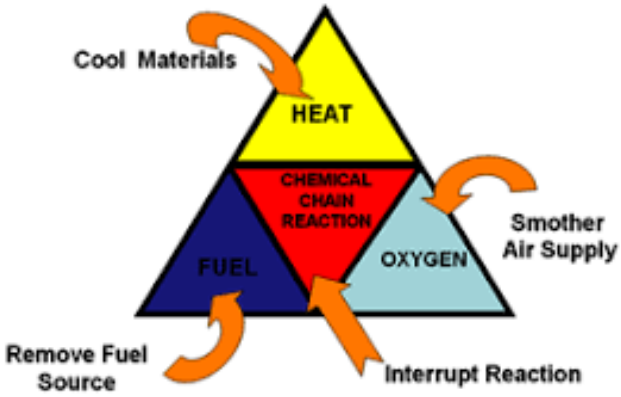
M AND R COMMERCIALS
FIRE PREVENTION AND MITIGATION PLAN
(FPMP)



Operator: M and R Commercials
Facility: END OF LIFE VEHICLE AUTHORISED TREATMENT FACILITY, FFORESTFACH

Permit reference: GP3193MV

Version	Date	Compiled by	Checked / App'd	Revision
Draft	February 2019	Geotechnology	M and R	1

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1 INTRODUCTION

This document is intended to detail the overall approach adopted by M and R Commercials Ltd. (MR) to mitigate the risk of fire during day-to-day operation of the site and to provide a single source of reference during a fire emergency.

EMERGENCY GRAB PACK: Plans of the site showing its location and key infrastructure are provided in Figures 1 to 4. Section 3 includes a summary of key site details and waste types potentially present. This information will be available in a separate grab pack in an emergency box on the external wall of the yard.

1.1 Background

There have been many waste fires in Wales over recent years. This has led to increased scrutiny and new guidance from NRW titled *Fire Prevention and mitigation Plan Guidance - Waste Management* (Guidance Note 16). During and following a fire, waste companies are required to pay the cost of clean-up. These costs can be very high as any remaining burnt waste will need to be removed and disposed of, potentially as hazardous waste. There is also reputational damage, potential criminal charges and increased insurance premiums.

As MR is a waste operator, the waste regulator Natural Resources Wales (NRW), requires MR to have a Fire prevention and Mitigation Plan (FPMP) in place which is subject to regular update and review.

This FPMP details the methods MR will use to initially prevent and control fire of combustible materials at their end of life vehicle authorised treatment facility (ELV ATF) at Fforestfach, Swansea. The site is focussed on the depollution of primarily diesel-fuelled commercial and 4 x 4 ELVs. The site benefits from impermeable concrete surfacing and sealed drainage to sewer via a full retention interceptor.

This FPMP should be considered a working document subject to internal and external review. Copies of this document should be stored electronically and in hard copy on and off-site. A hard copy will be stored in a grab-pack located in an Emergency Services Box attached to the external site wall. This box will be secured with a combination padlock that will be locked using a code provided to the FRS and NRW. All personnel and contractors should be familiar with this document and its location. Fire prevention measures will be included in Induction Training.

Plans of the site showing its location and key infrastructure are provided in Figures 1 to 4. Section 3 includes a summary of key site details and waste types potentially present.

MR will aim to ensure that fire prevention is a day to day activity that is delivered through good housekeeping and simple but effective control measures.

This plan will be reviewed and updated as necessary, at least annually, and following a fire.

1.2 Scope of FPMP

Guidance Note 16 (GN16) sets out the information to be included in a FPMP. This requirement is summarised in Table 1-1.

Table 1-1 Minimum requirements of FPMP

Aspect	Section of report
Type of waste accepted	3.2
Amount of waste received daily	3.2
Form of waste accepted	3.2
Waste storage arrangement	Figure 2, Table 3-2, Section 3
Waste storage time	Table 3-2
How waste is managed	Section 3 and Figure 2
Plan of waste storage areas	Figure 2
Size of waste piles (max dimensions)	Figure 2, Table 3-2
Fire breaks between and around waste	Table 3-2, Figure 2
Fire prevention techniques used	Section 4
Techniques for minimising fire spread	Sections 4, 6 and 7
Actions in response to fire	Section 7
Management of potential fire impact	Section 8
Contact details for key receptors	Table 1-3
Maintaining safe access	Figure 2, 7.6

Guidance Note 16 was prepared in response to a series of burn tests carried out by WISH (Waste Industry Safety and Health Forum). These tests aimed at replicating, as closely as practical, 'real life' waste fires. The tests were conducted on a variety of wastes including cardboard, plastic, RDF and SRF, tyre crumb, wood, paper and card, loose frag fluff (plastics, foams etc. from dismantling ELV) and shredded tyre. Based on the results of these burn tests, guidance on maximum stack sizes and fire break/separation distances were developed and set out in a code of practice titled *Reducing Fire Risk at Waste Management Sites*. This code of practice primarily applies to sites storing more than 50m^3 of waste, which is the approximate size of a full double garage. MR will store more than this quantity.

As the MR site is an ELV ATF some of the specific results of the tests may not be directly applicable to the main waste types accepted and handled at the MR facility. This is particularly true when it comes to considering the maximum stockpile sizes and separation distances for stockpiles of predominantly metal waste, although these do pose particular fire risks, along with other site activities, which require careful management. The objectives and principles of the guidance are adopted in this FPMP.

1.3 Key Site Information

Key site details are summarised in Table 1-2 and relevant emergency contacts in Table 1-3.

Plans of the site, layout of the operation, location of receptors and site infrastructure are provided in Figures 1 to 4.

1.4 Communication of Plan

All staff will be trained on the relevant sections of this FPMP during their induction training and this training will be refreshed annually or after any amendment to the FPMP whichever occurs soonest. Training will be recorded in each individual employees training records.

All contractors will be trained in the key elements of the FPMP. This will be recorded in the Site Induction Training file.

All training on the FPMP will focus on the actions necessary to:

1. Prevent a fire occurring; and
2. Responding to a fire if one breaks out to protect life and the environment

Table 1-2 Summary of Key Site Details

Aspect	Detail	Further information
Depollution Building structure	Roof: metal sheets and skylights Walls: Block and metal sheet Floor: Impermeable concrete with sealed drainage	
Depollution infrastructure	3 indoor ramps Proprietary Autodrain depollution kit used to drain fluids	
Permitted maximum storage of waste	5000 tonnes / year throughput 50 tonnes hazardous waste 25 tonnes intact waste vehicle tyres	
Drainage	Sealed drainage to sewer via full retention interceptor	
Water supply	Mains alkythene	
Security	Site surrounded by 2m high perimeter fencing and site fitted with 24hr CCTV	
Occupants	Typically, 10 staff and up to 1 visitor at any one time	
Fire risk assessment	COPY AWAITED. TO BE PROVIDED. FPMP MAY REQUIRE UPDATE UPON RECEIPT.	
Flammable liquids and gases	Separate IBCs for diesel, petrol, engine oil, hydraulic oil, antifreeze, screenwash Gas cylinders for hot works	See Figure 2
Waste in containers	Batteries Loose tyres in 40' shipping containers	
Baled waste	Depolluted ELVs	
Plant/Machinery at site	Typically: • 3 materials handlers (1 grab, 1 magnet, 1 grapple / snips) • Telehandler or lifting vehicles • 9 tonne forklift • 3 tonne forklift • 500 tonne baler	
Fire Hydrant Locations	Directly west of site entrance (to the right as viewed from road) at E262378 N195492	See Figure 2

Table 1-3 Emergency contact details

SITE DETAILS			
Location: M and R Commercials, Units P & W, off St Davids Road, Nant y Felin, Swansea West Industrial Park, Fforestfach, Swansea			
Postcode: SA5 4HG			
Site Access Grid Reference: E262384 N195493			
SITE CONTACTS	Name	Office Hours (specify)	Out of hours
Owner:	Mal Wiberg	07976 607093	07976 607093
Site Supervisor:	Mark Wiberg	07976 607095	07976 607095
Landowner/Agent:	M and R have 1000 year lease. Welsh Government are land owners.		
EMERGENCY SERVICES		Office Hours	Out of hours
Emergency		999	999
Police:		999 / (101 non-emergency)	999 / 101
Fire:		999 (Swansea commend: 0870 6060 699)	999
Welsh Water		0800 052 0130	0800 052 0130
Electricity (Western Power)		0800 052 0400	0800 052 0400
Gas leak		0800111 999	0800111 999
Network Rail		03457 11 41 41	03457 11 41 41
REGULATORS		Office Hours	Out of hours
Health and Safety Executive (HSE)		0345 300 9923	0151 922 9235
Local Authority:		01792 636595	01792 636595
Natural Resources Wales (Local)		01792 326450	0300 065 3000
NRW (24 hour emergency hotline)		0300 065 3000	
UTILITY/KEY SERVICES	Name	Office Hours	Out of hours
Water undertaker:	Welsh Water	0800 052 0145	
Sewerage undertaker:	Welsh Water	0800 052 0145	
Gas, electricity and telephone supplier:	Kinex	105	105
Gas infrastructure	National Grid (gas)	**0800 111 999**	**0800 111 999**
Red diesel supplier	Estuary Oils, Cardiff	Andrew: 07887 777 752 David: 07976 091 307 Dean: 07449 635 635 Ashley: 07966 588 165	Same
Oil spill contractor:	Pure Clean Environmental, Avonmouth	01173 167818	01173 167818
Vacuum tank emptying:	Siddell Environmental	01554 778 486	01554 778 486
OTHER KEY CONTACTS	Name	Office Hours	Out of hours
Neighbours to site:	Brenntag	Mansel Mathias: 07990 550446 Chris Dodd: 07939 282378	Mobiles and 01865 407333
	AJT Recycling Ltd Contact	Andrew Thomas: 07973 958570 Jonathan Davies: 07711948 933	Same
	Swan Scaffolding	David Morgan: 07850 489038	Same
Fire risk assessment and supply of fire extinguishers	Scott Fire Protection Services	01446 761071	
Waste advisors:	Geotechnology Contact Ben Rees	07970 890195	07970 890195

2 SITE SETTING OVERVIEW

Figure 4 is an annotated aerial image of the site and its immediate surroundings. This highlights some of the key features of the surrounding area.

2.1 Site Location and Access

The site is located on the southern edge of a commercial and light industrial estate at Fforestfach, Swansea. The site is accessed along Nant y Felin road off Corporation Road which joins Kingsway, one of the main estate access routes off the A483 approximately 500m east.

Directly to the south of the site is an active railway line.

Directly to the west is Brenntag Ltd, a chemicals storage, dilution and packaging facilities.

Directly to the east is AJT Recycling Ltd, an ELV and scrap metal facility.

Directly to the northeast is Swan Scaffolding, a scaffold company.

2.2 Geology

The underlying bedrock geology forms part of the South Wales Coalfield. In this area, the rock predominantly comprises mudstone, siltstone and sandstone. These rocks are overlain by superficial deposits, often clays and gravels, placed during times of glaciation up to 2 million years ago.

2.3 Groundwater

Groundwater in the underlying bedrock forms an important part of the base flow system to local streams but is not an aquifer protected for abstraction by Source Protection Zones.

2.4 Surface Water

A large culvert passes beneath the central part of the site. This conveys surface water from upstream, beneath the site and the adjacent estate developments, to a discharge that ultimately drains to the Afon Lian which then passes into the Loughor Estuary.

M and R indicate that there is flow in the culvert all year.

2.5 Flooding

NRW identify that the site is at risk of flooding. This is related to surface water over-topping the culvert that passes below the site.

2.6 Meteorology

Wind direction is predominantly dominated by southwesterly and westerly weather systems. Rainfall totals approximately 1000mm per annum.

2.7 Protected Sites

There are no protected sites within the immediate vicinity.

2.8 Human Receptors

The densely populated residential area of Fforestfach lies ~500m east with a small group of residential properties on Cwmbach Road #500m west. In closer proximity there are many other businesses and food outlets serving the estate.

There are no schools or hospitals within 500m of the site.

3 OVERVIEW OF OPERATION

The M and R Commercials facility depollutes and dismantled ELVs (End of Life Vehicles) alongside vehicles sales. The bulk of the operation is dominated by commercial vehicles and 4 x 4s. Most vehicles are diesel fuelled. The site is set out and operated on a day-to-day basis with fire prevention always in mind.

The operation benefits from an impermeable concrete yard with sealed drainage where the waste is received, accepted, inspected, stored and depolluted/dismantled. M and R recognises that some parts of the concrete and drainage infrastructure require repair and these works are ongoing. This includes the installation of a new full retention interceptor. M and R also re-organising and clearing parts of the site. The site layout described here is one that M and R will have in place by the summer of 2019.

3.1 Site Infrastructure

The level part of the site occupies ~0.8ha and in the centre is a steel portal frame building with roller shutters. The side of the building facing the site entrance is used for visitor reception, provides office space and welfare and canteen facilities. The rear of the building is used for vehicle depollution and contains 3 vehicle ramps. A mezzanine floor above the office space is used for parts storage.

Surrounding the buildings is an impermeable concrete yard that drains to a full retention interceptor and then sewer. Improvements works are ongoing and ultimately the site will be provided with two interceptors in series.

3.1.1 Environmental protection

The discharge to the sewer can be isolated using a control valve. This is intended to be closed during a large fire to prevent discharge to sewer.

3.2 Waste Acceptance

The typical wastes accepted are summarised in Table 3-1. On a typical day, 3 or 4 ELVs would be delivered. These would typically either be diesel powered commercial vehicles, vans or 4 x 4s. Full vehicle (not baled) cars (either ELV or for sale) may also be accepted.

Table 3-1 List of Wastes Typically Accepted

Waste code	Type of waste
16 01 03*	Polluted End of Life Vehicle
16 01 04	End of Life Vehicle

All waste carrying vehicles entering the facility via the site main entrance are directed to the Reception/Unloading area. The driver is required to attend at the site office where all waste transfer notes are inspected by the Site Supervisor or Manager and the information is recorded. The Site Manager (or Senior Manager on-site) then carries out visual checks on the waste to confirm that it is described adequately, conforms to any pre-acceptance checks and that the waste is permitted for acceptance at the site.

A full schedule of permitted wastes is clearly displayed at the office for ease of reference by the designated member of staff who is trained and proficient in the role undertaken. In addition, further support, if needed, is provided by the Technically Competent Person. In the event of any delay in the examination of the waste consignment documentation or doubt in respect of the consignment, the vehicle is directed to a holding area until the proficient person is satisfied that the documents are in order and the waste conforms with the terms of site permit.

Providing the paperwork is in order, vehicles are directed to the reception area, unloaded and inspected again. This area is underlain by an impermeable concrete surface and sealed drainage. Following inspection, either:

- Wastes are acceptable, the company takes responsibility for the duty of care of the waste, and the driver is issued with a conveyance note confirming receipt of the waste; or
- If the site manager finds any irregularities with the waste after deposit then the waste will be either re-loaded back into the vehicle and rejected from the site or will be quarantined within a secure quarantine area pending further enquiries and agreement with or instructions received from Natural Resources Wales (as required). The Best Practicable Environmental Option for recovery/disposal of the non- conforming material will be used. Arrangements for the offsite transfer/disposal of non-conforming wastes will be made as soon as arrangements can be finalised taking due account of their potential to cause environmental impact/nuisance e.g. odour etc.

All waste movements will conform with the requirements of the Environmental Permitting Regulations.

Batteries left connected in polluted ELVs can short circuit and cause fires. Batteries will therefore be disconnected/removed from polluted ELVs before being placed into storage. Batteries will be stored inside covered battery boxes inside the ELV workshop.

3.3 ELV Depollution

Polluted ELVs will be temporarily stacked and removed systematically so that the cars that have been stored the longest are depolluted first. The one exception to this is if there is a vehicle leaking fluids as this will be depolluted as a priority. At any one time there is normally less than 30 ELVs awaiting depollution.

In order to depollute an ELV, a number of operations have to be conducted. The key depollution processes involving the recovery of fuels and oils are undertaken using air drills (to avoid sparking and sources of ignition) with the fluids recovered using a proprietary purpose built system called an Autodrain.

Vehicle depollution occurs in dedicated buildings fitted with 3 ramps and impermeable concrete floors that ultimately drain to the site interceptor.

Once fully depolluted, the ELVs are placed onto hardstanding prior to off-site recovery/sale. Some ELVS are dismantled to recycle useful components. This may involve hot works in a dedicated hot works zone.

Once vehicles are depolluted, and dismantled where appropriate, they may be baled using the on-site baler. ELVs that have been baled are stored on impermeable concrete that drains to the site interceptor.

3.4 ELV Dismantling

Following depollution, some of the ELVs will also be dismantled to enable the salvage and onward sale of useful parts. The focus of this part of the business will be on the salvage of metal car parts (axles, doors, body panels, etc.) and engines. These will be removed from the relevant vehicles using a combination of mechanical tools and hot works. The metal parts separated from the ELVs are either placed on wall mounted racks to prevent their damage on a mezzanine floor above the office or stored externally. Depolluted engines are stored in an external area where they are surrounded by a low wall to protect them from damage. Any drainage from this area passes over impermeable concrete to drains connected to the site interceptor.

3.5 Hot Works

Due to the inherent fire risks associated with hot works, a dedicated screened area will be provided, as shown on Figure 2. In this area, hot works would be undertaken by trained and experience personnel. The working area would be behind a concrete wall and separated from other waste storage areas. The area will also be provided with dedicated IBC water deluge bombs and fire extinguishers for use in a fire or when the risk of fire is anticipated.

Hot works are conducted on vehicles which have passed through the depollution process. The aim of the work is primarily to separate the engine and axle from the relevant vehicle. The remaining body and chassis is then available for baling but first placed back into the depolluted ELV storage area as non-hazardous waste.

A requirement of the site insurance is that all hot works cease at 16:30 and then a fire watch implemented until end of shift at around 17:30.

3.6 Shearing and Baling

Depolluted ELVs requiring shearing and baling are processed in a dedicated area, as shown on Figure 2. Prior to this process, the vehicle will be depolluted. All of this activity is undertaken on impermeable surface with sealed drainage.

Once baled, the bales are stored adjacent to the baler ready for collection and off-site recovery. Up to 100 bales are typically in storage for less than 2 months.

3.7 Site Layout

Dedicated waste storage areas are outlined on Figure 2. Firefighting will be possible from all sides.

An area of the site will always be available to be used for quarantine as required. This is shown on Figure 2.

The site will be operated to ensure unobstructed access at all times for the FRS

3.8 Solid Waste in Storage

A snapshot of the different waste types typically in storage is provided in Table 3-2.

Table 3-2 Typical Waste Storage Arrangements

Waste type	Amount typically in storage	Typical time in storage	Storage arrangement	Typical stack size at MR	Applicable GN16 guidance
Unpolluted ELV	30 no.	<3 months	Stacked outdoors on impermeable surface with sealed drainage.	Up to 2 vehicles high Rows up to 2 vehicles deep. 1m gap between blocks of 4 vehicles. Each block 7m x 5m & 3m high (105m^3)	Max. 6 months storage Max. 2 vehicles deep & 3 vehicles high
Depolluted ELV	120 no.	<8 weeks	Stacked outdoors on hardstanding		
Individual batteries	<5 tonnes	Collected monthly	Segregated indoors in battery storage container		
Loose tyres	272m^3	<2 months	Stored loose in 4 forty foot shipping containers.	No external stacks. Each container can hold 68m^3	6 months storage
Containerised liquids e.g. fuels/ oils from depollution	<1000 litres	<1 month	In dedicated IBCs external to depollution bay in lean-to	2 IBC for diesel 2 IBC for oil 1 IBC for antifreeze	
Engines	200	<1 month	Outdoors on impermeable concrete with sealed drainage. Each engine stored separately (not stacked) to prevent damage prior to sale	300m^2 (no stacking) with air gap between each engine	
Baled ELV	100 no.	<1month	Outdoors on impermeable concrete with sealed drainage. Stacked 4 high in rows of 5	Each bale 2.4 x 1 x 1m (2.4m3) Stacked 4 high and in groups of 5 (12m^3). 9m gap between stacks along longest edge.	
Baled tyres	Not currently stored				
Catalytic converts	50	<2 months	Secure cage in office	No stacks. In metal cage	
Body parts from dismantling	100	< 1 year	On dedicated racking on mezzanine floor above offices	No stacks. Parts on racks for sale	

In addition to the waste in storage, vehicles for sale are also stored at the site (see Figure 2). There would typically be 40 – 50 vehicles for sale at any one time.

3.9 Liquids and Gases in storage

During depollution a range of liquids are recovered. These are ultimately stored in separate dedicated IBCs under cover outside of the depollution bay.

3.9.1 Petrol

Very few of the vehicles depolluted are petrol engine as most commercial and 4 x 4 vehicles are diesel powered. MR estimate that only 1 in ever 50 vehicles for depollution is petrol.

If a petrol vehicle is accepted for depollution all petrol is captured in the dedicated petrol Autodrain depollution tank. Once this is close to capacity the petrol is transferred to a dedicated IBC in the fuel and oil storage area. As petrol is a dangerous substance that can give off vapour which can easily be set on fire and when not handled safely has the potential to cause a serious fire and/or explosion ignition sources are kept away from the depollution area and fuel storage area. In these areas, smoking, naked flames and hot surfaces are not

permitted. Also not permitted is the use of other equipment that that may cause sparks if rubbed or knocked against metal, concrete or brick.

Flammable vapours are released whenever petrol is handled, extracted from vehicles, transferred between tanks, drums, cans and other vessels and whenever it is spilt or left open to the air. Petrol vapour will form above the liquid in vessels containing petrol and will persist for a long time, even where there are no visible signs of any liquid. Petrol vapour is heavier than air and does not disperse easily in still air conditions. Escaping vapours will tend to sink to the lowest level of the surroundings and can readily accumulate in inspection pits, and poorly ventilated areas. This is why MR do not use below ground vehicle inspection pits and the depollution bay is always open to outdoor air.

The very small quantities of petrol recovered from petrol ELVs will typically be used in site machinery and stored in the dedicated Autodrain depollution kit. The quantities of petrol in storage are typically small (<30 litres)and the vast majority of vehicles passing through the site are diesel.

3.9.2 Diesel Fuel

Red diesel for use by on-site plant is delivered to site when requested. In all cases refuelling will be overseen by a Site Operative and a spillage procedure initiated if any spillages occur. The red diesel is stored in a 4000 litre bunded tank in a location where it cannot easily be hit by movements of site plant. The area drains on impermeable concrete to the site interceptor.

Diesel from the ELVs is captured through the use of the Autodrain equipment and then transferred to dedicated IBCs. These can hold up to 1000 litres and 2 are typically in place.

The outdoor storage area dedicated to the IBCs will be 2m from the nearest building, boundary, process areas, other storage areas and fixed ignition sources. In the storage area the following rules will be applied:

- Containers will only be stored at ground level (singularly or in stable stacks) in a bunded area
- Bund will have a volume of at least 110% of the maximum capacity
- Rainwater ingress will be prevented
- No activities in the vicinity will be carried out that increase the risk of incident, including filling and/or emptying containers
- Storage area will be kept clean and not used for other wastes

3.9.3 Engine Oil

Small quantities of oils for use in plant is stored in small drums (<20 litres) in the depollution bay. These are stored indoors on impermeable concrete connected to full retention interceptor.

Oil recovered during depollution is captured in the Autodrain depollution kit before being transferred to a dedicated IBC in the external oil storage are. Some may be used in site plant. There will typically be 2 IBCs in the dedicated storage area.

3.9.4 Gas cylinders

Gas cylinders are required for hot works. Typically, there would be two packs of oxygen cylinders on site. Each pack would contain 15 cylinders of oxygen. There would also be 3 loose cylinders of oxygen for mobile (off-site) work. The following bottles are therefore typically on site:

- 2 packs of oxygen (30 bottles). Each pack containing 15 cylinders of oxygen. Each pack on a manifold cylinder pallet (MCP)
- 3 loose bottles of oxygen
- 2 bottles of 'cougar' gas for Mig welding – this typically comprises 93% Argon, 5% Carbon Dioxide and 2% Oxygen comprises
- 6 calor gas bottles containing propane

This is 41 bottles in total.

All bottles are typically size WW. These are approximately 1.7m tall. The MCP have top eyelets for lifting and can be moved by forklift.

Gas cylinders not in use are stored in an external cage. See Figure 2.

Due to actual or perceived difficulties in returning cylinders, it is common that gas cylinders may be hidden in end-of life vehicles (ELVs). These cylinders can present considerable explosion risks if scrap vehicles are processed, at some point, in crushers or fragmentisers. For this reason, MR will pay particular attention to the inspection of ELVs during waste receipt. If such loads are discovered they will be immediately returned to a customer, if known, or the waste rejected. Orphaned cylinders will be placed into safe storage cages located in the area shown on Figure 2. This location is away from the main working area and site traffic.

Rules that will apply to the storage of cylinders:

- Keep the number of stored cylinders as low as possible, ensuring that the storage cage safe capacity is not exceeded. Regular disposal will be undertaken
- Store cylinders of similar content together for easier collection
- Store cylinders upright with seals and protection caps in place, where provided
- Safeguard damaged and narrow-based cylinders against the risk of falling by fitting securing chains in the enclosure
- Other materials should not be stored with gases, especially if flammable or corrosive e.g. oils, fuel and batteries

Cylinders will also be safely handled as followed:

- Always ensure that the valve is closed and no gas is escaping
- Never lift a cylinder by its valve equipment or valve guard – always use the cylinder handling ring, if provided
- When moving cylinders any distance, use a suitable cylinder trolley
- Never lift a cylinder with a magnet or chain sling. If ropes or lifting straps are used, only lift one cylinder at a time
- Never roll cylinders along the ground as this damages identification marks and valves Never subject cylinders to impact

3.9.5 Catalytic converts

Due to their economic value, these are stored in a metal cage within the main office space.

3.9.6 Brake fluid

Small quantities of brake fluid recovered during depollution are stored in the sealed Autodrain units which are stored inside the ELV depollution building. Once these units approach capacity the fluid is transferred to a dedicated IBC in the external oil storage are.

3.9.7 Coolant

Small quantities of coolant fluid recovered during depollution are stored in the sealed Autodrain units which are stored inside the ELV depollution building. Once these units approach capacity the fluid is transferred to a dedicated IBC in the external oil storage are. The fluid may also be used in the operation of on-site plant which typically limits the volume in storage.

3.9.8 Power steering oil

Small quantities of power steering oil recovered during depollution are stored in the sealed Autodrain unit which are stored inside the ELV depollution building. Once these units approach capacity the fluid is transferred to a dedicated IBC in the external oil storage are. The fluid may also be used in the operation of on-site plant which typically limits the volume in storage.

3.9.9 Screenwash fluids

Small quantities of screenwash recovered during depollution are stored in the sealed Autodrain unit which are stored inside the ELV depollution building. Once these units approach capacity the fluid is transferred to a dedicated IBC in the external oil storage are. The fluid may also be used in the operation of on-site plant which typically limits the volume in storage.

3.10 Baled Waste

Depolluted ELVs are sheared and baled using a Lefort 600. Despite each vehicle having passed through the depollution process there is always a small fraction of residual liquid squeezed from the ELV during baling. For this reason the baler is located on impermeable concrete that drains to the sewer via a full retention interceptor.

The baler and shear is capable of producing bales measuring 2.3 x 1m x 1m and can shear, crush and bale full cars, 4 x 4s and commercial vehicles.

There is a tyre baler on site but this not currently used. If this is used, thus FPMP will be updated.

3.11 Enclosed stacks

There are currently no plans to enclose stacks at the site. All stacks of waste will be readily accessible from all sides and no fire walls are currently needed to separate different wastes.

If fire walls are used in the future this FPMP will be updated.

3.12 Waste in Containers

3.12.1 Batteries

Batteries will be stored upright indoors in clearly labelled, acid-resistant, leak-proof containers. Different types of battery will not be stored together e.g. lead acid batteries with lithium-ion batteries.

3.12.2 Tyres

Whole tyres removed during the ELV depollution process are placed into dedicated 40' shipping containers.

3.12.3 Vehicle Parts

Vehicle parts and sometimes depolluted whole ELVs or vehicles for sale are stored inside sheeted trailers along the eastern boundary of the site. This provides protection of the parts from the elements ahead of off-site sale. A 1m gap is maintained between each trailer and a 4m every fifth trailer.

3.13 Storage Layout

One of the most effective ways to reduce the risk of a fire spreading is by providing suitable stack sizing and separation distances. Guidance on this aspect is provided in GN16. Taking this into consideration, the site layout outlined in Figure 2 is planned to be implemented. If this configuration is found to be inefficient/does not meet operational requirements then the plan would be updated. The plan would also be updated if consultation with NRW / FRS indicated a more suitable arrangement would be appropriate.

3.14 Seasonal Variations

Historically, the winter period has been the 'quiet' time of the year. However, during the last 3 years this has not been the case and the operation has not been distinctly seasonal.

Should there be a change in demand for ELV depollution, there is sufficient capacity at the site to accept additional vehicles (as shown by the vacant areas in Figure 2 and reference to the GN16 guidance in last column of Table 3-2). This would essentially involve taking the ELV stacks up to 3 vehicles, rather than 1 or 2 vehicles, as planned.

There are no waste supply contracts in place so in the case of any interruptions to site operations, waste acceptance can be ceased until further notice.

3.15 Self-Combustion and Stock Management

According to GN16, materials that are at risk of self-combustion if stored for more than **3 months** are:

- tyres (whole or processed)

- smaller size or graded materials either stored or mixed
- material that has not had potential hazards removed before stacking e.g. exposed rust (which can generate heat)
- treated materials which are not cold before storage (treatment processes can generate heat)

Rapid turnover of waste and careful ELV depollution is aimed at preventing fires. This limits the build-up of any heat being potentially produced from chemical oxidation. All waste will be stored for less than 3 months and typically less than 2 months.

To further help prevent self-combustion the following actions will also be taken:

- hot works confined to hot works working area
- Site will not accept 'fines'
- Daily inspections for obvious signs of heat / fire. Steam is a good indicator of self-heating
- Maintaining good housekeeping and stack sizes
- Storing material in its largest form i.e. minimise storage time of smaller pieces. This allows any heat generated by potential oxidation reactions (such as rust) to have more opportunity to escape

Given the large sized nature of the ELV wastes and outdoor storage, natural moisture levels will be allowed to develop. Stockpile under-drainage will be provided to a sealed system. Given the nature and free-draining properties of the stockpiled metallic wastes further moisture control is not considered to be necessary. As moisture levels can be important in promoting potential chemical oxidation reactions, this aspect will be reviewed. To avoid self-combustion MR will ensure a high turnover of stock and storage time will typically be less than 3 months

Stock management will be based on the 'first-in-first-out' principle to avoid metal wastes being in storage longer than planned.

3.16 Waste Rotation

Waste rotation is not normally required for the storage of ELVs, particularly if storage is short.

As many metals have high thermal conductivity potential there will be times during the year when exposed metal surfaces will become potentially hot when exposed to direct sunlight. Like chemical oxidation, this can potentially lead to hot spots and ultimately fires developing. During particularly hot and dry periods, the site manager will inspect the exposed surface of metals. If significant quantities of metal are found to be excessively hot to touch the stock may be rotated. The FRS and NRW may also be consulted and consideration given to the use of water as a temporary coolant.

3.17 Quarantine

In the case of a fire outbreak or identification of hot materials, the waste will be moved into the central quarantine area wherever safe to do so to isolate it during an incident. The location of the quarantine area is shown on Figure 2, although in an emergency any vacant part of the site will be used. The fire quarantine area will always be on concrete with sealed drainage.

The fixed quarantine area shown on Figure 2 provides an area of ~300m2 which could accommodate over 50 ELVs if they were temporarily stacked 3 vehicles high or over 60 ELV bales. In an emergency other areas of the yard could also be used for quarantine.

3.18 Utilities

All utilities enter the site on the northern side of the building at ground level. Electric, gas and water are all in close proximity (see Figure 2).

3.18.1 Gas

Due to the site's previous use the gas main entering the site is a 6'' pipe.

The gas pipe is located on the northeastern side of the building and comprises a 6'' inlet. This is thought to have been previously used by the previous site occupiers during the production of biodiesel. MR has a combi boiler to heat the office space connected to the gas supply. This is located in the same room as the gas pipe.

3.18.2 Electricity

The main electrical switchboard is located in the eastern side of the building.

3.18.3 Water

Mains water enters the site building on the northeastern side, alongside the electric and gas.

3.19 Contingency

The success of the operation requires rapid processing and turnover of the wastes to be treated and overseas sales. If such turnover cannot be achieved, MR has off-site recovery and disposal contracts with other waste management companies that will be used to ensure the site does not stockpile either unprocessed or processed waste. Closing the site at short notice should not cause significant disruption to the local waste recycling network as the site has relatively small capacity.

4 FIRE PREVENTION

MR has had a fire risk assessment undertaken. This will be appended in Appendix 1 when issued and this FPMP update if required.

4.1 Potential Causes of Fire

Fires may be caused by many factors. Potential causes are identified Table 4-1. Understanding the causes enables effective preventative steps to be identified and implemented.

In Table 4-1, the likelihood associated with each event is ranked as either low, medium or high. The ranking takes into consideration the preventative control measures MR will take during day-to-day operation to limit the possibility of fire occurring.

In addition to the actions identified in the following sections, MR will also ensure that:

- All potential ignition sources are kept at least 6m away from combustible and flammable waste
- Combustible wastes are stored in the dedicated storage areas
- All personnel are aware of the risks of fires developing and are encouraged to actively identify and report fire risks or sources
- Inspections of all wastes and machinery will be made at the start, middle and end of each shift to check for heat or smoke
- All site personnel are trained in fire prevention and fire management
- Emergency procedures are in place
- An independent audit of fire risks is undertaken

Table 4-1 Potential causes of fires and control measures to be adopted

Potential Cause of Fire	Likelihood of Risk	Control Measures
Arson or Vandalism	Medium Risk	Secure site boundary Site to be fitted with motion sensitive 24/7 CCTV Routine inspection programme to ensure no breaches of site boundary Daily/Weekly Inspection programme to ensure no breaches of security measures
Visitors and Contractors	Low risk	Ensure all visitors and contractors are signed-in and familiar with site rules Brief all visitors with key health and safety information including fire prevention procedures Ensure relevant contractors provide Method Statements that include fire prevention
Ignition Sources	Medium risk	Open burning not permitted anywhere on the site Smoking not permitted Furnaces, incinerators, heating pipes and naked flames not permitted/ not used on site. Hot metal not generated during depollution/dismantling Air tools and drills with earth leads used during depollution All potential ignition sources (see other causes of fire) will be kept at least 6m away from combustible waste
Self-combustion	Low Risk	Metal waste will be stored in large sizes and only cut down to smaller pieces close to the time of off-site transport (if needed) to reduce storage time of smaller pieces Tyres will be stored for less than 3 months All waste stored separately for less than 3 months Robust waste acceptance procedures will ensure that waste does not represent any increased self-ignition risk Daily visual check of all waste stockpiles to identify smoke/steam
Plant or Equipment Failure	Low risk	All plant and equipment to be serviced and maintained as per manufacturers' requirements Preventative maintenance programme to be implemented Daily plant and machinery inspections carried out by trained plant operatives. All defects reported by end of the working day All plant to be parked 6 metres from combustible waste where possible
Discarded Smoking Materials	Low risk	No smoking policy on site (see site rules) Smoking only permitted in dedicated areas Cigarette disposal bins provided in smoking area
Hot Works e.g. cutting and welding	Medium risk	Hot works to be primarily undertaken in dedicated zone If hot works are necessary they must be carried out (>6m) away from waste storage areas Firefighting equipment will be available at all times during hot works – this will include IBC water bombs and fire extinguishers Following all hot work, a fire watch will be maintained in relevant areas until end of shift to ensure there is no residual ignition source or smouldering fire
Industrial Heaters	Medium risk	Industrial heaters sometimes used in depollution bay as a space heater Heater located away from fuels Heater regularly maintained
Poor Housekeeping	Low risk	Daily inspections of working area to identify need for cleaning Daily dry / wire brushing of any loose combustible waste, dust and fluff in all areas Immediate clean-up of leaks and spills with spill kits
Hot Exhausts	Low risk	Tyres will be kept away from the working area All other wastes in working area will be visually checked throughout operations for signs of heating Upward pointing exhausts used where possible
Damaged/ exposed electrical cables	Low risk	All relevant electrical items will be regularly PAT tested Mobile power tools and power supplies will only be used for temporary maintenance tasks Firefighting equipment will be available on site at all times (including 50 powder and foam extinguishers)
Hot loads deposited at site	Low risk	No hot loads are accepted at the site under normal conditions Any hot loads would be rejected or placed into quarantine and NRW informed
Build-up of loose combustible waste, dust and fluff	Low risk	ELV depollution does not generate significant quantities of dust and fluff Oily rags stored in drum in depollution bay Plant fitted with air filters to limit particles and dust being drawn into exhaust system All plant provided with powder FE
Tramp metal in machinery/plant	No risk	ELV depollution does not lead to generation of material that could get caught in machinery
Batteries in waste	Medium risk	Disconnect/remove all batteries from ELVs as soon as possible after reception to prevent short-circuiting
Leaks and spillages of oils and fuels	Low risk	ELV depollution utilises purpose built Autodrain for depollution of fuels, oils and other liquids Prevent leaks by using appropriate containers Prevent leaks by not over-filling appropriate containers Prevent spillages by using funnels etc. to fill appropriate containers Prevent spillages by using drip trays Ensure materials used to absorb combustible liquids are correctly stored before disposal as hazardous waste

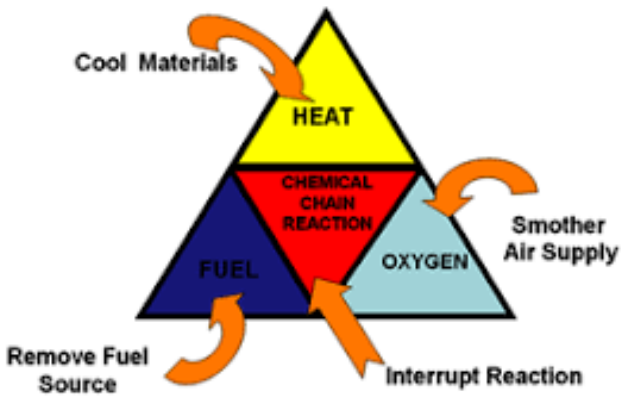
Potential Cause of Fire	Likelihood of Risk	Control Measures
Poor Waste Acceptance Inspections/ Problematic waste stowed away	Medium risk	All waste inspected at reception. Inspection aimed at identifying prohibited waste stowed away including lithium batteries and cylinders Quarantine area to be maintained for problematic loads
Open Burning	Low risk	No burning of wastes is allowed anywhere on the site (see site rules)
Sparks from Loading Buckets	Low risk	Due to nature of materials, rubber protection strips are not fitted as they would become easily damaged. Dragging/pushing of buckets along concrete floor is however kept to a minimum by use of material handlers fitted with grab / magnet Dry (wire) brushing to be used to maintain site cleanliness in waste storage area i.e. sweeping metal All operatives to look out for sparking and to inform management immediately Air tools and drill with earth lead used to limit sparks and electrostatic
Neighbouring Site Activities	Medium risk	Be aware of activities at adjacent yards Establish good communications between all parties and understand processes /risks
Reactions between wastes	Low risk	Understand risk of lithium batteries entering site during pre-waste acceptance checks – this is because damaged lithium batteries can cause fires Inspect waste deliveries for gas cylinders Ensure rapid turnover of all wastes to minimise potential build-up of heat due to chemical oxidation Maintain quarantine area for problematic wastes
Incorrect cylinder storage	Low risk	Ensure cylinders are carefully handled and stored in dedicated cage Specialist contractor to be used to collect cylinders for off-site recovery / disposal
Ignition of fuel vapour	Low risk	Depollution of fuels occurs via proprietary closed system (Autodrain). Suction minimises vapour loss Drip trays regularly emptied to reduce vapour accumulation Depollution occurs at ground level so vapours can't accumulate in an inspection pit Depollution bay is ventilated to outdoor air Fuels retained in sealed vessels and transferred to dedicated IBCs Autodrain equipment and IBCs continuing fuel and oils not kept near potential ignition sources

4.2 Fire Prevention Measures

Fire requires 3 components:

1. Fuel e.g. wood, plastic, cardboard
2. Source of ignition e.g. hot exhaust, spark from metal bucket, chemical reaction
3. Oxygen supply

These 3 components are known as the fire triangle with fuel, heat and oxygen being the 3 corners of the triangle.



If one of the parts of the fire triangle is missing a fire cannot start. On this basis, MR will implement a range of preventative measures to avoid the three parts coming together as this will reduce the opportunity for fire.

Based on the assessment of potential causes of fire, particular focus will be given to:

- Protecting the site from arson – remove ignition source
- Separating ignition sources from combustibles – separating ignition from fuel
- Undertaking hot works away from combustibles - separating ignition from fuel
- Careful use of space heaters - separating ignition from fuel
- Disconnecting batteries in ELVs – isolating ignition source
- Implementing effective waste acceptance checks - identifying uncontrolled ignition / fuel sources
- Understanding risks posed to and by neighbour sites – designing site to minimise fire spread

Specific fire prevention control measures that will be implemented day-to-day to reduce the possibility of fire occurring are outlined in the last column of Table 4-1 with the main measures being:

- Batteries disconnected or removed from ELVs once accepted on site.
- Batteries stored in proprietary battery box inside, out of the elements
- All waste on site for less than 3 months
- Dedicated area for hot works used by trained and experienced personnel
- Provision of IBC water deluge bombs and fire extinguishers in hot works area
- Provision of over 50 fire extinguishers in all work areas and plant
- Training of site operatives in use of fire extinguishers
- Fire watch after completion of all hot works
- Stop all hot works an hour before site close to enable fire watch
- Separate dedicated waste storage areas (see Figure 2)
- Permanent 20,000 litre water curtain along boundary with Brenntag
- Brenntag re-arranged their yard to store non-flammable chemicals and empty containers at least 1m away from shared boundary
- 3.7m stand-off with site perimeter
- Ample quarantine capacity in different parts of site
- Use of dedicated proprietary vehicle depollution system to capture fuels and oils
- Use of separate and dedicated IBCs for the storage of different fuels and oils. These are stored in a dedicated external areas protected from the environment.
- No smoking allowed on site

5 FIRE DETECTION

MR will aim to implement procedures that provide a means of detecting a fire in its early stages. This should reduce the overall impact of a potential fire.

5.1 Fire Detection Systems – During Operations

Visual inspection of the external and internal parts of the site will be undertaken daily. This is considered proportionate to the type of wastes in storage.

The aim of these inspections will be to identify obvious evidence of fire or potential fire. Steam is a good indicator.

Any risks will be recorded on the daily inspection sheet and remedial action identified and implemented. At the end of each shift, all site areas will be inspected aimed at identifying potential hotspots. The inspection will aim to identify such areas by odour, the presence of steam, heat and smoke.

A fire and burglar alarm system is fitted in the office but not the ELV depollution bays.

5.2 Fire Detection Systems – outside of operating hours

MR appreciates that visual inspection is not as potentially reliable as an automated system. This is why the installation of motion sensitive thermal CCTV cameras is currently being reviewed.

The alarm in the office is connected to an off-site monitoring company who would contact the site operator if fire / burglary occurred out of hours.

5.3 Hot spot and Fire Monitoring

Given the nature of the ELV waste materials the use of a probe to identify deep seated core heat is not considered practicable – the probe could not penetrate effectively and could break. The types of wastes prone to self-heating (such as frag wastes / steel can wastes) are not permitted and all wastes will be stored for less than 3 months.

6 FIRE SUPPRESSION AND FIGHTING

MR know from experience that personnel, site facilities and proximity to the FRS are capable of quickly fighting a fire on site. This section details the available resources which influence the fire-fighting approach.

6.1 Trained Personnel and Heavy Plant

If a small fire were to occur, and it is safe to do so, MR will make available all relevantly trained personnel and heavy plant resources, as required. Additional finances will also be made available for additional resources and site clean-up.

The 3 grab handles will be the principle pieces of heavy plant that will be provided to help manage burning/hot waste. This plant would be used by trained personnel to separate potentially hot/burning wastes during the early stages of a fire incident and work, as directed by FRS, during a major incident.

Training of on-site personnel in firefighting techniques, fire prevention, response and the fire protection aspects of the site will be provided by established professionals on an annual basis. Personnel will be familiar with the use and limitations of firefighting equipment available onsite. Records of this training will be included in the operating record for the facility.

6.2 Fire Extinguishers

The facility is equipped with 50 fire extinguishers (powder and foam). Each fire extinguisher will be fully charged and ready for use at all times.

- 30 fire extinguishers are located in the depollution bay and offices. Extinguishers are wall mounted on each upright in the depollution bay and are stored in close proximity to working areas an the site entrance
- 20 fire extinguishers are stored outside the building in plant and in the hot works area

Each extinguisher will be inspected annually by a qualified service company.

All personnel are trained in the relevant use of each fire extinguisher.

6.3 Environmental Protection Measures

If necessary, site drainage can be isolated from discharging to sewer. This can be achieved by:

- Closing the valve on interceptor as this prevents outflow to the sewer

This would be implemented in the event of a large fire.

Welsh Water has been requested to confirm their position regarding the acceptance of fire water and a response is pending.

6.4 Fire Water

6.4.1 Volume Requirements

According to GN16, a 300m^3 stack of combustible material would normally require an average water supply of at least 2000 litres/minute for a minimum of 3 hours.

The largest single stack of ELVs at MR will be less than 300m^3.

On this basis, a fire water supply of 2000 litres or more would appear to be adequate.

6.4.2 On-site hoses

To tackle potential small fires in close proximity (<10m) to the site building, MR would use high pressure hoses that are routinely available and in use i.e. they are used to clean metal parts during dismantling.

6.4.3 Off-site Fire Hydrant

Fire hydrants will be the main source of water used by FRS in the event of a large major fire. During a previous large fire at the site they proved an effective and sufficient supply of water. MR understands that lessons learnt from the previous fire may have been documented by the FRS and would be keen to accommodate these in this plan.

Mid and West Wales FRS has confirmed that they operate their own identification system for hydrants and that hydrants are on the mobile data system on fire appliances. Each hydrant is logged according to a grid reference. The grid reference for the hydrant in closest proximity to MR provided by the FRS is summarised in Table 6-1.

Table 6-1 Fire Hydrant Coordinates

	Easting	Northing
Fire hydrant (FRS system)	262378	195492

Welsh Water has confirmed that all DCWW hydrants are the same standard size of 80mm flanged. According to DCWW, the approximate pressure at the hydrant is 30 metres head (mh) and that the hydrant is on a 90mm hppe main. This will provide a potential volumetric flow rate of fire water of approximately 3,400 l/sec (3m^3/sec). This figure exceeds the anticipated volumetric requirement and does not include the volume of water from the other hydrants.

A plan of the local water utilities is provided in Appendix 2.

6.4.4 Surface water

In addition to the off-site hydrants, the FRS may also wish to abstract surface water from the stream that is culverted beneath the site. This large stream is known to flow all year as it receives water from a large catchment.

6.4.5 Water Curtain

As shown on Figure 2, twenty 1m^3 nylon IBCs will be located along the boundary with Brenntag to the northwest. Each IBC will be filled with water and in addition to widening the

gap with the chemical storage site, will also provide an initial source of water during a fire. Given the heat capacity of water, the IBCs will also provide an important fire curtain along this boundary.

6.4.6 IBC Deluge ('Water Bombs')

The site will be equipped with 4 x (1000L) IBCs filled with water which, in the event of a fire, will be hoisted by the on-site material handlers and dropped on to any small fires/hot spots (one by one and only if safe to do so and under direction of a competent person or the FRS where relevant). These water deluge 'water bombs' will provide an instant large volume of water to aid the extinguishing of the fire (especially in the early stages). These will be clearly labelled and stored in strategic locations (and covered to prevent ingress of debris); a loose lid is normally placed on top of each to facilitate the deluge, when needed in an emergency.

6.5 Fire Suffocation

Sand is not stored at site. During a fire, MR will consider the use of soil / sand to suffocate a fire. This will only be done if NRW and FRS agree.

7 EMERGENCY FIRE RESPONSE PLAN

7.1 Potential Approaches

MR recognises that fires in waste sites can be difficult to extinguish, needing a lot of resources for long periods, and can have serious effects on public health, the environment, safety to firefighters and local communities. Impacts may be short term or long term, including:

- Public health impacts on responders and communities
- Businesses and the public being evacuated or sheltering in place
- Environmental impacts
- Pollution of surface and groundwater
- Road closures
- High demand on fire and rescue services and other agency resources
- Large-scale financial losses and disruption

When dealing with anything other than hotspots or small fires, MR expect the FRS incident commander responding to have the ultimate say in how the incident will be managed and the strategy that will be used to bring the incident to a satisfactory conclusion.

During an incident, particularly large incidents, MR recognises that there are often a number of conflicting views, pressures or powers from interested parties such as the public, environmental regulators and local authorities.

These conflicting views can be difficult to manage alongside the views of the site operator/ land owner and can place the incident commander under considerable pressure to find a solution that fits the differing priorities from different organisations. For this reason, MR will provide the FRS with all the resources it requires and is keen for this FPMP to be developed through consultation with relevant parties.

As noted in GN16, fires in stacks can be particularly difficult to extinguish using conventional firefighting approaches. This is particularly the case at sites storing treated wastes such as tyre crumb, wood chip or compost, because of the small particle size of the waste and the calorific density of the stack. Direct application of water, with or without firefighting additives such as foam, to burning stacks is often ineffective and may generate large volumes of polluted fire water and/or increase the hazard from the smoke plume, due to lower combustion temperatures. At ELV ATFs there is also the possibility of fuel or oil creating running fires.

Fortunately, at the MR site there are no stacks of high density calorific wastes and only ever modest quantities of fuel / oil, particularly petrol. Each fire is, however, unique and so the precise approach adopted by the FRS will be dependent upon a number of inter-related factors and ultimately their decision.

Typical firefighting methods for burning solid waste may include smothering the waste, separating burning material from other waste and controlled burn. Controlled burning is a defensive operational tactic to prohibit or restrict the use of extinguishing media on fires to allow the combustion process to continue uninhibited. This is sometimes used as UK law does not require the FRS to extinguish fires. A controlled burning strategy may warrant consideration in certain circumstances, including protecting the environment, where the

benefit from offensive firefighting does not outweigh the risks, or where available resources and media are insufficient to successfully resolve the incident. The decision of FRS to adopt a controlled burn strategy, as with smothering, would likely be made following consultation with relevant parties.

7.2 MR Approach

MR is prepared to tackle small fires, prior to the arrival of the FRS. A few scenarios are considered in the following sections. The approach described below will be updated as new infrastructures are installed.

7.3 Hotspot response

7.3.1 Fire Limitation

The first priority, after ensuring all human life is safe, is separation of unburned material from the fire using mobile plant to restrict the extent of spread. If it is safe to do so, burning or smouldering material will be moved into the closest quarantine area for extinguishment with water using the mains fed fire hose or IBC water bomb. At this stage, the aim will be to avoid the use of quench water to avoid the generation of fire water. Rather, heavy plant will be used to exclude oxygen and separate the hot materials from any other waste.

The application of water may be useful to cool unburned material. However, direct application of water in situ may not provide effective extinguishment and may generate additional oily run-off.

On detection of a fire within a container, if safe to do so the container will be moved by means of mobile plant away from other containers and/or waste piles to prevent fire spreading.

7.3.2 Fire Spread

Fires can quickly spread between stacks and between stacks and buildings/plant via various mechanisms. For externally stored waste stacks the most significant potential fire spread mechanisms include

1. Flying/blown 'brands' i.e. burning detritus blown from one stack to another (or building etc.). This mechanism is unpredictable and depends on factors such as wind strength and direction, and active fire management can reduce the risk, such as by tackling any flying brands with hoses or similar. Flying brands do pose a risk of fire spread but their impact is largely unpredictable.

2. Stack collapse. The collapse of a stack on fire resulting in burning wastes falling, rolling and coming into contact with a second stack. How far wastes can roll or fall as the result of a collapse varies dependent on the nature of the stack and the wastes, and waste configuration.

3. Thermal energy transfer: Heat produced by a stack which is on fire resulting in the temperature of a nearby stack (or building etc.) being raised to its ignition point and setting on fire.

To minimise fire spread, separate waste storage areas are defined (see Figure 2). Within each waste storage area, small stack sizes will be maintained before the maximum safe storage limit is reached i.e. the waste will not simply be arranged into one big stack if there is sufficient space for several smaller stacks. This will minimise the risk of self-combustion and fire spread.

A stand-off with the site boundary will be maintained although the adjacent areas are open farmland. Along the boundary with Brenntag, 20000 litres of water in IBCs will provide a fire curtain and a potential immediate source of fire water that could be pumped out of the IBCs. Brenntag has also re-arranged their yard so that nothing is now stored with 1m of their boundary and only non-flammable chemicals and empty containers are stored.

7.4 Small fire response

The Site Supervisor or available staff may attempt to extinguish a small fire using the correct extinguisher or a combination of fire extinguishers, IBC water bombs and mains water if:

- it is safe to do so
- it is a small fire that can be managed by the on-site staff
- staff and visitors have been moved from the danger area to the muster point on Figure 2 and an evacuation has commenced;
- the fire brigade has been called
- the person using the extinguisher or IBC water bomb has been trained in their use.

If a fire occurs on a vehicle or piece of equipment, the equipment operator will bring the vehicle or equipment to a safe stop. If safety of personnel will allow, the vehicle will be parked away from fuel supplies, uncovered solid wastes and other vehicles. The engine will be shut off and the brake engaged to prevent movement of the vehicle or piece of equipment.

On arrival, the FRS would take control of the incident with the full support of MR.

7.5 Large Fire Response

The sequence of these steps may vary according to the nature and circumstances of the fire emergency, but priority must always be given to the safety of staff and visitors, followed by the prevention of impact on identified local human or environmental receptors. MR will follow the instructions of the FRS and provide plant and personnel as required.

The following procedures are to be followed on the discovery of fire or smoke. The steps are numbered sequentially but in reality they will likely be implemented in parallel by different members of staff.

Raise Alarm

1. Upon discovering smoke or fire personnel will raise the alarm by shouting to each other.
2. The person discovering a fire should inform the Site Manager immediately and provide an assessment of the situation. The Site Manager must immediately go to the vicinity of the fire (if considered safe to do so) to assess the situation and decide upon a course of action.

Evacuate and Call 999

3. The person discovering a fire should then call the fire brigade on ''999" providing details of the fire's location and scale.
4. All non-essential persons should be instructed to leave the area and report to the designated off-site muster point on Figure 2. As this is directly opposite the site entrance a direct escape route should be followed. Persons evacuating must obey Site Managers instructions, ensure other workers also evacuate, assist any person who needs help (if safe to do so), not stop to collect any personal belongings, proceed directly to the muster point and remain there until officially instructed otherwise.

Trained personnel tackle fire or stop its spread

5. If safe to do so, the person or persons discovering the fire should seal off the area and fight the fire using appliances provided. Fire extinguishers, hoses and IBC water bombs may be used. Persons with no specific training are not expected to fight a fire. Where safe to do so, the person discovering the fire should delegate tasks to available staff members in relation to fighting or preventing the spread of fires. This may require dropping deluge water bombs onto the seat of the fire and using heavy plant to create further air gaps between burnt and unburnt waste and separating burning materials.
6. Where possible, machine operators are to move their machines to a safe area only returning to assist in the separation of waste to the quarantine area (to limit fire spread) and placement of IBC water bombs at the direction of the senior fire officer or Site Manager.

Roll call

7. The Site Manager will collect the roll call list and confirm the presence of staff and visitors at the assembly point.
8. If it is safe to do so, a search of all work areas of the site will be undertaken by the Site Manager to ensure that everybody has evacuated the site.

Environmental Protection

9. The Site Manager is to ensure the fire water management measures are implemented at the earliest opportunity to prevent fire water from discharging into sewer / sealed sumps.
10. The outflow valve to the sewer will be closed.

Update FRS upon arrival

11. Upon arrival, the Site Manager will issue the Emergency services with a copy of this document including Emergency Reference Plan. The Emergency services will assume control of the situation and all instructions/advice given by them will be followed. A copy of this FPMP will also be available in a safe box fitted with a combination padlock on the external wall of the site. The FRS will open this box having been given the combination code.
12. The Site Manager/Supervisor is to advise the Officer in Charge of the emergency services if someone is missing.

Contact off-site affected parties

13. After all occupants are evacuated and visitors and staff are accounted for, the Site Manager will be responsible for contacting relevant businesses/receptors, starting with those immediately downwind of the fire to advise them of any particular measures required while the fire is being brought under control (e.g. the evacuation of nearby premises, closing of windows, etc.).
14. After all occupants are evacuated and visitors and staff are accounted for, wait for the 'all-clear' from the FRS before returning staff to any affected area.

15. Sewerage undertaker will be connected to identify best way of managing any impounded fire water. This may include temporary suction into a vacuum tanker(s) provided by Siddell Environmental.

Post Incident Investigation

16. The Site Manager is responsible for ensuring the conditions that led to the fire are investigated (in association with the FRS and Police as appropriate). The Manager is also responsible for ensuring plant is safely recommissioned, accident plans and management systems documents are reviewed and improved, training requirements for staff personnel are reviewed and that any remedial measures (including further fire reduction measures and new procedures) are implemented.

7.6 Site Access

A minimum width of road of 3.7m and clearance height of 3.7m will be maintained at all times. This is required for efficient operation of the site during day-to-day operations and will provide good access for the FRS.

7.7 Notification of Fires to NRW

After any fire related to waste management activities that cannot be extinguished within 10 minutes of discovery occurs, NRW will be notified.

The notification will include:

- Contacting by telephone as soon as possible, but no later than 4 hours following fire discovery, and
- Providing a written description of the cause and extent of the fire and the resulting fire response within 14 days of fire detection.

The facility will provide NRW with as much information as possible regarding the fire and fire-fighting efforts, as soon as possible after the fire occurs.

The fire prevention and fire control procedures for the facility will be revisited following the occurrence of a significant fire to determine if modifications are warranted.

8 MITIGATING AND MANGING IMPACT OF FIRE

8.1 Potential Impacts of Fire

Waste fires can cause significant direct and indirect harm to people, the environment, commercial activities and public resources. Impacts may include:

- Use of firefighting resources that cannot then tackle other emergencies (not related to waste)
- Release of airborne smoke and particulates. This can smother vegetation and cause risk to human health through inhalation
- Transport of potentially contaminated firefighting fluids to drainage systems and controlled water (surface water and groundwater) which can impact water quality and wildlife
- Explosions and falling debris may result in physical harm to humans and infrastructure
- Use of firefighting resources that cannot then tackle other emergencies (not related to waste)
- Heat and flames can directly harm people, infrastructure and the environment
- Loss of business

On-site and off-site impacts of a fire can be influenced by a number of environmental factors. These include wind direction and rainfall and also run-off and presence of surface and groundwater.

- Wind direction is typically from the southwest/south-southwest and towards other businesses and residential areas to the north and east
- Fire water run-off will be impounded during a large fire. This will provide the opportunity for the Fire Rescue Service to potentially recirculate fire water and enable discharge options to be evaluated.

8.2 On-site Assets

Apart from plant, high value assets are principally located in the building, particularly the depollution bay where the depollution kit is used and stored. This building is fitted with a fire alarm and the site with 24/7 CCTV.

8.3 Business Continuity

The un-announced immediate closure of the MR site would be initially disruptive to clients but there are other local outlets.

Once an incident has been dealt with to the satisfaction of all interested parties, and the site is re-opened, MR would not anticipate a significant impact on long-term business.

8.4 Human and Infrastructure Receptors within 1km of site

Selected potentially sensitive human and environmental receptors within approximately 1km are also shown on Figure 4. Others also exist. Relevant contact details are provided in Table 1-3.

The immediate neighbours will be contacted by the Managing Director of MR as soon as possible following discovery of a fire incident. Concerns raised by the neighbours have been taken into consideration in this plan wherever possible. Depending upon the nature and timing of the incident there may be a need for neighbours to evacuate their properties or to close windows/doors etc. MR will assist with this process where possible.

Following the incident, the Managing Director will meet with the neighbours to explain what has happened and the steps that will be taken to minimise fire risk in the future. The neighbours will also be encouraged to provide feedback that would be accommodated in the FPMP.

8.5 Fire Water Run Off

The approach to fire-water control is to 'control at source'.

Fire water run-off has the potential to contain harmful combustion by-products, fire-fighting chemicals or un-combusted waste materials washed from the site. The volume of water involved and the subsequent dilution of these compounds will vary based on the scale and nature of any fire. Minimising potential impacts to the environment and local infrastructure is a key consideration of this FPMP and has been integrated to the design of the facility.

During a large fire, fire water will be impounded. This will provide opportunity for the FRS to potentially re-circulate the water for firefighting and provide MR to work with NRW and sewerage undertaker to identify suitable discharge option. The fire water may need to be temporary extracted into tankers whilst samples are tested. If this is the case, MR will commission Siddels to such the water into tankers.

Under normal conditions, drainage from waste storage area falls through a sealed drainage system to the foul sewer via a full retention interceptor. This system could be used during / following a fire but would first require consultation with the sewerage undertaker Welsh Water.

8.6 Emissions to Air

Emissions to air during a fire can include:

- Black or white smoke (dependent on type of material burning) – smoke is harmful and potentially highly polluting to local air quality (especially black smoke which may contain harmful and toxic substances such as carbon monoxide, dioxins, cyanides, hydrocarbons, etc.)
- Steam (as water is applied) – steam may potentially obscure vision.
- Ash/airborne debris – risk of harm to amenity (potentially being deposited on cars/in homes).
- Hot embers – risk of fire spread
- Pops/explosions – disturbance of nearby sensitive receptors and risk of harm due to projectiles

Emissions to air could be potentially reduced by suffocating the waste. This approach will first be agreed with NRW and FRS and will be based on their tactical approach. Wherever feasible, fire water would also be recirculated.

8.7 Removal of Solid Fire Waste

Following any fire there is likely to be burnt or partially burnt waste and/or their materials requiring off-site waste management. This will prevent potential future emissions to land and/or water.

Each of these waste types will need to be classified in accordance with WM3 and appropriate Duty of Care implemented at all stages. This may require the waste to be sampled and tested.

Until the waste is fully classified, the waste will be monitored and assessed for residual/ smouldering fires in an area separate from other wastes e.g. quarantine. This will be achieved by turning the waste, if possible and safe. During this process the waste will be inspected for residual sources of heat and smoke. Where suitable, and agreed with NRW and FRS, scrap that is still hot may be laid out into a thin layer using heavy plant and then quenched with cooling water.

8.8 Becoming Operational Again

The precise actions required following an incident will be dependent on the scale of any fire. Protection of the environment, specifically groundwater, will be prioritised and the clean-up operation will be carried out in full consultation with NRW. Permitted activities will not re-commence without NRW approval.

Before the site becomes operational following a fire incident the site will be cleared of all fire wastes, fire waters and all relevant infrastructure will be inspected for damage that may have been caused. This will include structural assessments of all infrastructure and buildings. Drainage will be tested to ensure that the system is still sealed and has not become blocked.

Following an internal review of the cause of the fire the findings will be integrated to an updated FPMP. Such a review would also accommodate any observations made by NRW, FRS or other third parties.

9 REVIEW AND UPDATE

9.1 Routine Review

Each year this FPMP will be subject to review. This will be aimed at ensuring that the procedures implemented on site match those documented in the FPMP. This will also provide opportunity for improvements to be identified and managed within an Improvement Programme.

As part of this Improvement Programme a timetable of all infrastructure improvements will be set out and agreed with NRW.

9.2 Monitoring

The following Key Performance Indicators will be used to monitor the effectiveness of this FPMP:

- Number of fires recorded annually / number of fire related incidents
- achieving set schedules and time frames (evacuation drills and building audits)
- Measuring the number of Fire Service call outs against cause.
- Number and nature of enforcement, alterations or prohibition notices from statutory authorities.
- Quarterly / six monthly/ annual premises inspection and meetings to ensure actions and progress are made.
- Annual audit of all fire systems by external fire risk assessors

9.3 Audit

MR recognise that it is important for the day-to-day activities to implement what is written in this FPMP to manage fire risk. Therefore, in addition to the pro-active monitoring programme a planned programme of internal and external audit will be implemented. Internal audits will be undertaken quarterly and external audits annually, and coupled to the annual review. The findings of all audits will be documented. During the audits the following aspects will be evaluated:

- Paperwork & Records – Maintenance schedules, daily fire checks, staff training, transfer notes, stock rotation, location and site plans
- Procedures - Waste Treatment, waste acceptance, ignition sources, dust management, integrity of infrastructure
- Prevention – check of stockpile sizes, detection systems, suppression system and site security
- Emergency Response - Containment, disposal of waste, firefighting equipment, water supply

A compliance assessment may not be limited to these areas, but it gives an indication of what an assessment may comprise.

9.4 Update following Incident

In addition to the regular review, monitoring and audit, this FPMP would be reviewed and updated where necessary following **any** fire incident. This could be following discovery of a hot spot, a minor fire where the FRS was not called or did not need to assist or following an incident where the FRS lead the fire-fighting. MR would be keen to integrate any feedback from NRW or FRS into an updated plan following such an event.

A review would also be prompted if the activities at the site changed, if the waste types accepted changed, if waste volumes accepted increased or if new infrastructure (buildings or plant) was installed.

All areas of the FPMP would be available for review during any update or review. Focussed attention would, however, be made to ensure that the document captures potential changes to the risk of fire occurring and additional preventative and management techniques required.

Figure 1 Site Location Plan

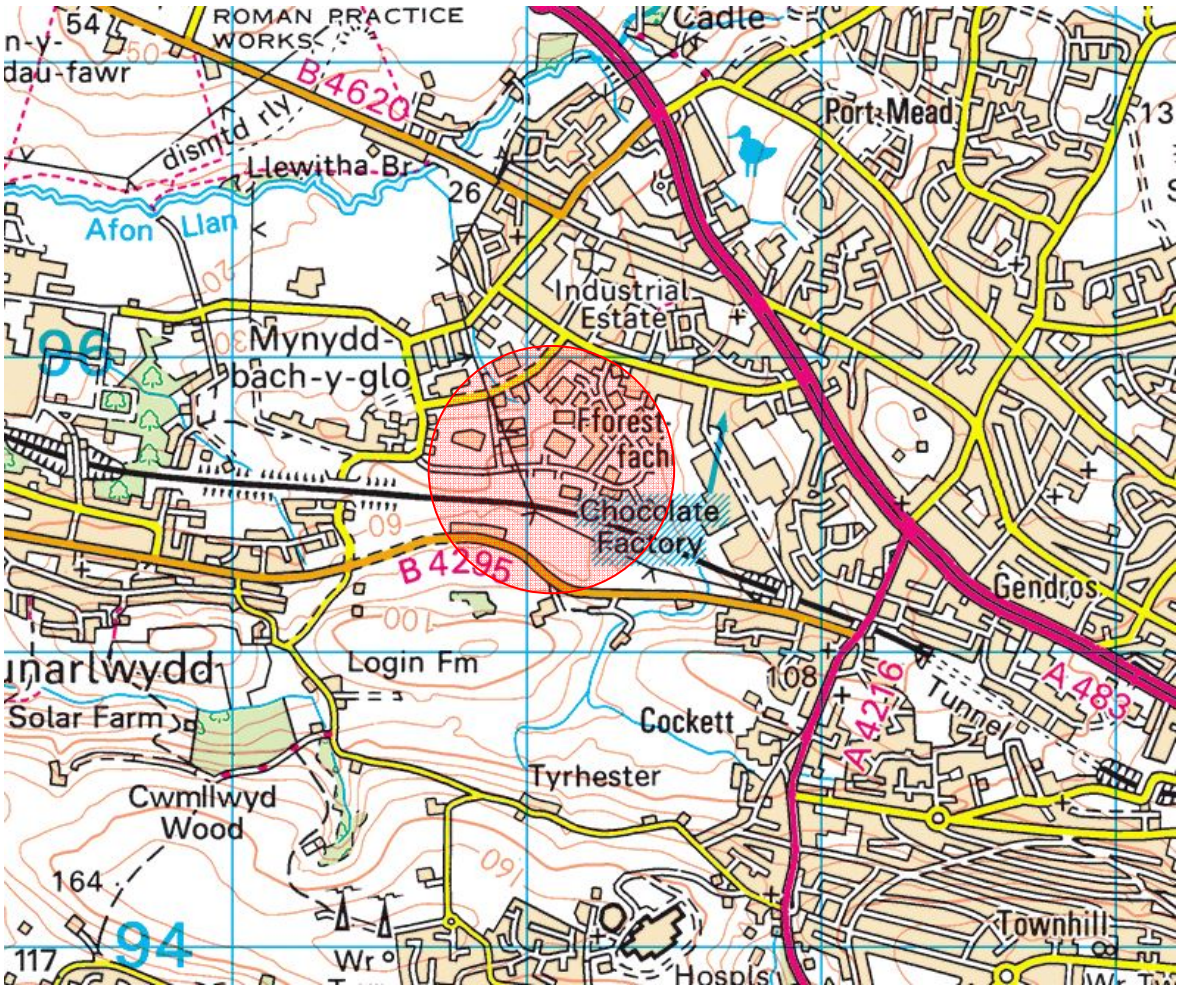
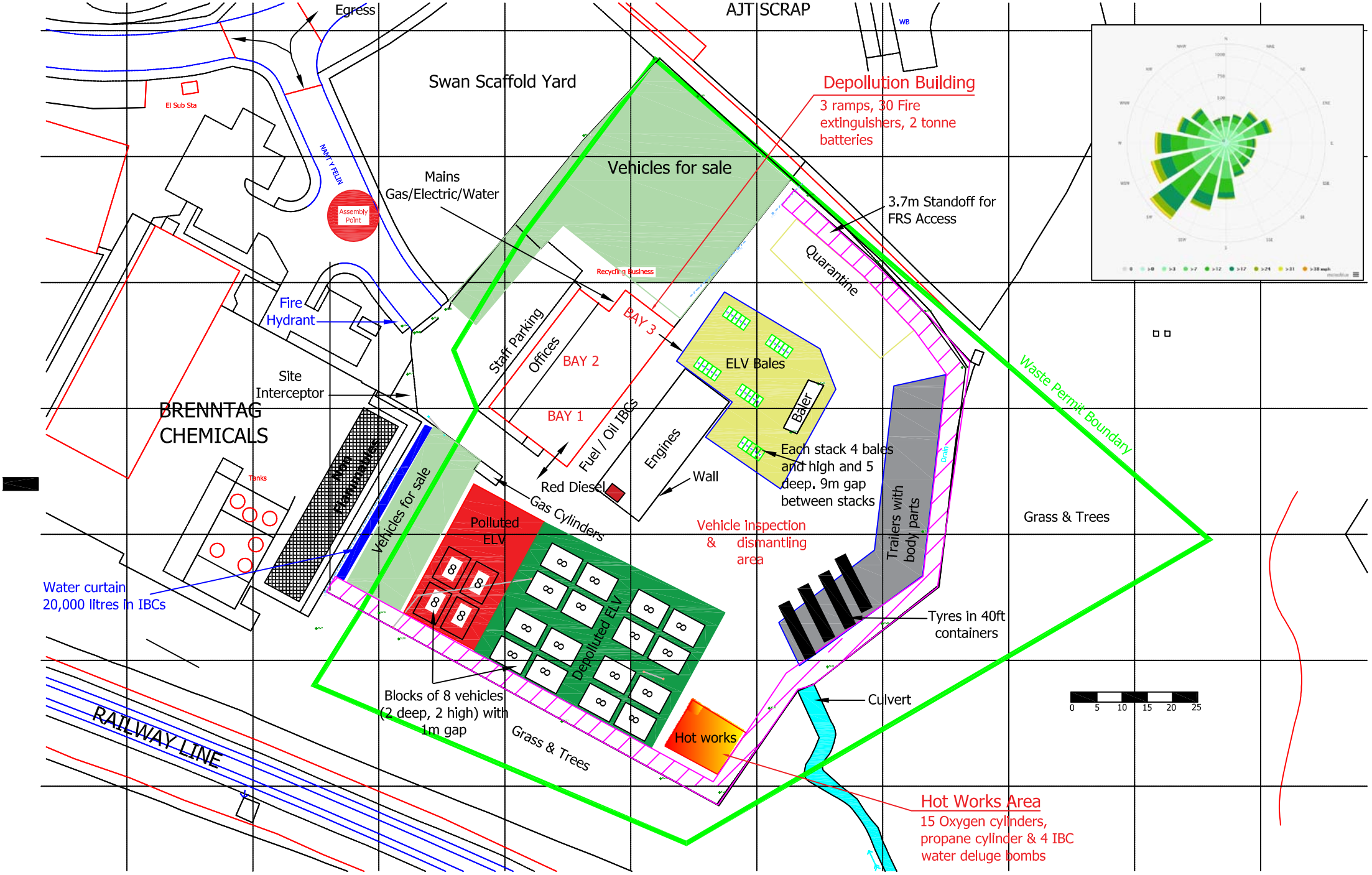


Figure 2 Site Plan



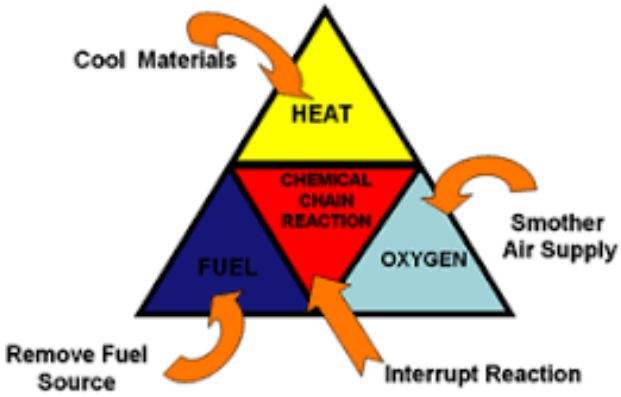
Revision 0

1877r1v1d0219 Figure 2

Scale as shown

Figure 3 Key Features within 1km of Site

M AND R COMMERCIALS
FIRE PREVENTION AND MITIGATION PLAN
(FPMP)



Operator: M and R Commercials
Facility: END OF LIFE VEHICLE AUTHORISED TREATMENT FACILITY, FFORESTFACH

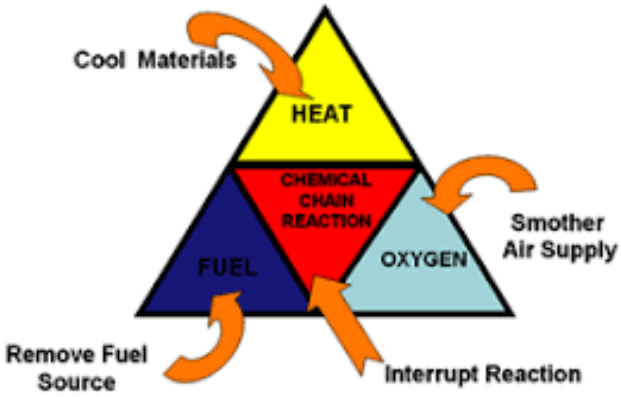
Permit reference: GP3193MV

Appendix 1
Fire Risk Assessment

Fire Risk Assessment

To be inserted

M AND R COMMERCIALS
FIRE PREVENTION AND MITIGATION PLAN
(FPMP)



Operator: M and R Commercials
Facility: END OF LIFE VEHICLE AUTHORISED TREATMENT FACILITY, FFORESTFACH

Permit reference: GP3193MV

Appendix 2
Water Utilities Plan from Welsh Water

Dŵr Cymru
Welsh Water

Nant y Felin

N
W E
S

LEGEND

Clean network:

- Sluice valve
- Pressure reducing valve
- Meter
- Bulk meter
- Hydrant (FH)
- Cap end
- Air valve
- Stop tap
- Water Treatment Works
- Water Pumping Station
- Existing main
- Non-operational main
- Raw Water

NB: Water main symbol colour indicates the type.

LIGHT BLUE	- Trunk
DARK BLUE	- Distribution
YELLOW	- Raw Water

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Map Ref:	262378,195489
Map scale:	1:1500
Printed by:	John Emma
Printed on:	15 Feb 2019

6IN. uPVC 1981
FELIN FACH
FH
FH/WO
FFOREST-FACH
9
10
14
8
7
Tank
Recycling Business
WB
El Sub Sta
1
3
Bell Court
6
4
90 mm. HPPE 2000
Recycling Business
Tanks
Drain
63.7m
SL
MP
66.1m
68.3m
Issues
Track
ETL
Track
69.8m
Issues
Pond
71.3m