HARTLEPOOL FIBRE SORT RECYCLING FACILITY

FIRE PREVENTION PLAN

Prepared for: Ward Recycling Ltd

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1.0 INTRODUCTION

1.1 Report Context

Ward Recycling Limited has appointed SLR Consulting Limited (SLR) to prepare a Fire Prevention Plan (FPP) in support of a submitted application for a new environmental permit for a fibre sort recycling facility at Windermere Road, Hartlepool under the Environmental Permitting (England and Wales) Regulations 2010 (as amended) – EA Ref. EPR/GB3403KG/A001.

This report follows the Environment Agency (EA) guidance for FPPs[1] and details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The information contained within this FPP aims to meet the 3 main objectives of the EA FPP Guidance:

- Minimise the likelihood of a fire happening;
- Aim for a fire to be extinguished within 4 hours and;
- Minimise the spread of fire within the site and to neighbouring sites.

Under current fire safety legislation[2], a responsible person must carry out, or appoint a competent person to carry out, a suitable and sufficient fire risk assessment of the risks of fire to employees and others who may be affected by the site. This risk assessment is included as Appendix 3.

1.2 Site Location

The facility is located off Windermere Road, within Longhill Road Industrial Estate, Hartlepool. The National Grid Reference (NGR) for the site is NZ 5122 3082.

The site is surrounded by industrial/commercial units with the industrial estate to the east and north of the site. Residential properties lie approximately 250m to the west beyond the A689, and a closed landfill site borders the site to the south. The surrounding land-use and receptors within 1km are identified on **Drawing 01** with a summary detailed in Table 1-1 and 1-2.

The immediate surrounding land use is described in further detail below:

Residential properties

The closest residential properties, off Stockton Road, lie approximately 340m to the west of the site, across former industrial land and beyond the A689 Belle Vue Way. Approximately 425m east are properties in the northern part of the Seaton Carew housing estate.

Areas for Public and Recreational Use

Walking paths extend across the former closed landill site to the south of the site with recreational ground adjoining the rear of the nearest school (600m west) and Carr House Sands beach approximately 1.5km to the east. The nearest golf course is Seaton Carew Golf Club 2.3km southeast of the site.

Industrial and Commercial Premises

Industrial/commercial premises or unoccupied former use industrial land lie adjacent to the

[1] *Environment Agency Fire Prevention Plans: Environmental Permits, 04 May 2018*
[2] *Regulatory Reform (Fire Safety) Order 2005*

Table 1-1
Surrounding Land Uses

Boundary	Description
North	Windermere Road; Industrial/commercial premises including the J&B Recycling plant sited within the Longhill Road Industrial Estate
East	Industrial/commercial premises including Sims Metals, Dark Slide Automotive and Niromax Group sited within the Longhill Road Industrial Estate. A mainline railway borders the eastern boundary of the industrial estate. Beyond this are residential properties (approximately 450m) and the coastline (approximately 1.5km).
South	A Hartlepool Borough Council closed landfill site occupies the length of the southern boundary beyond which lies the Tees Bay Retail Park (approximately 300m).
West	Undeveloped area of Ward Recycling site and adjacent unoccupied former industrial use land; A689 (Belle Vue Way) is approximately 280m; Belle Vue residential housing estate including The Crafters Barn craft centre (approximately 340m).

site in all directions.

Educational premises

The closest school is St. Aiden's Church of England Memorial Primary School, approximately 650m to the west of the site.

Major Roads and Transport Links

The site is accessed directly off Windermere Road. The nearest railway line is approximately 400m to the east of the site. The wider local road network is illustrated on **Drawing 01**.

1.3 Geology

British Geological Survey (BGS)[3] geology mapping for the area indicates that the proposed development site is underlain by superficial Devensian-Diamicton Till. The bedrock beneath the site comprises Sherwood Sandstone. The National Soils Institute – Soilscapes website[4] describes the regional soils to be slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

1.4 Hydrogeology

Mapping provided by the EA[5] indicates that the site lies outside of any Groundwater Source Protection Zones (SPZ).

EA mapping indicates that the sandstone bedrock deposits beneath the site are designated as a Principal aquifer. The superficial deposits are designated as a Secondary (undifferentiated) aquifer.

[3] *http://mapapps.bgs.ac.uk Accessed December 2018*
[4] *http://www.landis.org.uk/soilscapes Accessed December 2018*
[5] *https://maps.environment-agency.gov.uk Accessed December 2018*

EA Groundwater Vulnerability Mapping identifies that the site is located within a Principal Aquifer but assigns no specific groundwater vulnerability.

1.5 Hydrology

There are no watercourses located within or in the immediate proximity of the site. An unnamed partially culverted watercourse is located approximately 700m to the east-south-east of the site. This watercourse flows in a north-easterly direction through Seaton Carew housing estate and discharges into the sea at Carr House Sands. Approximately 460m southwest of the site are a series of SUDs ponds associated with the Tees Bay retail park. These discharge to the above unnamed watercourse.

There are no other hydrological features within the vicinity of the site.

Given the presence of an automated deluge system with containment shuttering (see Section 3.0), it is highly unlikely that fire water produced onsite would not be retained. Furthermore, given the distance of the unnamed surface water feature from the site, the obstructions within the pathway and the presence of surface water drains would intercept the flow of any water leaving site.

The EA website confirms that the site does not lie within an area at risk of sea/tidal flooding.

1.6 Ecology

1.6.1 European/International Sites

Searches conducted on the Multi Agency Governmental Information for the Countryside (MAGIC) Website[6] indicate that the site is not located in close proximity to any European and nationally designated sites.

There are no terrestrial designations within 1km of the site with the nearest being applicable to the marine environment located approximately 750m due east of the site, namely:

- Mudflats and sandflats not covered by seawater at low tide (SPA); and
- Teesmouth & Cleveland Coast Site of Special Scientific Interest (SSSI).

1.6.2 Other ecological receptors

Searches of the MAGIC website has also confirmed there are none of the following ecological receptors within 1km of the permit boundary:

- Ancient Woodland;
- National Nature Reserves;
- Areas of Outstanding Natural Beauty;
- Registered Parks and Gardens;
- World Heritage Sites;
- Woodland Trust Sites; and
- National Forest.

1.7 Cultural Heritage

Searches of the MAGIC website has also confirmed that there are none of the following within 1km of the application site:

[6] *MAGIC Website: https://magic.defra.gov.uk/MagicMap.aspx. Accessed December 2018*

- National Forest;
- Scheduled Monuments;
- National Trust Properties; and
- Registered Battlefields.

1.8 Receptors

Table 1-2 **Drawing 01** shows the locations of receptors that are considered to be potentially sensitive and could reasonably be affected by a fire at the waste management facility.

Table 1-2
Identified Receptors

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from site boundary (at nearest point)
Identified receptors within 1km of the Environmental Permit Boundary			
Windermere Road and wider local road network	Local Road Network	North	Adjacent
Industrial / commercial units	Industrial	North and West	From 50m
Unnamed Surface water features	Surface water features	South east	120m
Residential properties at Windermere Rd/Kendal Road	Residential	West	350m
Railway Lines	Transport network	East	400m
St. Aiden's CoE Memorial Primary School	Educational	West	550m
Mudflats and sandflats not covered by seawater at low tide	SPA	East	750m
Teesmouth & Cleveland Coast	SSSI	East	750m
Recreational areas / areas for public use including the Carr House Sands Beach & Seaton Crew Golf Course	Recreational	East / South east	From 1.5km

1.9 Wind Rose

Drawing 01 shows the wind patterns over in 2018 as identified by the Leeming meteorological station. The most prominent wind direction is from the west-south-west. Winds from the north and east are relatively infrequent. Receptors highlighted in bold in Table 1-2 above are likely to be affected in the event of a fire as they are located in the path of the prevailing wind.

1.10 Site Type

The site is a former waste processing facility and foundry. The site is currently under development for the proposed materials recycling facility (MRF).

The types of waste proposed to be accepted, processed and stored on site are comprised of paper and cardboard only. The site is seeking a licence to accept up to 150,000 tonnes per annum (tpa) of household, commercial and industrial material for recovery.

The treatment of waste consists of mechanical sorting/separation, screening and in the case of cardboard, automated baling.

The site layout, including waste storage locations have been identified on **Drawings 02 and 03**.

All waste is stored within the confines of the main processing building. No materials are to be stored outside unless in unloaded/pre-loaded vehicles.

Non-conforming wastes will be stored in dedicated quarantine areas separate from other materials within the main processing building for removal from site within 72 hours.

The site does not accept any other waste materials including asbestos or other hazardous wastes.

1.11 Waste Types, Quantities and Storage

The environmental permit application requests for the following types of waste to be accepted on site which are defined as 'combustible materials' in the FPP Guidance:

- 15-01-01 paper and cardboard packaging;
- 19-12-01 paper and cardboard;
- 19-12-02 ferrous metal;
- 19-12-03 non-ferrous metal;
- 19-12-04 plastics and rubber;
- 19-12-05 glass;
- 19-12-07 wood (not containing dangerous substances)
- 20-01-01 paper and cardboard

The site accepts an infeed of approximately 150,000tpa or approximately 500 tonnes per day.

Approximately 6000 tonnes of waste is stored on site at any one time. After processing, wastes are stored on site for approximately 96 hours prior to removal for further reuse.

No hazardous wastes are accepted at the site. The only hazardous materials present at the facility will be bunded fuel and small quantities of greases/lubricants and paints associated with the maintenance of site plant and equipment. These will be stored in secure locations outside the main processing building.

1.12 Site Access

The site is accessed via a gated entrance off Windermere Road to the north of the site.

The closest fire station is Hartlepool Community Fire Station. This is located to the north of the site

Using Google directions and mapping, the distance is approximately 0.8 miles and a journey time of approximately 3 minutes between the site and the fire station.

The site benefits from security fencing located along all boundaries which restricts unauthorised access into the facility.

1.13 Environmental Management System (EMS)

At the time of applying for a permit for the facility, Ward Recycling Limited are compiling an EMS to align with the following applicable standards, registered through the British Standards Institute (BSI):

- ISO 14001 (Environmental Management);
- ISO 9001 (Quality Management);
- BS OHSAS 18001 (Occupational Health and Safety Management); and
- ISO 27001 (Information Security Management).

The above standards form part of the wider Environmental Management System (EMS) that governs operations at this facility. Consequently, the system will comprise all operational procedures for the management of the facility to ensure that all appropriate pollution prevention and control techniques are delivered reliably and on an integrated basis.

[7] *www.maps.google.co.uk Accessed December 2018*

2.0 FIRE PREVENTION MEASURES

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

2.1 Fire Detection and Alarm System

The site will be occupied for up to 20 hours six days a week meaning that operational staff will be present to detect and manage a fire. In addition, and when the site is not occupied, the site is fitted has a modern, fully automated fire management system comprising fire alarms, fitted sensors and deluge sprinklers. The system has been installed in accordance with the operator's insurance firm and complies with BS5839[8] (Part 1, 2013, Category P2/M). This system will notify on-call/senior staff personnel by mobile call or text message of an event signalling detection of a fire or activation of the deluge system. Further details are included in Appendix 2.

In summary, the management system comprises a fully automated Tyco full water deluge system which includes smoke and flame detectors to detect the low frequency flickering infra-red radiation emitted from open flaming fires. The detectors can determine a fire at a range of up to 40m.

The fire management system is to be subject to annual servicing to ensure it remains fit for purpose.

2.2 Inspections and Amenity Monitoring

The site is continuously inspected by operatives throughout the working day. Daily and weekly monitoring is recorded in the site diary.

Material stockpiles are visually inspected throughout the day and all abnormal findings are logged in the site diary. This will be undertaken as a minimum twice in each working day namely in the morning and the afternoon.

All staff are trained in how to identify fires and fire hazards on site.

The site undergoes regular cleaning to prevent a build-up of debris on site and floors are swept at the end of each working day.

2.3 Pile Management

Stockpile sizes and waste storage times will not exceed those as stated within the current EA FPP guidance. Table 2-1 shows the list of combustible wastes accepted on site with their associated storage times and bay sizes.

All processed and quarantine storage bays are designed at 6.0m high but will not be filled higher than 4.0m with the surplus height included to limit the spread of a fire. The maximum volume of waste each bay can hold at any one time is detailed in Table 2-1.

Within the main building, infeed waste is supplied by vehicles entering via the southern entrance. These will deposit waste directly onto the concrete floor surface into one of three piles with each pile aligning with the respective entrance door. These piles will be managed by a 360 grab operator who will load the MRF and in doing so ensure that each one does not exceed the permitted 750m^3 volume. In the event of an operational issue which prevent infeed material being loaded into the MRF, vehicles will not be unloaded and will be held within the vehicle refuge are in the north-eastern part of the site (see Site Layout - **Drawing 02**).

[8] *Part 1 Fire detection and fire alarm systems for buildings – Part 1: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises is a standard published by the British Standards Institution.*

Table 2-1
Waste types, storage time and bay sizes

Waste Type	Maximum Storage Time	Bay/Stockpile/Container		
		Length (m)	Width (m)	Volume (m^3)
Paper[9]	6 weeks	15.0	7.5	506.25
Cardboard	6 weeks	15.0	7.5	506.25
Residual Waste[10]	2 weeks	4.5	1.67	12.2

Additionally, each of the three infeed piles will remain separated from the next by a minimum distance of 6.0m to minimise the risk of fire spread. These piles will not exceed 200 tonnes. All infeed deposits will be cleared from the floor at the end of each working day with no material left unprocessed during non-operational hours.

Unacceptable materials will either be reloaded back on the incoming vehicle or placed in the designated quarantined bays within the infeed area. These bays will conform to the sizes as detailed in Table 2-1 however goods will be removed from these and sent back to the producer or to an alternative disposal route at the earliest opportunity.

Post-processing, finished goods will be stored in bays in the northern part of the building. Each of these bays will conform to the dimensions as detailed in Table 2-1 and effective stock rotation measures applied across the respective bays to ensure material is removed from site to comply with the quality criteria for onward reprocessing[10].

The proposed stock pile management methods will keep biological heat rise to a satisfactory level thus reducing the risk of spontaneous combustion. As detailed in this FPP, the Site Manager is to carry out daily checks which will specifically include inspections of each the storage bays. This ensures that the site does not reach a level of overcapacity in respect to storage. Although it states in Table 2-1 the maximum storage time for waste stored in bays is 6 weeks, this is the maximum timeframe; waste will typically be removed from site after 96 hours.

No waste material will be stored outside of the main building. It should however be noted that in the event of a fire it is an option for operatives to remove and relocate the residual waste skip outside using the on-site forklift. The location of the skip relative to the eastern boundary door has been specifically considered to provide quick access for the forklift to reach and move the skips in the event of a fire. It is only expected that this would be necessary if it is this container which is on fire and that the deluge system has not already been activated.

It is proposed that a fire risk assessment will be carried out by the local Fire Service on completion of the building works and prior to the site being operational. Given the management and mitigation measures incorporated into the design and operation of the site, it is expected that this will determine that waste operations at the site are 'low' risk to people.

[9] *Material will be stored for a maximum of six weeks as the paper is no use in the subsequent processing processes after it has reached 12 weeks of age as yellowing occurs.*

[10] *Provisional dimensions based on utilising a 16 yard skip.*

Stockpiles of unprocessed and processed are managed to minimise self-combustion using the following methods:

- stockpile storage times are minimised on site;
- stockpile sizes are minimised where possible;
- stored materials are rotated;
- material is stored in its largest form prior to processing; and
- hotspots are detected and controlled within stockpiles by routinely turning stockpiles.

Given the proposed rapid turnover of waste stockpiles, the use of a thermal probe is not considered necessary as there is not time for sufficient heat to be generated within stockpiles to start a fire.

Under normal operating conditions, combustible materials on site are stored for up to 96 hours. The following measures are implemented on site, as appropriate, to reduce self-combustion:

- separation of materials;
- isolation of combustible materials;
- restricting storage times; and
- cooling materials through managed ventilation.

Stockpile sizes are maintained at or below the maximum sizes as stipulated in Table 2-1 through the use of visual aids. Markers will be drawn onto bay walls / floors to indicate approximate maximum stockpile sizes. Ward Recycling will also run daily stock reports which will confirm the tonnages stored on site.

2.4 Management of Hotspots within Stockpiles

With best endeavours, the site does not store waste (destined for further recovery) for more than 96 hours. As a result, the potential for stockpiles to develop hotspots is highly unlikely.

All stockpiles are located within the building. No waste material is to be stored outside the building.

In order to ensure stockpiles are sufficiently rotated and waste storage time is minimised, stockpiles are rotated with every new waste. Prior to the deposit of newly processed waste within any stockpile, the existing bay is either emptied or the existing stockpiled waste is moved forwards (and therefore turned) to allow the new waste to be deposited at the back of the bay. Typically, all waste on site is not stored for more than 96 hours; therefore, on a daily basis (depending on loads/waste types accepted) stockpiles are moved consistently over this period of time. For this reason there is no specific probe monitoring of the bales proposed,

To avoid compaction which may contribute to a build-up of heat within the pile, wastes are not driven over by onsite plant. Additionally, wastes are removed off site in a strict rotation with material always taken from the front of a stockpile first.

Site operatives will undergo training on the management of stockpiles.

Stockpiles are visually inspected throughout the day and findings logged within the site diary at the start and end of each working day as a minimum. Procedures for stockpile management are detailed within the EMS for the facility.

2.5 Plant and Equipment on Site

The following items of plant and equipment are held on site however this should not be considered a fixed list as is subject to change once the site is operational:

- 1 x Bollergraff Sort MRF with picking station (fixed plant);
- 1 x Cardboard baling plant (fixed plant);
- 2 x Loading Shovels;
- 1 x 360 grab with bucket;
- 1 x forklift and/or tele-handler; and
- 1 x 800KVA Backup Generator

The MRF is powered by electricity and maintained in line with Ward Recycling's maintenance procedure included within the site EMS. In summary, Ward Recycling perform daily checks on all equipment and record findings in the site diary. All servicing and maintenance is carried out by third parties as per manufacturer's instructions.

Additional plant and equipment including, but not limited to: water bowser, spray equipment and road sweeper which are made available as and when required.

All mobile plant is fitted with fire extinguishers.

Initially during non-operational hours all mobile plant will temporarily be stored within the infeed area where there will be no unprocessed material present and hence minimal risk of ignition. This will change in the near future with all mobile plant being stored in the adjacent plant store building once this has been constructed (planning permission for which is pending from Hartlepool Borough Council at the time of the EA permit submission).

Firefighting equipment at the facility consists of but is not limited to:

- Multiple water and CO_2 fire extinguishers (as detailed in Section 3.0 of this FPP);
- Tyco fully automated deluge system comprising a 125,000 litre capacity tank (filled from the mains water supply);
- Automated guillotine shutters for deluge water containment;
- Fire hydrant located on the south-eastern boundary (w/150mm nominal diameter);
- Drain mats (6x neoprene drain mats); and
- Spill kits.

All items of plant and equipment used on site are maintained in accordance with manufacturer's recommendations. All information relating to current plant and firefighting equipment is contained within the EMS. The integrity of all firefighting equipment is checked on a monthly basis and recorded in the monthly checklist.

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

2.6 Training

All operational staff are trained on how to prevent fires on site, how to identify fire risks and how to spot fires on site. Site staff are given a site-specific induction on fire safety and what to do if a fire should break out on site.

There is always at least one trained fire marshal staff member on site at any one time.

All staff and contractors working on site are made aware and understand the contents of the FPP and the procedures that are in place in the event of a fire on site.

2.7 Security measures

The site is fully enclosed. New 2.4m high Masterview Twin Wire Panel fencing has been installed along the entire northern boundary of Windermere Road. The remainder of the site comprises 2m post and mesh topped with barbed wire sections of which (eastern boundary) are mounted on the boundary bund.

The site also benefits from lockable site entrance gates and an extensive modern CCTV system.

2.8 Fire Sources and Prevention Measures

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

Table 2-2
Fire Sources and Preventative Measures

Cause	Preventative Measure
Arson and Vandalism	The site has a number of security measures in place to limit the likelihood of arson or vandalism. These include 2.4m high perimeter fencing around the entire site. lockable site entrance gates, regular inspection and maintenance procedures and a visitor sign-in procedure. The site benefits from a security office, intruder alarm and extensive 24/7 recorded CCTV coverage. The alarm is monitored by an external security firm who will call the sites key holder and Police in the event of a breach. In the event of a breach of security at the site, the cause will be investigated and appropriate mitigation measures implemented. This will be recorded in the site log. Records maintained will include inspections and maintenance of security fencing and gates, breaches of security, investigations and actions taken.
Self-Combustion	Effective stock management and good housekeeping practises limit the likelihood of the self-combustion of materials stored on site. As such, the site has waste acceptance and stock management procedures which are followed by all staff and enforced by site management. These are detailed in Section 2.4. Red diesel is stored in a 2000 litre bunded tank alongside the building to the west of the main shed. Lubricants and oils utilised on site are stored in a dedicated container located to the east of the shed. These will be relocated to a dedicated building on the eastern boundary upon construction. Oils and fuel are transferred to dedicated tanks and vessels and are stored out of direct sunlight and away from heat sources. All fuel and oil is stored at least 6m from any combustible waste.
Plant or equipment failure	Plant and equipment are maintained in accordance with the manufacturer's recommendations as recorded in the EMS. Plant and equipment are operated in accordance with the manufacturer's instruction manuals. Instruction Manuals for plant and equipment are held either on site or online if a hardcopy is not available from the manufacturer. No industrial heaters are utilised on site. A heater is provided in the mess room and benefits from clear signage asking all site operatives to switch off when not in use.

	The Site Manager ensures the heater is switched off at the end of the working day. This is located in a separate building a considerable distance from any combustible waste. All plant is fitted with reverse fans and sealed engine bays to prevent dust or fluff build up. Plant is always subject to blow down at the end of the day to remove any dust or fluff accumulations from waste processing operations by an air compressor. Induction training and refresher training is provided to staff in the safe operation of plant and equipment relevant to their role, in accordance with the EMS. Inspection of plant and equipment is undertaken on a daily basis in line with a procedure included in the EMS to check for faults and ensure appropriate safeguards are in place. The EMS procedure also covers general housekeeping and cleaning of plant and all equipment on site. At the end of the working day, plant is stored as per Section 2.5 above. The site finishes processing waste half an hour before the end of the working day to ensure that the site is effectively cleared down and the mobile plant is allowed to cool down. In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is shut off in a safe manner and not used until the equipment can be repaired or replaced. All site vehicles are fitted with fire extinguishers.
Electrical faults (Including Damaged or exposed electrical cables)	Regular safety checks and daily site inspections are recorded in the site diary. All buildings electrics will be fully certified by a qualified electrician and regular PAT testing of all portable electrical appliances will be carried out.
Naked Flames	No naked flames are permitted on site unless operating under a permit to work or within the designated smoking area.
Discarded smoking materials	Smoking is only permitted in the designated smoking area on the northern boundary of the site. This is located at a considerable distance from any combustible waste.
Hot Works	All hot works are undertaken under a permit to work system which includes a 60-minute fire watch by a competent person at the end of the works. No hot works are undertaken by staff unless they are trained and have the relevant permit to work. All hot works are conducted in a cleared area of the site at least 6m from any combustible wastes. A site operative performs a continuous fire watch during the hot work and for a minimum of 60 minutes after the work is completed.
Hot Exhausts	Vehicles are turned off when not in use. Proactive management is made to the high-risk time for hot exhausts (one hour after switch off when dust can settle on hot surfaces) and wherever possible vehicles are given time to cool down prior to site staff leaving site at the end of each day. Flammable/combustible materials are stored in the designated areas away from frequent vehicle movements. Staff and visitor parking is currently located to the east of the site. All vehicles are requested to reverse park against the wall, to remove any risk from hot exhausts. This location will change to the northern site boundary immediately adjacent to Windermere Road once the new office block has been constructed (planning permission pending at time of EA permit submission).

Open Burning	Burning is not permitted on site. If any fires are observed at any site in close proximity to the facility, Ward Recycling will report the incident to the Fire Service and Police.
Reactions between incompatible materials	Strict waste acceptance procedures implemented on site ensure that only permitted wastes are accepted. Unauthorised wastes are quarantined, and incompatible wastes are separated in the MRF. Where quarantined waste presents a fire risk it will not be retained on site.
Neighbouring sites	The site is located within an industrial park. Industrial premises are located adjacent to the north and west boundaries. The site is owned by Ward Recycling however the entire site is not used with a portion to the southwest excluded from the environmental permit. Employees remain vigilant at all times and report activities or behaviour which could represent a fire risk from neighbouring sites to the Site Manager. The manager will then take action as appropriate to address the identified risk.
Sparks from loading buckets	The surfacing within the main shed is constructed from fibre entrained reinforced concrete so as to prevent sparking from contact with metal objects. Furthermore, all machinery loading buckets are fitted with nylon/rubber blades for the same reason.
Incompatible Wastes (Including reactions between incompatible materials)	All wastes arriving onsite are checked in accordance with the waste acceptance procedure within the standard operating procedure to ensure no materials of unknown composition are accepted at the site. Waste oils and fluids collected from vehicles are removed from site by third party maintenance operatives. Spillages and leakages of fuels and oils are prevented through the application of measures detailed within the Accident Management Plan which is kept on site. In the event, of a leak or spill of fuels or oils, the procedure within the Accident Management Plan is strictly followed.
Hot loads deposited at site	No burning, reactive / reacting or visibly hot (producing steam or heat) loads are accepted on site. Instructions are given to customers to ensure no hot loads are accepted on site. Should a hot load be deposited on site, it will immediately be removed to the dedicated quarantine area and removed from site the same day to a suitably licenced facility for disposal.

3.0 FIRE MANAGEMENT

The locations of all fire extinguishers on site are illustrated on Drawing 3. Carbon Dioxide (CO_2) dry powder and water extinguishers are provided at the site – at the following locations:

1. Main MRF Shed: 4 x 6kg CO_2 dry power extinguishers located by the south doors on the east elevation (x1), next to the cardboard baling unit (x1) and within the MRF picking station area (x2); and 4 x 9L water extinguishers by both main west (x2) and main east (x2) doors - all being located near the fire alarm call points.
2. Security Office/Weighbridge: 1 x 6kg CO_2 dry powder and 1 x 9L water extinguisher located at the site entrance office.
3. Temporary Office: 1 x 6kg CO_2 dry powder and 1 x 9L water extinguisher located inside the entrance. These will be relocated to the new office building on completion.
4. Smoking area: 1 x 9L water extinguisher.
5. All mobile plant will carry a CO_2 dry powder fire extinguisher.

The site benefits from having a 125,000 litre water tank incorporated into the site design as part of an automated deluge valve protection system. The tanks are fed under gravity and pump water into the main shed through independently powered diesel pumps (not requiring mains power). Should the Fire and Rescue Services utilise these tanks then the hoses and pumps required for such water supply would be brought on site by the Fire Service.

The closest fire hydrant is located approximately 60m from the southern entrance/exit doors of the main shed on the south east boundary of the site, on Windermere Road, as illustrated on **Drawing 02**.

The site consists of the waste reception building, yard area and infrastructure including site office and weighbridge. The facility benefits from an engineered containment system comprising of impermeable concrete surfacing throughout the building.

All waste is stored and treated on impermeable surfacing inside the building.

A BS5839 Part 1 approved fire detection system that looks for flame within the reception building has been installed. Call points are provided at each exit with audible and visual alarms and smoke detection sensors are located in all buildings on site. All fire systems are checked on a weekly basis. The site carries out quarterly fire drills. The site benefits from a maintenance check on a regular (minimum annual) basis.

The site will not continue to accept waste if there is an active fire on site. Waste will be diverted to a nearby suitably licenced site and, if possible, waste producers will be notified in advance to prevent delivery vehicles arriving on site.

The main reception building is constructed to the appropriate standards. Should fire compromise its stability or integrity the building and site will be immediately evacuated.

3.1 Fire Assessment

Prior to the facility being fully operational a Fire Risk Assessment will be prepared with the assistance of Cleveland Fire and Rescue services. The assessment will be incorporated into the operational FPP.

3.2 Fire Drills on Site

A fire drill will be carried out and documented on a quarterly basis. This FPP will be implemented and all fire management equipment will be tested (*i.e.* placement of drain mats, deployment of booms *etc.*).

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

3.3 Containing and Mitigating Fires

The site benefits from a highly sophisticated fire suppression (deluge) system. It is the operators understanding from the manufacturer (Tyco) that this system has been previously accepted by the EA for installation at other waste facilities. Further details of the system are included in Appendix 2 and a summary is detailed as follows:

- the system is designed to protect high hazard areas containing a severe fuel hazard with a high heat release rate by bringing a large number of open sprayers into action simultaneously in the event of a fire;
- the system comprises of a control valve, a sprinkler operated detection system and a dedicated water supply system. When triggered, it supplies water to a small number of nozzles located within its zone of protection.;
- the mechanism of detecting a fire is the use of a sprinkler detection line permanently charged by air. In the event of a fire, the sprinkler detector heads directly affected by the fire will operate. The immediate drop in air pressure within the detector line releases the pressure against the Deluge valve diaphragm unit causing the Deluge Valve to open and discharge water through all the open water spray nozzles to rapidly control and extinguish the fire;
- the system provides a 30-minute suppression time, to dampen any fire sources before the Fire Service arrive;
- the nozzles use a high flow rate to obtain the necessary wetting;
- due to the high flow required a dedicated 125,000litre tank is installed which benefits from a mains water feed; and
- there is a test override to make sure that the system starts in a simulated fire situation and a system manual shut-off should it be required.

An up-to-date site plan is on display in the site office and details:

- site layout;
- waste storage arrangements;
- firefighting equipment locations (Pollution Control Equipment);
- fire detection equipment; and
- Personal Protection Equipment (PPE).

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

3.4 Emergency Contact Details

An emergency contact sheet is included in Appendix 4. In the event of a fire the following procedure will be followed:

- the Site Manager or individual nominated by the Site Manager will locate the emergency contact list included in Appendix 4;

- in the event of a large fire, the Fire Service will be contacted first on 999;
- the Site Manager or individual nominated by the Site Manager will telephone each of the local businesses included in Appendix 5, followed by the contaminated fire waters and sewerage services if appropriate to do so; and
- the EA incident hotline will be contacted once the situation is under control.

3.5 Site Procedures

3.5.1 Small Fire

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

- a fire or area of smouldering waste is not dealt with in-situ, a loading bucket is utilised to pull the affected waste into the open and away from any further waste that could become alight on contact;
- depending on the size / nature of the fire the waste is either:
    - Extinguished immediately[11] utilising the fire extinguishers and / or hoses; or
    - Moved to the dedicated quarantine area and extinguished[12] utilising hoses.

Once a small fire is dealt with the remaining pile is immediately visually inspected by site operatives for signs of whether a fire / smouldering waste still remains within the waste pile. The same procedure is implemented where this is the case.

3.5.2 Uncontainable Small Fire or Large Fire

The following procedures are in place on site that will be followed in the event of a small fire becoming uncontainable or a major fire onsite;

- the Site Manager, Fire Service and EA will be notified immediately;
- if possible (and it is safe to do so) skips on site will moved away from sources of fire by a hook loader vehicle to prevent the fire from spreading to unburnt waste;
- if possible, surface water drains will be blocked with drain mats, to prevent the ingress of the firewater;
- if possible, waste that is unburnt will be dampened down to prevent the fire from spreading further;
- if possible, unburned material will be separated from the fire using heavy plant; the burning area will be isolated and attempts will be made to extinguish the fire utilising the onsite fire extinguishers if safe to do so; and
- the site and buildings will be evacuated.

3.6 Fire waters

The shed has the benefit of impermeable surfacing throughout. If the deluge system is triggered, all water will be contained within the shed building and require removal through over-

[11] *Should a single item of the waste stream be alight, and the fire is well contained, then the waste will be doused/use of extinguisher as it is pulled from the waste pile. The burned / fire- damaged portion is then removed to the quarantine area and the remaining waste returned to the pile.*

[12] *If the fire is not easily contained to a single item, then the obviously alight portion of the waste will be removed to the quarantine area.*

pumping to sewer. All roof and site surface water will drain to the surface water drainage system.

Waste Reception (MRF) Shed (Primary Fire Water Containment Facility)

There is no run-off generated under normal site operating conditions. With the exception of roof guttering, there is no drainage from the shed linked to the foul/combined sewer system. In the event of a fire, the automated deluge system would operate and activate guillotine shuttering around all doors to prevent the release of fire waters to the surrounding site and the associated drainage system. This measure affords the primary method of firewater containment.

External Yard Area (Secondary Fire Water Containment Facility)

Clean runoff from external hardstanding and roof areas drains to a foul/combined sewer. The site drainage system is illustrated on **Drawing 02**.

In the event of a fire, and the fire waters can no longer be contained within the building (in the highly unlikely event that the whole building catches fire), action will be immediately taken to prevent potentially contaminated firewater from entering the site drainage system. Drains will be covered with mats and booms will be placed around the site to prevent the release of fire waters outside the boundary of the site. These secondary measures, in addition to primarily containing all fire waters within the building are expected to prevent the release of fire waters from the site.

The drainage system on site connect to the foul/surface water drainage system located on Windermere Road. Therefore, there is no risk of the release of fire waters to the nearest (unnamed) watercourse as detailed in Section 1.5.

Sewerage services are provided by Northumbrian Water. The sewage undertaker will be notified as soon as possible in the event of a fire. An emergency contact sheet is included in Appendix 4 which contains contact information for local businesses, the sewage provider, the EA incident hotline *etc.* However, the firewater containment and drainage prevention measures described above will ensure that there would be no releases to sewer until such time that the fire is extinguished and sewerage undertaken has been notified and a programme for controlled release made.

Firewater Calculations

Based upon the FPP guidance firewater calculations, it is estimated that approximately 610,236 litres of water would be required to put out the largest combustible stockpile on site[13].

Sources of water available onsite are:

- 1 x 125,000litre deluge tank connected to mains water;
- 1 x main fed fire hydrant (w/150mm nominal diameter approximately 40m east of the main shed); and
- On board water supply from Fire and Emergency Service vehicles.

The above sources of water are considered sufficient to provide the quantity of water deemed to be required by the EA's FPP guidance.

During a fire, it is not anticipated that 610,236 litres of water will run off the waste. Considering absorption of firewater by waste and evaporation as part of the firefighting process[3] it is

[3] Assuming 25% water absorbed and 50% evaporated. Assuming most water hitting the target area will be evaporated with

estimated 152,559 litres of water would require containment, this equates to 152.5m^3. The area of the processing shed is 19,250m^2. The guillotine shutting doors act to prevent any water from escaping the processing shed, therefore the 152.5m^3 of water can be easily contained at a depth of no more than 1cm (19,250m^2 x 0.01m = 192.5m^3).

Should the release of firewater from the site be of an issue during firefighting or after the fire is extinguished, action will be taken to rectify the situation immediately, including the use of road sweepers and bowsers. All remediation action will be recorded and advice sought from the EA as necessary.

Water used in the management of a fire on site will in the first instance be sourced from the onsite water tanks, as shown on **Drawing 02.** Should insufficient water supplies be available from the tanks, or if the Fire Service are called to site, then a connection will be made with the mains water supply. The water hydrant is illustrated on **Drawing 02**.

The sewerage provider for the site is Northumbrian Water.

3.7 Management after a Fire Event

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

1. A small and containable fire that can be dealt with in-house using suitably trained staff and firefighting equipment located on site: The fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this Fire Prevention Plan and the site's EMS as required.

2. A larger fire that requires the presence of the Fire Service: If the site operatives have been told to evacuate or cease operations by the EA and/or Fire and Rescue Service, the site will wait until told safe to re-enter site and resume operations. The fire will be recorded in the site log, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this Fire Prevention Plan and the site's EMS as required.

Should damage be sufficient to prevent the site from being able to treat and store waste, the site will cease accepting waste and will divert to a suitably licensed facility.

[13] *Based on the maximum 506m^3 waste pile being the largest combustible stockpile on site and it requiring 6.7 litres of water per cubic metre to extinguish. 6.7 * 506 = 3390 litres/min. 3390 * 180 = 610,236 litres/3 hours.*

drainage increasing during the damping down operation. These assumptions have been used in previous FPPs which have been accepted by the Environment Agency.

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

3.8 Fire Damaged Waste

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

Quarantine Area

The site benefits from dedicated quarantine bays within the infeed area that are kept clear of other materials at all times. On finalising the construction works at the site, the area currently occupied by the temporary office has been selected as being suitable for a flexible quarantine area in the event of a fire. Any non-compliant waste identified on site will be stored in the infeed bays before removal offsite to a suitably licensed facility as soon as possible.

The location of the quarantine bays is shown on **Drawing 03**. These are compliant with FPP guidance and where a greater volume of material is fire damaged this would be retained within the building and removed offsite to an authorised disposal location at the earliest opportunity. It may be necessary to bring additional skips to the site for this purpose and the EA would be informed in the event of such action.

Any quarantined waste stored in the dedicated or flexible quarantine area waiting for removal from site will be stored in the dedicated bays to prevent the contamination of unburnt wastes at the site. The burnt waste will be removed off site within 24 hours. The dedicated quarantine area will benefit from a 6m clear area around the perimeter to aid separation and management of wastes during an incident.

No waste is stored or treatment of waste is conducted outside. Ward Recycling maintains good housekeeping procedures such that the operational site will be kept clean at all times.

The placement of the dedicated quarantine area is based on the following considerations:

- Retained inside the building where there is fire management protection measures;
- proximity to the building doors to allow for the prompt and direct removal of smouldering, burning or fire damaged wastes;
- away from site drainage – the quarantine area is not sited immediately on drains or manhole covers; and
- neighbouring sites – the location will not affect any neighbouring receptors.

If safe to do so, burning and smouldering waste will be removed to the dedicated quarantine area. The quarantine area will be utilised for depositing and treating burning/smouldering and burnt wastes associated with minor fires on site.

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

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

- when the burning/smouldering waste has been fully extinguished it will be moved to the flexible quarantine area awaiting removal from the site and;
- the waste will be taken off site to a suitably licensed facility within 24 hours.

All site operatives will be trained to following this FPP and all procedures listed in the corresponding sections.

4.0 CONCLUSION

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

- a fire on site;
- a change or review of legislation; or
- if the site is instructed to do so by the EA.

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

The FPP is audited as part of the site EMS review process. See the site EMS for further details.