the open yard storage areas is **contained on a concreted surface and within a 20cm (8 inch) high concreted bund** which encircles the site perimeter.

There is a **sealed drainage sump** located near the rear South-West corner of the site to capture potentially polluting surface waters **where bailing operations are carried out** and an **oil interceptor** is **located in a more central location at the rear Southern perimeter of the site** to control surface waters leaving the site to a **soak-away to land at the rear (South) of the site**.



Bunded Site Perimeter



**Drainage
Isolation Valve**

To prevent contaminated fire water run-off (including any other polluting spillages entering the system or leaving the site) the pipe drain from the **interceptor is fitted with an isolation valve situated on the outside of the southern section of the site wall which should be switched to the CLOSE position** to isolate the waters within the confines of the site.

Whilst the isolation valve is closed, the site becomes a sealed drainage system where **fire waters can be retained on site**.

- 3.3.2 **Retention of fire waters on-site** is achieved using the existing head space capacities within the interceptor, sealed sumps and bunded site surface.

The site surface slopes gently from North to South at a gradient of approximately 1m ↓ in 25m → and has 20cm (8 inch) high concrete bund wall around the site perimeter, except for the site entrance which has a raised lip and is located safely upstream/gradient (which prevents firewater run-off) at the most Northerly Corner Section of the site.

The capacity to retain fire waters within the site boundary walls when the Isolation Valve is Closed is limited to free head spaces within the site drainage sumps, interceptor, surface gradient, plant, equipment and storage and perimeter wall height.

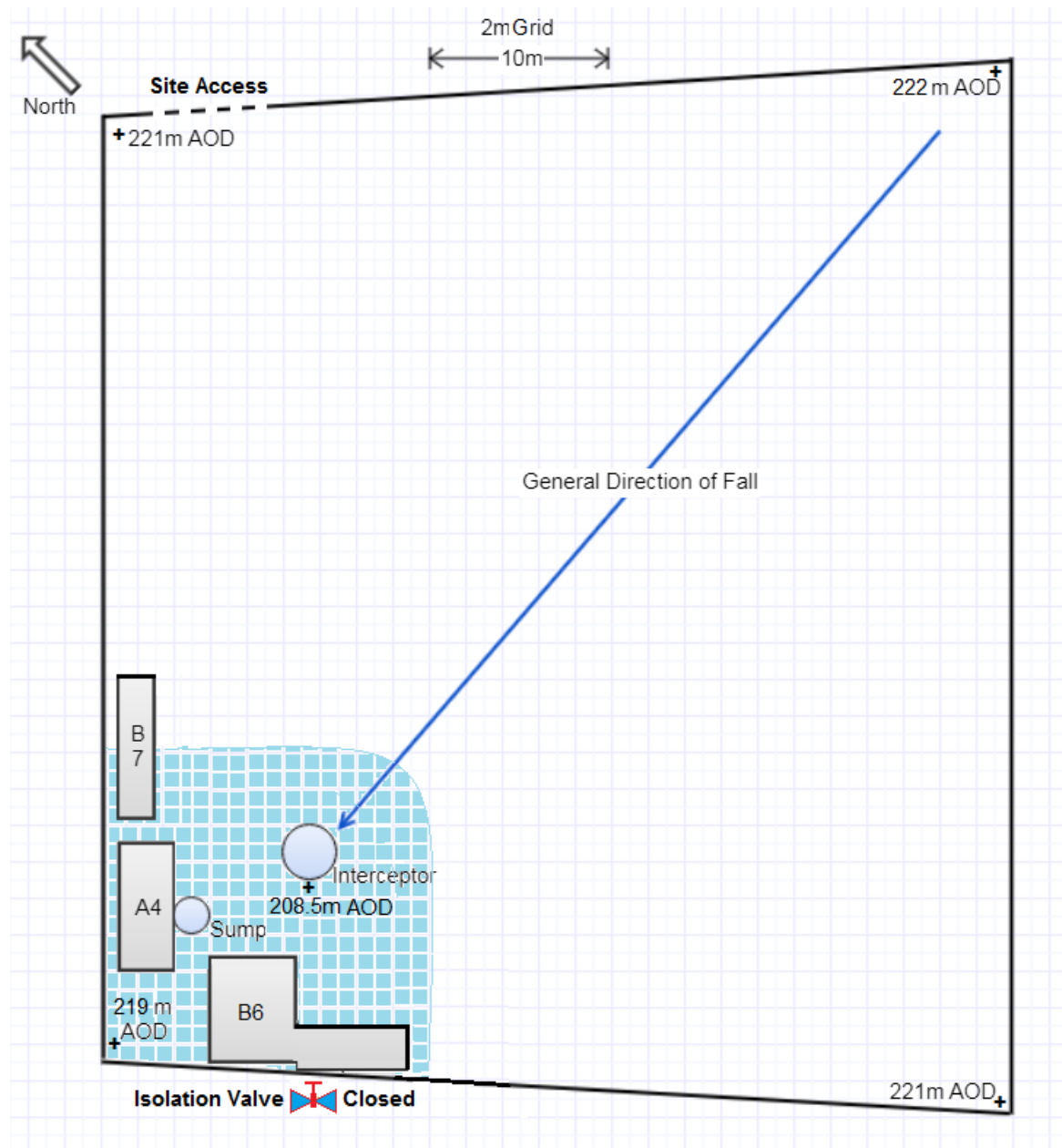
On-site capacities for fire water retention is estimated as follows:

- Minimum volume of **Sealed Sump in the ELV Building**: approximately 1,000 litres
- Minimum head space of **Sealed Sump in the Open Yard**: approximately 1,500 litres
- Minimum head space of **Interceptor (when Isolated) in the Open Yard**: approximately 1,500 litres
- **Bunded perimeter of Isolated site surface** (less the volume of baler A4 and storage area B7): approximately ≥ 14,800 litres

Bunded perimeter site surface firewater retention has been estimated using the site measurements and AOD figures which are Provided in Figure 3.3.2 overleaf showing the **limited affective retention area** at the South Westerly corner of the site

Total estimated combined volume of fire water retention on-site = 18,800 litres.

Figure 3.3.2 Site Fire Water Retention



Typical Fire and Rescue Appliance Capacities can hold the following approximate maximum volumes of water for use in firefighting:

- Large Appliances: approximately 4,000 litres
- Smaller, Incident Response Units: approximately 1,000 litres

Additional fire water is available for on-site fire-fighting and provided for the FRS use:

- Emergency fire water tanks: combined total of approximately 30,000 litres

3.4 Designated Quarantine Area

3.4.1 A designated quarantine area (identified as **10. Hot Waste Isolation Area and shown in FPMP Appendix 1.3 – Site Layout & FRS Emergency Plan**) which is located in the central section of the site and is kept clear at all times, the capacity of this area is approximately 100m².

Area 10. can hold at least 50% of the largest amount of waste on the site, this being 5 x ELVs or 10 tonnes (40m²) whilst also providing a safe separation distance of > 6m from any other combustible wastes stored on-site. A scaled plan is previously provided in section **2.6.4, Figure 2.6 4 Baled ELV Waste and Separation Distances**, this area has an area of approximately is 100m².

3.4.2 The Machine grab positioned within the central section of the Open Yard is used for moving any skips, wastes, small articles on fire or hot wastes into the area for dousing and cooling. Fire affected wastes when safely cooled are dealt with immediately by using the machine grab to load them into steel Ro/Ro containers positioned next to the quarantine isolation area for off-site disposal or recovery.

3.5 During and after an incident

3.5.1 When a fire occurs on-site the following mitigation measures are deployed on-site during the fire:

- All scheduled deliveries, dispatches or customer / contractor visits are cancelled or diverted by contacting and notifying them of the incident using the Contact Details kept within the site office and on the site managers and supervisors' mobile phones.
- Cancelling and diverting any non-scheduled deliveries or unarranged visits to the site by site staff wearing high visibility clothing positioned along the country lane that approaches the site.
- Contacting local contractors and specialists to provide assistance if needed in dealing with additional plant for firefighting techniques, removal of waste material, containment and removal of excess water run-off, these contact details are provided in **FPMP Appendix 2 - Contractors & Contact Details**.
- Contacting nearby local residents using the contact details (see Table 3.5.1 below) and notifying them of the incident

Table 3.5.1 FPMP Nearby Residents Contact Details

Address	Name	Comments	Contact Details
Maes Gwyn	<i>Information kept by Manager, Supervisor & on site</i>	500m West of the site	<i>Information kept by Manager, supervisor & on site</i>
Fron-glyd		550m North of the site	
Clungwyn		650m North-West of the site	
Henffald		700m North of the site	

3.5.2 After a fire has been extinguished, the affected areas and site infrastructure should be visually **inspected by and discussed with a fire officer or qualified/competent person** for possible risks of re-ignition and damage resulting in dangerous and unstable structures, this should be done as soon as possible and when safe to do so, **contact details** are provided in **FPMP Appendix 2.1**.

Any identified remaining fire risk sources or hot spots should be visually assessed and monitored using a temperature probe which is kept on-site, where monitoring suggests that the

fire risk is not decreasing, the source or hot spot should be quenched or smothered and cooled where appropriate and safe to do so, in the open yard quarantine area using the on-site machine grab or other suitable available plant or equipment.

Before the site can resume operations, the following main priority issues should be assessed, documented and rectified as listed (*but not limited to*) below:

- Removal of fire water from interceptors, bunds, drains and site surfaces, by contacting and deploying a local contractor to pump out the waters using a gulley suckers, mobile pumps onto road tankers and mobile sweepers for cleaning the site surfaces where necessary.
- Fire damaged wastes, items and equipment to be removed and disposed of by using the existing on-site machine grab, plant & equipment, or by contacting and deploying a local contractor to supply the plant & equipment and carry out the works and removals.
- Remediation of damage or pollution to site infrastructure, plant, which may have affected areas beyond the site boundary.
- Remediation of damage or pollution to areas beyond the site boundary.
- Clearance and removal of fire damaged wastes and items.
- Damage to pollution control systems e.g. drainage, containment, bunding & surfacing etc.
- Damage to site safety systems i.e. fire smoke detection alarms, CCTV & security.
- extinguishing media and emergency fire water.
- Damage to buildings, plant and equipment

A list of available local waste disposal, site investigation, repair & remediation contractors are contained within **FPMP Appendix 2 - Contractors & Contact Details**.

3.5.3 After the waste clearance, remedial works, repairs or replacement of plant, equipment, safety and pollution control equipment & has been undertaken and a review of the site operational capacity, status and management systems has been carried out by the manager in consultation with the operators' independent consultants and advisers, Natural Resources Wales will also be informed and consulted with the findings and conclusions for agreement before site operations can recommence.

3.6 Reviewing and Monitoring the Fire Prevention & Mitigation Plan

3.6.1 **Fire Prevention and Mitigation Plan (FPMP)** is a living working document which should be continually reviewed on a regular basis, periodic reviews should be taken bi-annually (Summer & Winter) to reflect seasonal weather changes and any effects to business and site operations.

Other circumstances that would require a review of the FPMP include:

- A Fire incident
- Additional Combustible Wastes Accepted.
- Increase in Waste Volumes Accepted or Changes to Storage & Treatment Areas.

- New Development or Changes to Buildings & Infrastructure.
- Changes to Plant and Equipment.

Areas that could need to be monitored and updated include:

Staff training:

- Ensuring the site FPMP is readily available and that all staff know where it is kept.
- Training site staff to enable them to competently carry out the procedures and measures contained within the FPMP.
- New Starters receive Induction Training.
- Regular refresher courses, toolbox talks, on-site exercises/drills.
- Ensure training need is monitored and training records kept.

Site Monitoring:

- Site inspections before, during and after shifts to ensure:
 - No identifiable ignition sources.
 - All equipment is operating/turned off correctly.
- Waste stacks and separation distances are in accordance with the FPMP.
- Monitor and record residence times of wastes on site.
- Plant and equipment are adequately serviced and maintained by qualified personnel. Daily, weekly, monthly checks undertaken and records kept.
- ❖ Periodic testing of fire prevention and mitigation equipment is carried out during on-site exercises' and drills.

3.7 Contact Details and useful References & Links

3.7.1 Contact Details

- ❖ **Natural Resources Wales**
Cambria House
29 Newport Road,
Cardiff
CF24 0TP
Tel: 0300 065 3000
Email: enquiries@cyfoethnaturiolcymru.gov.uk
www.cyfoethnaturiolcymru.gov.uk
- ❖ **South Wales Fire & Rescue Service**
Forest View Business Park
Llantrisant
CF72 8LX
Tel: 01443 232000
E-mail: firesafety@southwales-fire.gov.uk
www.southwales-fire.gov.uk
- ❖ **Mid & West Wales Fire & Rescue Service**
Fire Service Headquarters
Lime Grove Avenue,
Carmarthen
SA31 1SP

❖ **Health & Safety Executive (Wales)**

Tel: 0300 003 1747
www.hse.gov.uk/welsh
Public Health Wales
Tel: 029 2022 7744
www.publichealthwales.wales.nhs.uk

❖ Public Health Wales
Tel: 029 2022 7744
www.publichealthwales.wales.nhs.uk

3.7.2 Useful References & Links

❖ Fire Prevention & Mitigation Plan - <https://naturalresources.wales/media/682159/eng-guidance-note-16-fire-prevention-mitigation-plan.pdf>

❖ Removal of LPG Tanks – Guidance - <https://www.gov.uk/government/publications/removal-of-lpg-tanks-guidance>

❖ End of life vehicles (ELVs): guidance for waste sites - <https://www.gov.uk/guidance/end-of-life-vehicles-elvs-guidance-for-waste-sites>

❖ Depolluting end-of-life vehicles: guidance for treatment facilities - <https://www.gov.uk/government/publications/depolluting-end-of-life-vehicles-guidance-for-treatment-facilities>

❖ Applying for a permit - <https://naturalresources.wales/apply-for-a-permit/?lang=en>

❖ WISH - <https://wishforum.org.uk/>

❖ Regulatory Reform (Fire Safety) Order 2005
http://www.legislation.gov.uk/uksi/2005/1541/pdfs/uksi_20051541_en.pdf

❖ Fire Safety Risk Assessment - Factories and Warehouses. - <https://www.gov.uk/government/publications/fire-safety-risk-assessment-factories-and-warehouses>

❖ Health and Safety Executive (HSE) Fire Safety Guidance - <https://www.hse.gov.uk/toolbox/fire.htm>