

PAPERBACK COLLECTION & RECYCLING LTD

FIRE PREVENTION & MITIGATION PLAN

PENRHOS STORAGE

Version 1.7 October 2017

# Revision Schedule

Rev	Date	Details	Prepared by	Author
Version 1.0	17/5/2017	Draft	Ceri Environmental Consulting Ltd	Drafted by Clare Walters
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Version 1.7	16/10/2017	Changes made to incorporate SPA and cSAC as receptors and also clarify quarantine areas	Ceri Environmental Consulting Ltd	Drafted by Clare Walters

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## **1. INTRODUCTION**

This Fire Prevention and Mitigation Plan has been developed by Ceri Environmental Consulting Ltd, using Natural Resources Wales, Fire prevention and mitigation plan guidance - Waste, Version 1, May 2016.

The Fire Prevention and Mitigation Plan ( FPMP ) does not seek to address Health and Safety issues and it will not replace any statutory requirements under the Regulatory Reform ( Fire Safety ) Order 2005 or any other applicable legislation. Advice on these matters should be sought from a competent person.

The main emphasis of the plan is to prevent a fire happening but also to ensure that the course of action taken, if there is a fire, will reduce the impacts on the environment and sensitive receptors as far as possible. This Fire Prevention and Mitigation Plan forms part of the Environmental Management System (EMS) for the Site ( meaning the permitted site as applied for ) which has been developed by the operator, Paperback Collection & Recycling Ltd.

The Environmental Management System (EMS) includes monitoring, inspections, record keeping requirements, procedures and training requirements.

### **1.1 Paperback Collection & Recycling Ltd**

Paperback Collection & Recycling Ltd ( PCR Ltd ) propose to operate a plastics storage facility (material recycling facility) at Penrhos Storage, Penrhos Works, Anglesey, LL65 2UX, grid ref SH 26215 81132.

PC&R Ltd also has a processing facility on Deeside which takes in a limited range of plastics which are sorted and separated for recycling. One of the outputs from that facility is baled plastics, EWC 19 12 04. It is these waste baled plastics which are to be stored at the Penrhos facility.

### **1.2 Roles and Responsibilities**

The overall responsibility for the operations at the Site lies with Paperback Collection & Recycling Ltd. Gordon Anderson, MD of PCR Ltd, will, along with its EMS & H&S Manager, Tony Whittaker, be responsible for liaising with North Wales Fire Service and ensuring that Site operatives are suitably trained and made aware of the need to prevent fires from occurring and the measures in place to ensure that any fires are dealt with in an safe and effective manner.

## **2. SITE SETTING AND LOCATION**

### **2.1 Site Layout**

The proposed permitted Site is located within a large industrial area (which was originally the Anglesey Aluminum site and is now owned by Orthios Eco Parks ( Anglesey ) Ltd.) with the main entrance off the A5 London Road. Site access is via a 24 hour security gated and manned access road. The site location is shown on Boundary and Location Plan CEC/PA/001 and the Receptor Plan CEC/PA/002.

Storage of baled plastics will be carried out inside the A Frame building which makes up most of the proposed permitted Site. Within the Site there will be no further processing and the primary and only use of the building will be for storage. The permitted area around the building consists of an access road, unloading areas in front of the two main doors to the building and quarantine areas outside the building, which may be used to store plastics on a temporary basis in case of emergencies and in accordance with this Fire Prevention and Mitigation Plan. See drawing no CEC/PA/001.

### **2.2 Site Security**

The overall site and its main entrance at Penrhos has 24 hour manned security. There is an access gate which is manned during opening hours and has fob key entry only to the site. The perimeter of the entire site complex is fenced. All baled plastic will be stored inside the A Frame building ( except in the case of emergency when it may be stored outside on a temporary basis in accordance with this Fire Prevention and Mitigation Plan ) which will be locked when the site is not manned.

### **2.3 Site Access Points**

The overall site complex is accessed by an entrance off the A5 London Road. There is a second emergency access point to the south east of the overall industrial complex ( The East Gate Entrance see drawing no 53-1570-P ) which the emergency services can use if needed. The A Frame building has two vehicular access doors at the front of the building and a number of emergency exits for personnel ( see plan no CEC/PA/004 ).

### **2.4 Sensitive Receptors**

An assessment of sensitive receptors has been carried out as part of the Risk Assessment for the application for the Environmental Permit. The location of the receptors is shown on the receptor plan CEC/PA/002.

An online search and a site visit identified the following receptors :-

<b>Receptor</b>	<b>Distance from site metres</b>
Businesses and potential office accommodation within the site complex	Adjacent the site and further away
Commercial and retail area	approx 330m to WNW
Local Housing – house by Penrhos beach	approx 230m to NNE
Local Housing - main residential area	approx 630m to NW of
Hospital- Ysbyty Penrhos Stanley	approx 600m to NW of
Care Home	non found
Schools - Ysgol Morswyn	approx 850m to NW
Railway line	approx 355m to SW
A55	approx 400m to SW
Surface waters	approx 24m to N
Groundwaters	No Source Protection Zones or ground water designations in bedrock or superficial deposits. Groundwater vulnerability zone ( Minor aquifer high ) at Penrhos beach at approx 260m
Beddmanarch-Cymyran SSSI	approx 950m to NE
Anglesey Terns SPA	approx 275m to N
North Anglesey Marine cSAC	approx 500m to N

Surrounding businesses and housing may be impacted by fire smoke, subject to prevailing wind conditions on the day. There is a hospital approximately 600m from the site and a school at approximately 850m which may also be affected by fire smoke, depending upon prevailing wind conditions. The main A55 road and railway to Holyhead could also be affected. There is also the potential ( without any mitigation measures ) for surface waters to be affected to the north east of the site and hence also the Anglesey Terns SPA and North Anglesey Marine cSAC.

The Wind Rose for Valley Airfield (approximately 6.5km from the Site to the SE), ( see Drawing Nos CEC/PA/002 & 003 ), shows that the prevailing winds are from the South South West.

### **Likely impacts assessment**

#### *Fire hazards*

Fires involving combustible wastes can cause significant harm to people and the environment. There is the risk of death and/or serious injury and health damage associated with high thermal energy and smoke inhalation.

Combustion products release airborne pollutants which can cause both short and long term effects on human health and the environment. The combustion products generated by plastic wastes will vary depending upon the material burning and also the conditions of the burn. The cleanest burn will result if there is an intense burning phase with a minimised smouldering phase.

Firewater run-off can transport pollutants into drainage systems, rivers and lakes, groundwater and soil, threatening water supplies, public health, wildlife and recreational use. However, there would be no direct run off of water from the Site, during a fire, if firewater were contained. Firewater containment, therefore, forms a key part of this FPMP.

Ash from a fire may contain contaminants which, if left in situ, could result in land contamination.

Explosions, sparks and projectiles can harm people and spread any fire to unaffected areas.

#### *Assessment of hazard – risk - receptor*

In order to assess the risks posed by fire a consideration of potential receptors has been made. These are detailed above and are considered individually below :

##### a) Local residential properties

A fire would potentially release smoke and airborne pollutants which could affect human health and cause nuisance.

The principal air quality concerns regarding the combustion of all types of plastics and their associated effects on health and the environment are summarised below :

Table 1

Potential Pollutant	Health Effects	Environmental Effects
Carbon Monoxide	Headache, nausea, tiredness, confusion. Prolonged exposure can lead to death.	Oxidises to carbon dioxide in the atmosphere.
Dioxins & Furans	Carcinogenic; causes growth defects; affects DNA, affects immune and reproductive systems.	Increased toxic loading on environment; leads to contaminated water/ land, affects animal health.
Polycyclic Aromatic Hydrocarbons (PAHs)	Carcinogenic in most animal species including mammals, fish and birds.	Increased toxic loading on environment; leads to contaminated water/ land, affects animal health.
Volatile Organic Compounds (VOC)	Dependant on VOC species. Potentially directly toxic including problems ranging from carcinogens to nervous disorders. Respiratory irritation, chronic lung disease.	Contributes to low level ozone, causes vegetative damage. leads to contaminated water/ land, affects animal health.

Semi-Volatile Organic Compounds (SVOC)	Species can include animal carcinogens. Causes eye and respiratory illness and headaches.	Increased toxic loading on environment; leads to contaminated water/ land, affects animal health.
Particulate Matter (PM)	Irritation of respiratory tract, aggravated asthma, contributes to chronic obstructive pulmonary disease (COPD).	Increased toxic loading on environment; leads to contaminated water/ land, affects animal health.

The nearest residential property is approximately 230m from the Site. There are also a number of other properties in this vicinity.

Taking account of prevailing wind directions these receptors are likely to be impacted upon in the event of a fire.

If the wind speed is significant it is likely to take any pollutants out towards the sea and may potentially impact some residential properties on the north west coast of Anglesey.

Several important prevention and mitigation measures will be put in place to address the risks identified. These are detailed in the following sections of this FPMP.

#### b) Ysbyty Penrhos Stanley Hospital

A fire would potentially release smoke and airborne pollutants which could affect human health and cause nuisance.

Principal air quality concerns regarding the combustion of plastics and their associated effects on health and the environment are detailed in Table 1.

It is understood that the hospital has a minor injuries unit and also approximately 43 inpatient beds including a care of the elderly unit. Staff, patients and visitors could potentially be impacted as a result of aerial emissions from a fire at the site. Some of the patients could be sensitive to smoke emissions.

However, the hospital is not downwind of the prevailing wind direction.

Prevention and mitigation measures will be put in place to address any risk. These are detailed in the following sections of this FPMP.

#### c) Ysgol Morswyn

A fire may potentially release smoke and airborne pollutants which may affect human health and cause nuisance.

Principal air quality concerns regarding the combustion of plastics and their associated effects on health and the environment are detailed in Table 1.

The school is not downwind of the prevailing wind direction.



Prevention and mitigation measures will be put in place to address any risk. These are detailed in the following sections of this FPMP.

d) Main residential area

A fire may potentially release smoke and airborne pollutants which may affect human health and cause nuisance.

Principal air quality concerns regarding the combustion of plastics and their associated effects on health and the environment are detailed in Table 1.

The main residential area is not downwind of the prevailing wind direction.

Prevention and mitigation measures will be put in place to address any risk. These are detailed in the following sections of this FPMP.

e) Potential Office accommodation

A fire may potentially release smoke and airborne pollutants which may affect human health and cause nuisance. The principal air quality concerns are detailed in Table 1.

Office accommodation is close to the storage building and so thermal heat issues may also impact people within the accommodation. We understand that the office accommodation is to remain unoccupied for the foreseeable future.

Communication and evacuation procedures will be in place within the EMS if any fire alarm is triggered for the Site.

f) On Site Industrial area

A fire may potentially release smoke and airborne pollutants which may affect human health and cause nuisance. The principal air quality concerns are detailed in Table 1.

Within the overall industrial site parts of the industrial area are close to the proposed permitted area and there is shared access. A fire may impact upon any people within this area and access to and from the site may be disrupted. There is a second access to the overall industrial site from the south east (East Gate Entrance) which could be used in an emergency for access and evacuation purposes.

Communication and evacuation protocols and procedures will be in place if any fire alarm is triggered for the Site.

g) Railway line and A55

There is a main railway line and the A55 runs close to the eastern boundary of the main industrial site, furthest from the proposed permitted area itself. There is some potential for smoke to possibly cause problems for trains or vehicles using the A55 in the event of a fire. Smoke impairs visibility and fires may damage signaling equipment. However, it is unlikely that a fire on the

Site would spread to the railway line and cause any damage to signaling or property. Visibility may be an issue subject to prevailing conditions at the time.

Due to the prevailing wind direction these receptors are less likely to be impacted in the event of a fire.

Nevertheless, prevention and mitigation measures will be put in place to address the perceived risk. These are detailed in the following sections of this FPMP.

#### h) Local businesses in commercial and retail area

There are some local businesses on the industrial and retail area to the north west of the Site, in the direction WNW, at an approximate distance of 330m. A fire may release smoke and airborne pollutants which may affect human health and cause nuisance.

The prevailing wind direction is away from these receptors and so the potential for impact is reduced. These receptors are also likely to be less sensitive than the residential receptors due to their light industrial nature.

#### i) Surface and ground water features

There are surface water ditches to the north of the main site, shown on drawing number CEC/PA/003. Under normal operating conditions there should be no discharge of water from the building, which will be used for storing all of the waste. The site surface water drainage ( rainfall ) from the outside of the building ( non waste areas ) combines with surface water drainage from the larger overall industrial complex and outfalls to an isolation penstock controlled discharge point. This point then discharges to the Penrhos beach ( see plan 53-1570-P. Please note that this plan contains details of buildings and features within the larger Orthios Eco Parks ( Anglesey ) Limited site which are outside the proposed permitted area ). In the event of a fire at the storage site, firewater run off will be initially contained within the building. There is a concrete bund wall around the inside of the building which will contain firewater within the building and there is also an internal drainage system within the building ( see section 4.12 for details ). In order to prevent firewater escaping from the building via the two main entrance doors, the Site will be equipped with inflatable booms and sand bags which will be deployed across these doors to contain fire water within the building and its drainage system.

Pedestrian fire exit and access points from the building will be outside of the internal bund wall so fire water run off will not be able to escape from this area.

If the building and internal drainage capacity were overwhelmed, firewater would be allowed to escape to the external drainage system. As this area discharges via a system of penstock isolation valves to surface water, in the event of a fire, the penstock valves would be closed to ensure containment of

firewater within the site. The firewater could then be re-circulated for use in tackling the fire, if the fire command approved its re-use.

In addition to containment of firewater on these two fronts, a fire protocol/procedure would also be in place to provide mobile tankers for removal of firewater from the drainage systems both inside and outside of the building. This method of firewater management would add a third containment measure with mobile removal and treatment at an off-site water treatment facility. As a result of the above measures surface and ground water receptors will be protected and should not be impacted in the event of a fire.

j) Beddmanarch-Cymyran SSSI, Anglesey Terns SPA, North Anglesey Marine cSAC

The Beddmanarch-Cymyran SSSI citation states :

"This site, which includes a variety of coastal habitats between Holy Island 'mainland' Anglesey is selected primarily for its ornithological and botanical interest. There are large areas of sandbank, mudflat and saltmarsh, as well as two stands of dune heath. The site also has marine biological interest. A wide range of water-birds, both on passage and in winter, are attracted to the area which is especially important for overwintering ringed plover, greenshank, red-breasted merganser and goldeneye. A number of coastal bird species also breed in the area, but the former importance of the rocky islands in the Inland Sea for their tern breeding colonies has diminished considerably in recent years.

On the mudflats there are beds of eelgrass *Zostera* spp and all three British species have been recorded. Saltmarsh vegetation fringes most of the site but only forms extensive stands in sheltered bays and estuaries; among the more abundant saltmarsh species present are common saltmarsh-grass *Puccinellia maritima*, thrift *Armeria maritima*, lax-flowered sea-lavender *Limonium humile*, sea rush *Juncus maritimus* and the invasive cord-grass *Spartina anglica*; the uncommon golden samphire *Inula crithmoides* occurs in both saltmarsh communities and on parts of the rocky shoreline. The coastal dune heath at both Traeth y Gribin and Cymyran are interesting examples of this locally uncommon habitat type. "

The Anglesey Tern SPA has been designated as an area which should contribute to the breeding tern population. Issues which could result in risk to the tern population could include disturbance, predation, loss of supporting habitat and loss of food supply.

The qualifying feature of the The Anglesey Marine cSAC is the presence of Harbour Porpoises. The Joint Nature Conservation Council tells us in their Draft Conservation Objectives & Advice on Activities ( January 2016 ) that Conservation Objectives for harbour porpoise sites is on addressing pressures that affect site integrity and would include:

- killing or injuring significant numbers of harbour porpoise (directly or indirectly);

- preventing their use of significant parts of the site (disturbance / displacement);
- significantly damaging relevant habitats; or
- significantly reducing the prey base.

In assessing the potential risk to the SSSI the possible effects of a fire at the site will be considered in terms of the above and :

- |                            |  |
|----------------------------|--|
| • Toxic contamination from | toxic leachate<br>toxic wastes<br>contaminated dusts |
| • Habitat loss from        | land encroachment<br>explosive wastes                |
| • Siltation                | suspended solids                                     |
| • Smothering               | dust/particles                                       |
| • Disturbance              | visual<br>human presence<br>noise/vibration          |

#### Toxic contamination from air emissions and firewater run off

The storage facility is non hazardous in nature. However, in the event of a fire there would be emissions to air which may potentially impact the environment.

Table 1 details potential impacts on animal and plant life and the potential for toxic substances to build up in the event of a fire.

The scale of the impact can be assessed by a consideration of the likely exposure of the SSSI, SPA and cSAC to the potential emissions. The SSSI is not downwind of the prevailing wind direction and is approximately 950m from the proposed permitted site. The cSAC and SPA are at approximately 500m and 275m, respectively, to the north of the site and so are potentially downwind of the site.

There are fire prevention and control measures in place and so a fire should be an unlikely event. A fire would be an emergency situation and action taken to extinguish it immediately. It would be a restricted and short term event and air emissions would dilute and disperse depending upon the weather conditions.

In addition to these mitigating factors, the size and nature of the cSAC and SPA sites mean that localised and diluted toxic air emissions are unlikely to significantly impact upon the sites as a whole.

Polluted fire fighting water run off should not escape from the site due to the firewater containment measures and so is unlikely to impact the SSSI, SPA or cSAC ( see assessment above in terms of surface water risk ). The facility has an engineered containment and drainage system which has been designed to prevent the escape of firewater from the site. There is an inspection and maintenance system for this containment system within the EMS which should ensure that its integrity is maintained.

### Habitat Loss

Habitats loss could result from the physical take up of habitat or buffer zone. However, there will be no encroachment resulting from the Site and no potential for explosive wastes which could impact the site.

### Siltation

Siltation may potentially result from suspended solids from fire ash being discharged from the site to the receptor site. The likelihood of this is low and the potential impact insignificant as the pathway would be the same as that for toxic contamination via fire water run off ( see above ). There is a penstock control on the outfall of the surface water system from the site and this would be closed in the event of a fire to prevent fire water run off to the SPA, cSAC and SSSI.

### Smothering

Smothering may potentially occur from dust and airborne particulates being generated at the site in the event of a fire and being deposited on the receptor sites. There are fire prevention and control measures in place and any fire would be an emergency situation which would be short lived and unlikely.

Smothering could potentially result in damage to habitat or loss of prey base or food supply. However, due to the fire prevention and mitigation measures, the unlikely event of a fire and the size and nature of the cSAC and SPA sites, localised airborne particulate emissions are unlikely to significantly impact upon the designated sites as a whole.

Due to a combination of distance from the facility and prevailing wind direction it can be concluded that there is no significant risk posed to the SSSI from smothering.

### Disturbance

There should be no impact on the SSSI, SPA or cSAC from disturbance. Human presence, noise and light from the site should not affect the SSSI, SPA or cSAC due to distance from the site and the nature of the activities on Site.

Scavengers and pests which could result in disturbance and predation are not a significant hazard at the Site due to the waste types accepted at the site.

There will obviously be no direct killing or injury to harbour porpoises from the proposed site activities nor would there be disturbance or displacement.

### **3 WASTE OPERATIONS**

#### **3.1 Baled Plastic Waste Deliveries**

The Site will only accept processed baled plastic from its sister site at Deeside, also operated by Paperback Collection & Recycling Ltd. All baled plastic waste delivered to the site is Quality Controlled checked before it leaves the Deeside site to ensure that it is as specified for the Penrhos Storage facility. Each consignment will be checked/recorded to ensure that it corresponds to the description on the waste transfer note and to ensure that the materials are acceptable under the terms of the Environmental Permit.

Baled plastic waste will also be checked at the point of delivery at the Penrhos site to ensure compliance with the waste transfer note requirements and acceptance for storage.

Consignments containing only materials listed in the Permitted Wastes List ( ie only 19 12 04 ), will be unloaded and the bales placed within the storage building. The bales will be stored in accordance with the layout specified in drawing number CEC/PA/004.

If there is any waste which should not be in the load (ie not compliant with the permit) then this will be removed by the same delivery vehicle and returned to the Deeside facility or taken to another suitably permitted facility.

There is an inspection and recording procedure in place to record the date of delivery of each load and to which storage pod the load relates. This will allow a "first in first out" policy for baled plastic waste to be stored at the facility. The building and surrounding permitted area will be kept clean to reduce the risk of fire spread in the storage area or outside the building.

#### **3.2 Throughput of Waste and Storage Duration**

The site will have a maximum storage capacity of 15,000 tonnes and a maximum annual throughput of 45,000 tonnes. It is unlikely that the maximum capacity will be reached in any twelve month period of storage.

The type of baled plastic waste being stored is dry, does not contain foodstuffs, biodegradable or putrescible items and since it is not RDF or its equivalent there is an extremely low risk of self heating and self combustion.

The operator currently has many years experience of the type of waste it is proposed to store at the Penrhos site. Bales are stored at the Deeside facility and temperature probing of this material, over some period of time, has shown that the temperature of the bales is stable and self heating does not

occur. In addition, storage within the building will remove any significant effects of the sun on the temperature of the bales

Given the nature of the waste operations and the volumes stored, temperature monitoring of the stored materials is not considered vital but will nonetheless form part of the standard storage protocols/procedures within the A Frame building.

No baled plastic waste shall be stored for longer than 12 months.

### **3.3 Storage Areas**

The storage areas are shown on Drawing No CEC/PA/004.

Baled plastic waste will always be stored in the building, and so under cover, unless in an emergency fire situation it is stored outside in one of the quarantine areas on a temporary basis.

The building is approximately 190m x 60m in total. The building will be accessible to fire fighters in the event of a fire via two main entrances at the front of the building and also via pedestrian access points to the building. The entire external perimeter of the building will also be accessible.

The storage building and outside areas should not contain any loose materials. However, if any bales break or materials become loose, the building and outside areas will be cleared of loose debris to prevent the build up of potentially combustible material and to prevent litter. This clearing is carried out in accordance with the EMS inspection and recording procedure.

The layout of the storage building has been carefully considered with maximum allowance of fire breaks, access areas and storage pods set out in accordance with the Drawing no. CEC/PA/004. Fire breaks along with limitations on total capacity and access afforded within and outside the building will significantly reduce the risks for a fire to spread from storage pod to pod. The layout of the internal and external areas will also provide the added opportunity for removal and quarantining of non-burning baled materials to the quarantine areas ( as shown on drawing no. CEC/PA/001 ). The quarantine areas would only be used for the storage of unburnt baled plastic on a temporary basis to aid fire fighting. The quarantine areas are open areas located within the overall Site as shown on the above drawing. These areas are surfaced with a mixture of concrete and hardstanding and are uncovered and so would only be used to store materials which would not give rise to pollution. As soon as practicable after a fire incident any materials stored within the quarantine areas would be removed either to within the A frame building or off site.

All bales will, whenever possible, be stacked in a brick pattern rather than simply on top of each other. This will have the effect of reducing the "vertical tunnel" effect of any fire spread.

Although it is considered that, due to the nature of the material to be stored and its dry condition, there will be no significant, if any, risk of self heating, the management of stock inside the storage building will be structured on the "FIFO" basis. That is bales will be removed on a first in first out principle. This will reduce storage time, aid rotation of stock and assist in maintaining the best materials handling principles whilst avoiding build-up of loose litter and debris within the warehouse storage area.

### **3.4 Hazardous Wastes**

Hazardous wastes will **not** be permitted at the Site.

### **3.5 Fuel Storage**

There will be **no** fuel or gas cylinder storage at the Site.

### **3.6 Plant and Equipment**

There will be materials handling plant on Site i.e. vehicles delivering and removing the baled plastic, an excavator type piece of plant and at least 2 x fork lift trucks. All vehicles and plant are fitted with fire extinguishers. All plant is maintained and inspected in accordance with the EMS.

This plant will be available on Site if required for use by the fire service. The plant will be fitted with heavy duty pneumatic tyres to enable them to enter the building safely for removal of stock to quarantine areas in the event of a fire. Site staff will be trained in the use of equipment for such an eventuality. In the event of a fire in the storage building the removal of stock would be carried out only where it is safe to do so and under the supervision of the Fire Command at the time. This will reduce the risk posed to life in tackling a fire.

## **4 FIRE PREVENTION AND CONTROL MEASURES**

### **4.1 Potential Causes of a Fire and Sources of Ignition**

A Site storage area, by nature, will have very few potential sources of ignition or other activities taking place which may cause a fire. The potential causes of fire are likely to be any electrical faults, sparks or leaks from plant and equipment or arson. The risks are deemed to be low but the impacts of a fire could be significant.

To reduce the risk of electrical faults causing a fire all electrical wiring will be fully tested and certified by a qualified electrician and will be tested at regular intervals with the results recorded in the EMS.

To reduce the risk of leaks contributing to fire risk all equipment will be maintained and inspected in accordance with the requirements of the EMS and the results recorded.



Hot works are not routinely or likely to be carried out within the building. In case they are, there is a hot works procedure within the EMS to reduce the risk of sparks or other ignition sources.

There will be **no** industrial heaters used at the permitted Site.

In order to reduce the risk of arson caused by intrusion the storage building will be linked by CCTV to the gatehouse security building and the 24 hour site security ( see section 2.2 ) . This will reduce the risk of intruders starting a fire at the site. The building will also be locked at night.

## **4.2 Causes of Fire Spreading and Mitigation**

Once a fire has started it can spread through heat to adjacent materials or through sparks or airborne embers falling onto other combustible materials.

Fire suppression has been considered for this development. However, water sprinklers may prevent a fire spreading, but will not put out the fire, so other firefighting medium is required to achieve this ( see detail below ). In order to stop or reduce the risk of fire spreading the layout of the baled plastic waste within the storage building is within discrete storage pods/stacks with fire breaks around all sides of the bale stacks. There are two wider fire breaks ( >10m ) at the two main access points to the building which separate the baled plastic waste into three sections (see drawing CEC/PA/004). This stack/pod separation significantly reduces the risk of fire spreading and thereby further reduces the likelihood of the entire stored materials being on fire at the same time.

In the event of a fire there is the provision for the removal, if it is safe to do so, of baled plastic waste in close proximity to the fire to the quarantine areas thereby further reducing the risk of fire spreading.

In addition the bales will, whenever possible, be placed in a brick pattern rather than simple on top of each other. This will reduce the vertical tunnel effect which can result in fire spread.

## **4.3 Fire Detection Methods**

There will be UKAS accredited fire detection systems within the building as well as CCTV. The fire detection systems will be linked to the 24 hour security at the overall Anglesey site.

## **4.4 Emergency Services Access**

The site access is from the A5 London Road and can be used to access all parts of the site.

The site can also be accessed from the alternative entrance off the A5 at the East Gate Entrance.

#### **4.5 Fire Box**

A fire box is to be maintained at the site access gatehouse with the Fire Prevention and Mitigation Plan, contact names and numbers and a set of drawings showing the locations of the drainage system and layout of the site. This will enable the Fire Service to assess the site more effectively and implement pollution prevention measures in accordance with the EMS and established protocols.

#### **4.6 Water Supply**

There is a 1.8 million litre concrete chamber below the A Frame building. The chamber is being converted into a water reservoir and will be maintained in a full capacity, to be utilized as firewater. The configuration is such that any water released into the A Frame building will immediately drain back into this chamber where it can then be recirculated to the fire pumps (via a filter). This closed loop system affords the A Frame an almost limitless supply of fire fighting water.

In addition, there is a fire hydrant system within the main industrial site and the fire hydrant points are in close proximity to the A Frame storage building ( see drawing 53-1560-P ). There is extensive firewater capacity on site as part of the overall industrial site and this will be available for use by the proposed facility.

#### **4.7 Fire fighting Materials**

Plastics can give rise to a range of noxious gases when burned and produce dense smoke and the fire service will decide the most appropriate means of extinguishing the material.

Water is available as detailed in section 4.6. Water hoses are available outside the two main site entrances. Fire extinguishers are available in the building and all the on Site plant is equipped with fire extinguishers.

#### **4.8 Plant and Equipment**

There will be very little plant on site: vehicles delivering and removing the baled plastic, excavator type plant and fork lift trucks. All vehicles and plant are fitted with fire extinguishers. All plant is maintained and inspected in accordance with the EMS. This plant will be available for use if there is a fire under the instruction of the Fire Command.

#### **4.9 Quarantine Areas**

Quarantine areas will be established outside of the A Frame building maintaining a break between the quarantine areas and the building. These indicative areas are shown on drawing no CEC/PA/001. As previously detailed, the quarantine areas would only be used for the storage of unburnt baled plastic on a temporary basis to aid fire fighting. The quarantine areas

are open areas located within the overall Site as shown on the above drawing. These areas are surfaced with a mixture of concrete and hardstanding and are uncovered and so would only be used to store materials which would not give rise to pollution. As soon as practicable after a fire incident any materials stored within the quarantine areas would be removed either to within the A frame building or off site.

#### **4.10 Ground Conditions**

All baled plastic waste stored on Site will be within the A Frame storage building ( unless it is stored on the quarantine areas as detailed in 4.9 ) which has a sloped concreted floor leading to a drainage system. The building contains an internal bund with openings for the two main entrances. The building drains to a sealed chamber containing fire fighting water.

Apart from the quarantine areas, the outside areas are only used for access to the building and are clear areas around the outside of the building.

The surfaces ensure that vehicles and plant can move around all areas of the site easily.

#### **4.11 Volume of Water Required**

NRW guidance states that there must be sufficient water supplies available on site to manage a worst case scenario.

At the maximum storage capacity there will be 34 pods each at 600m<sup>3</sup> = 20,400m<sup>3</sup>

The NRW guidance states that 300m<sup>3</sup> will require a water supply of at least 2,000litres a minute for a minimum of 3 hours.

Therefore 20,400m<sup>3</sup> will require 136,000litres per minute = 24,480,000litres over three hours. This equals 24,480m<sup>3</sup> of water.

The layout of the building has been designed to place the storage pods into three separate sections. There is a separation distance of over 10m between these three areas.

The worst case scenario is, therefore, likely to be that the largest central area of pods is on fire. This consists of 16 pods at 600m<sup>3</sup> = 9600m<sup>3</sup>.

9600m<sup>3</sup> will require 11,520,000litres over three hours. This equals 11,520m<sup>3</sup> of water.

#### **4.12 Firewater Management**

In the event of a fire at the storage Site firewater run off will be initially contained within the building. There is a concrete floor and bund wall around

the inside of the building which will contain firewater within the building and within the internal drainage system and chamber under the building.

In order to prevent firewater escaping from the building via the two main entrance doors, the site will be equipped with inflatable booms and sand bags which will be deployed to contain water used in tackling a fire. Pedestrian fire exit and access points from the building will be outside of the internal bund wall so firewater will not be able to escape from this area.

The building is 190m x 60m and has a 1m bund = 11,400m<sup>3</sup> containment capacity plus sub floor drainage and floor slope of in excess of 1,800m<sup>3</sup>. In addition there is the capacity via the underground chamber to remove water from the building for recirculation or for disposal off site.

This would provide sufficient containment for the proposed worst case of the middle section of stored pods being on fire.

As firewater is used for fire fighting from the chamber below the A frame building firewater will flow back into this system. If the entire building drainage and bunding capacity were overwhelmed fire water would be allowed to escape to the drainage system external to the building. As this area discharges via a system of penstock isolation valves to surface water then the penstock valves would be closed in the event of a fire to ensure containment of firewater within the site. This water could then be re-circulated for use in tackling the fire if the Fire Command approved its re-use.

A fire protocol/procedure would also be in place to provide mobile tankers for removal of fire water from the drainage systems both inside and outside of the building. This method of further firewater management would add a third measure of containment, ie mobile removal and treatment at an off-site water treatment facility. As a result of the above measures surface and ground water receptors will be protected and should not be impacted in the event of a fire.

All firewater will be classed as contaminated so will ultimately need to be tankered off Site for disposal at a suitable facility.

## **5 ACTIONS IN THE EVENT OF A FIRE**

### **5.1 Actions on Finding a Fire**

In the event of a fire, close the Site to vehicles and only allow essential personnel onto the Site.

In the event of a minor fire that can be dealt with using on Site extinguishers and hoses this will be undertaken by Site staff BUT ONLY IF CONSIDERED TO BE SAFE TO DO SO. After the fire has been extinguished the Site manager shall investigate and record the causes of the fire and issue instructions to prevent a recurrence.

In the event of a larger fire, where Site staff attempt to extinguish it or start to move non burning material to a quarantine area in order to reduce the risk of fire spread, the Fire Service and Natural Resources Wales shall be called. The key action in this case will be to prevent the spreading of fire whilst maintain the safety of site operatives.

The management shall close the Site to incoming materials and inform the following if needed ( this may depend upon the time of day, wind direction and advice from the Fire & Rescue Service and Natural Resources Wales ) :-

Nearby businesses  
Adjacent offices  
Hospital  
Residential properties  
School  
Adjacent industrial area  
Welsh Government for the A55  
Network Rail for railway

The surface water penstock valve will be closed.

When the fire service arrive they will take over control and direction of staff to use plant and equipment as required. Staff will show the fire service the location of the drainage system to allow for water recirculation.

Staff will assist wherever possible but must maintain a safe distance from the fire and only work under the instruction of the Fire & Rescue Service Command.

For a fire when the site is closed the Fire Box will contain contact details for the site owner and management. The owner/ manager shall attend the scene and assist the fire service where possible and contact the list above.

## **5.2 Actions After a Fire**

An assessment will be made, by the management, of the effects of the fire on infrastructure and the pollution risks from the site. If water has been used to fight the fire the manager shall arrange for the removal of contaminated water to a suitably permitted facility.

Arrangements will be made for wastes that need to be moved for off site disposal.

If there is no significant damage to the Site infrastructure the Site shall re open in consultation with NRW.

Where essential repairs are needed to any pollution control measures, the Site will remain closed until the repairs are completed.

Waste will be removed from the quarantine areas.

A thorough investigation shall be conducted as to the cause of the fire and appropriate measures put in place to ensure that the risk of further fires is reduced.

## **6.0 Training and Competence**

All staff shall undergo relevant training, covering all relevant aspects of Fire Prevention and awareness etc.

All staff also undergo New Starter training by the supervisor of the work area, this includes, specific, environmental issues associated with their job, emergency procedures etc.

Toolbox talks at various periods include environmental sessions.

In addition to the above, staff have various associated environmental training as part of existing courses & qualifications i.e. Operators Competence Certificate, etc. The site supervisor will be WAMITAB Level 4 qualified.

Refresher training is given on an annual basis.

Any staff undertaking monitoring, recording and reporting for the purposes of fire control will be suitably trained and instructed as to their duties.

Fire marshals have been nominated and trained.

Regular fire drills are conducted.