HARTCLIFFE HOUSEHOLD REUSE AND RECYCLING CENTRE

Environmental Permit Application

Fire Prevention Plan

Prepared for: Bristol Waste Company Limited

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1.0 Introduction

1.1 Report Context

Bristol Waste Company Limited (Bristol Waste) has commissioned SLR Consulting Limited (SLR) to prepare a Fire Prevention Plan (FPP) as part of an Environmental Permit (EP) application for the proposed Hartcliffe Household Reuse and Recycling Centre (HRRC), at 83 Hartcliffe Way, Bristol, BS3 5RN, under the Environmental Permitting (England and Wales) Regulations 2016. Herein the facility will be referred to as 'the Site'.

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, 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. A Fire Risk Assessment will be conducted before operations commence on Site.

1.2 Site Location

The site is situated in Bedminster Down approximately 3km south of Bristol City Centre. The National Grid Reference (NGR) for the site is ST 58141 69727.

The area to the north of the site is predominantly commercial/industrial premises with open ground immediately to the east. The closest residential area of Headley Park is located approximately 70m to the west. Hartcliffe Way (A4174) runs in a north-south direction parallel to the western Site boundary. The EP boundary and the Site's location are illustrated on Drawing 001.

The surrounding land uses, local receptors and cultural and natural heritage receptors within 1km are identified on Drawing 003.

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

Table 1-1
Surrounding Land Uses

Boundary	Description
North	Several industrial premises including Honeyfield Business Park and a depot of the Avon Fire and Rescue Service. This is followed by a residential area.
East	Immediately to the east lies woodland, followed by open ground and the residential area of Knowle West.
South	An area of woodland followed by open ground designated as Pigeonhouse Stream Meadows. This is followed by Greenfield Primary school and the residential area of Headley Park. Further commercial/industrial premises are located beyond this.

[1] Fire Prevention Plans, May 2018.

Boundary	Description
West	Pigeonhouse Stream runs parallel to the western Site boundary followed by Hartcliffe Way (A4174) which runs in a north-south direction. This is followed by commercial premises and the Headley Park residential area. Beyond this, there is Manor Woods Valley which is a local nature reserve.

1.3 Ecology

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

- MAGIC website[2]; and
- Nature and Heritage Conservation Screening Report – provided by the EA with the basic pre-application advice.

1.3.1 Local Nature Reserve

The Manor Woods Valley Local Nature Reserve (LNR) is located approximately 90m west of site's boundary and the Northern Slopes LNR is located approximately 870m north east.

1.3.2 Local Wildlife Site

The following Local Wildlife Sites are located within 200m of the site;

- Pigeonhouse Stream and adjacent meadows;
- Malago Valley; and
- Crox Bottom

1.3.3 Other Ecological Sites

The searches confirmed that there are none of the following within 1km of the site's boundary:

- Ancient Woodland;
- Areas of Outstanding Natural Beauty;
- National Nature Reserves; and
- National Parks.

1.4 Cultural and Heritage

The review of MAGIC revealed that there are three listed buildings within 1km of the site's boundary as illustrated on Drawing 003. The closest of these is the Grade II* listed 'Holy Cross Inns Court Vicarage', which lies approximately 810m south east. Approximately 930m north west of the site is the Grade II listed Robin House and 980m west is the Grade II listed Church of St Oswald.

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

- National Parks;
- Scheduled Monuments;

[2] Multi-Agency Information for the Countryside – Available at: http://magic.gov.uk, accessed June 2020.

- National Parks;
- World Heritage Sites;
- Registered Battlefields; and
- Registered Parks and Gardens.

1.5 Receptors

Table 1-2 and Drawing 003 identify the receptors which are considered to be potentially sensitive and could reasonably be affected by activities at the site.

Table 1-2
Identified Receptors

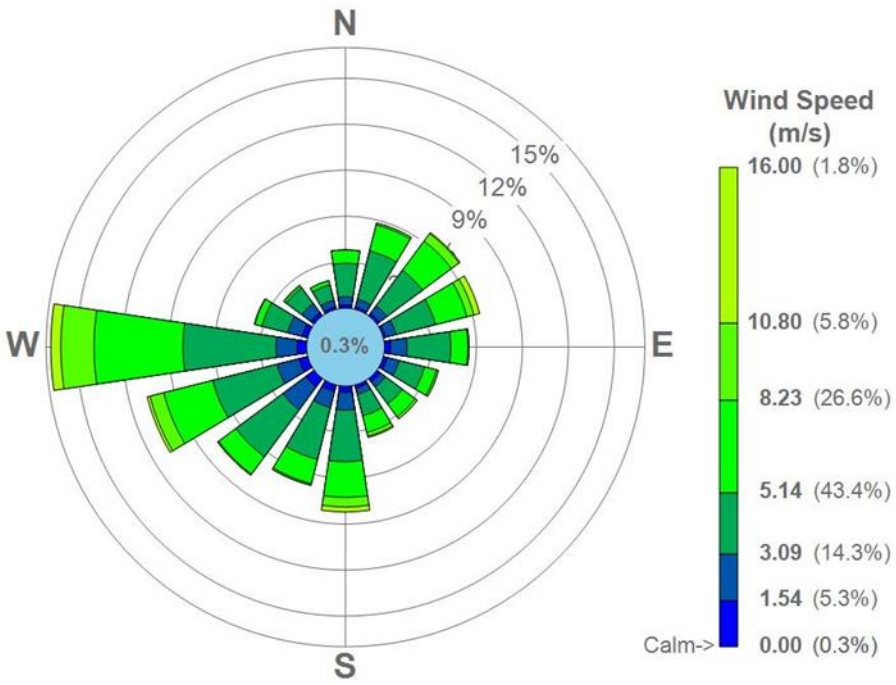
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Local receptors and ecological, cultural and natural heritage receptors located within 1km of the EP boundary as shown on Drawing 003.			
Secondary (B) Aquifer	Secondary Aquifer	N/A	N/A
Pigeonhouse Stream	Surface Water Feature	West	Adjacent
ETM Group	Industrial/Commercial	North	Adjacent
Open Ground	**Open Ground**	**East**	**Adjacent**
Hartcliffe Way (A4174)	Local Transport network	West	20m
Bristol Fish Project	Industrial/Commercial	West	67m
Headley Park	Residential Properties	West	70m
Knowle West	**Residential Properties**	**East**	**90m**
Manor Woods Valley	Local Nature Reserve	West	90m
Wimborne Road	Residential Properties	North	300m
Novers Park	**Recreational**	**East**	**330m**
The River Malago	Surface Water Feature	Southwest	385m
Knowle DGE	**Educational Premises**	**East**	**430m**
Nover's Common	**Open Ground**	**Northeast**	**445m**
Greenfield Primary School	**Educational Premises**	**Southeast**	**450m**
Knowle West Health Park	**Healthcare/Community Centre**	**Northeast**	**490m**
Knowle West Children's Centre	**Healthcare/Community Centre**	**East**	**590m**

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Allotment Gardens	Allotments	Southwest	670m
Headley Park Primary School	Educational Premises	South	700m
Bristol South Rehabilitation Centre	**Healthcare/Community Centre**	**Southeast**	**720m**
Parson Street Primary School	Educational Premises	North	720m
Imperial Retail Park	Industrial/Commercial	South	740m
Cheddar Grove Primary School	Educational Premises	West	790m
Holy Cross Inns Court Vicarage	**Listed Building**	**Southeast**	**810m**
Bedminster Down C Allotments	Allotments	Northwest	820m
Northern Slopes	**Local Nature Reserve**	**Northeast**	**820m**
Railway	Railway	North	845m
Marksbury Road Open Space	**Recreational**	**Northeast**	**870m**
Mendip Broad Walk Football Club	**Recreational**	**Southeast**	**910m**
Robin House	Listed Building	Northwest	930m
Church of St Oswald	Listed Building	West	980m
Cater Business Park	Industrial/Commercial	South	1000m

1.6 Windrose

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

Figure 1-1
Bristol Airport Meteorological Station, 2018



1.7 Site Type

The site is proposed as a Household Reuse and Recycling Centre (HRRC), to accept non-hazardous and hazardous waste directly from householders. The facility will include the operation of a split level Household Recycling (with Canopy) and Re-Use Centre. Treatment on site will only consist of manual sorting, separation, shredding or compaction of waste into different components for disposal or recovery.

Wastes will be bulked up before transfer to a suitably permitted third party facility. Waste in skips may be compacted with mobile plant. Householders will be instructed to segregate waste into the appropriate receptacle.

The proposed site layout has been identified on Drawing 002.

1.8 Waste Types

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

- Paper and cardboard;
- General waste (mixed);
- Plastics
- Bulky wastes;
- Wood;
- Metals;
- Rags and textiles;

- Green waste;
- Tyres; and
- WEEE.

The full waste list is included in the Working Plan, included as Section 6 of this application.

1.9 Site Access

The site is accessed via Hartcliffe Way (A4174) to the west of the site which leads from Pattinson Road. Hartcliffe Way will have a new right turn lane to allow traffic to turn right into the site from the south.

The closest Fire Station is Avon Fire and Rescue Service, located to the north of the site. Using Google directions and mapping[3], the drive time is approximately 1 minute, and it is approximately 0.2 miles between the site and the Fire Station.

Hartcliffe Way is an A-road; therefore, it is designed to accommodate large haulage vehicles and traffic. For this reason, coupled with the close proximity of the Fire Station to the site, the Fire Rescue Service (FRS) would be able to reach the site without difficulty in the event of a fire.

1.10 Environmental Management System (EMS)

The site will be operated in accordance with the Working Plan which is written in accordance with EA guidance: Develop a management system: environmental permits. Bristol Waste are also certificated to ISO14001.

[3] Google Maps, Accessed in January 2021.

2.0 Fire Prevention Measures

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

2.1 Fire Detection

The site will be operational from Monday – Sunday between the hours of 08.00 and 19.00. During this time the site will be constantly manned by operatives who have been trained in the early detection and management of fires. All waste will be stored outside in skips or bays.

Outside of operational hours, automatic fire detection is provided via the flame detection system. The design, installation and maintenance of the system is certified to '*BS EN 54-10: 2002 – Fire Detection and fire alarms systems. Flame detectors. Point detectors'.*

2.2 Inspections and Amenity Monitoring

The site will continually be manned during the working day and site operatives will be asked to remain vigilant at all times and look out for signs of fire. Staff will be trained in how to identify fires and fire hazards on site. Staff will also receive training on the use and selection of fire extinguishers, site evacuation procedures, fire safety and all relevant emergency procedures.

A fire watch will be undertaken at the end of every shift. Where possible, mobile and static plant will be switched off at least 30 minutes before the last person leaves site and the site manager will ensure that an inspection of all waste storage areas is undertaken looking for any signs of fire.

All waste storage areas will be visually inspected throughout the day with all findings logged in the Daily Site Log as a minimum.

The site will undergo daily cleaning using brooms, mobile plant and/or wash down hoses/jet wash to prevent a build-up of debris and dust on site.

Daily and weekly monitoring will be recorded in line with the Working Plan.

2.3 Waste Storage and Quantities

Waste storage on site will take place on impermeable concrete surfacing within skips or bays as illustrated on Drawing 002. Wastes will be bulked up prior to removal from site and waste in skips may be compacted using mobile plant. All waste material will be stored in its largest form.

Waste storage arrangements are shown in Table 2-1 below. The contents of the skips are subject to change as new opportunities to accept different waste types arise. The site layout detailed on Drawing 002 and in Table 2-1 below reflects a typical layout.

Table 2-1
Waste Types, Storage Time and Dimensions

Storage Arrangement	Waste Type	Max Volume (m^3)	Max Storage Time
Bays (10m x 10m x 3m high)	Green Waste	270[4]	3 days
	Wood	270[4]	1 week

[4] Maximum capacity accounts for slope of waste stockpile.

Storage Arrangement	Waste Type	Max Volume (m^3)	Max Storage Time
	Mixed Waste (Black Bags)	270[4]	3 days
Bays (5.7m x 4.1m x 2.1m high)	Green Waste	50	3 days
	Wood	50	1 week
40 Yard Skip[5]	Cardboard x 3	30	1 week
	Bulky Waste x 3	30	1 month
	Mixed Waste (Black Bags) x 3	30	3 days
	Carpet	30	1 month
	Mattress x 2	30	1 month
	Tyres	30	2 months
	Metal x 2	30	1 month
	Cables	30	2 months
20 Yard Skip	Plaster and Rubble	16	1 month
	TV's	16	1 month
	Paper	16	1 month
	Cans and Plastic	16	1 month
Stockpile	White Goods, Small WEEE and Fridge Freezers	30	1 month
Container (1.5m x 1.27m x 1.85m)	Textiles	3.5	1 month

2.3.1 Non-Waste and Hazardous Materials

The site will store non-waste materials and hazardous wastes that are not covered by the FPP Guidance but are considered in this FPP due to the potential for them to cause or increase the impact of a fire on the site. The materials and their storage arrangements are shown in Table 2-2 below and illustrated on Drawing 002.

Table 2-2
Non-Waste/Hazardous Materials: Storage Arrangements

Type	Storage Arrangement
Gas Bottles	Locked gas cylinder cage with capacity for 100 bottles.
Hazardous Waste	Locked cage for paints, oils, pharmaceuticals, solvents and chemicals.

[5] 8 skips are grouped together as one storage area to the north with a capacity of 240m^3. 9 skips are grouped together as one storage area to the south with a capacity of 270m^3.

Type	Storage Arrangement
Oil Storage	Containers surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest container within the bund.
Liquid Storage – for oils and paint decantated by the general public	110 litre tank surrounded by a leakage containment bund capable of containing at least 110% of the volume of chemical storage required.
Lead Acid Batteries	Bunded container stored within a secure cage when the site is not operational.
Dry Cell/Lithium Batteries	Bunded container stored within a secure cage when the site is not operational.

2.4 Waste Stored in Containers

2.4.1 Types of Container

All waste other than green and wood waste will be stored in containers. The site will utilise a mixture of containers including:

- 40 yard skips;
- 20 yard skips;
- 10 yard skips;
- 4 yard skips;
- Waste cages;
- Lockable skips; and
- Battery boxes.

2.4.2 Accessibility of Containers

The site is designed so that all skips are easily accessed and movable. When a container becomes full, the site is designed so that it can be removed and replaced with an empty one quickly and efficiently to not disrupt normal operations.

2.4.3 Moving Containers in a Fire

In the event of a fire, the site's ability to move skips quickly would be utilised to reduce the risk of fire spread. Site operatives would prevent members of the public from depositing any further waste and the site would be evacuated. The affected skip would be moved immediately by site operatives, qualified in the operation of the mobile plant, to the quarantine area using the RoRo vehicle or the Roll Packer.

2.5 Prevent Self-Combustion

Self-combustion of waste on site is not considered to be a significant risk due to the short storage times and because waste will be segregated into dedicated containers.

2.5.1 Recording and Managing Waste

The method for waste storage on site will centre around the bulking up of materials until a sufficient quantity is present for removal on site. Site operatives will continuously monitor the quantity of waste within each container/bay and notify the site supervisor when nearly full. The site supervisor will then arrange for the container to be removed/bay to be emptied. There is no requirement to record the quantity of waste accepted at the site.

2.5.2 Stock Rotation

There will be no stock rotation on site as wastes will only be stored until sufficient quantity is available to then remove from site. Storage times are detailed in Table 2-1 above. When a container reaches capacity, depending on its contents, it will either be removed and fully emptied before being replaced, or exchanged for an empty container with the full one sent off-site for further recovery or disposal. Site operatives will visually inspect empty containers before they are put in position to ensure they are completely empty. The bays storing wood and green waste will be fully emptied once the bay is at capacity and the material is transferred to an appropriate WTS for bulking up. Site Operatives will visually inspect the bays to ensure they are fully empty before allowing members of the public to deposit further material.

2.6 Monitor and Control Temperature

2.6.1 Reducing the Metal Content

The proportion of metal 'fines' within the waste is not considered to contribute to the risk of self-combustion. Segregated household waste is not known to have a high 'fines' content that would require management.

2.6.2 Monitoring Temperature

There will be no temperature monitoring undertaken on site due to the short storage times and very low risk of self-heating.

2.6.3 Controlling Temperature

All waste other than green waste, wood and some black bag waste will be stored in containers and therefore will not be turned. Green, wood and black bag waste will be stored on site for a short amount of time before being moved to an appropriate WTS for treatment and bulking up. It is therefore not considered necessary to turn these piles.

2.6.4 Hot Weather and Sunlight

There will likely be seasonal fluctuations in the volume of waste received at the site. During the summer months the site will likely receive a higher volume of waste as this is a popular time for members of the public to visit the site. As a result, the skips will be filled and subsequently removed from site much quicker than in the colder months. This increase in turnover will therefore reduces the risk of self-heating within skips or bays during periods of hot weather.

2.7 Prevent Fire Spreading

2.7.1 Separation Distances

All waste will be stored within skips or bays. For the purposes of this FPP, skips stored adjacent to each other will be classed as one whole storage area unless separated by waste bays as described in Section 2.7.3 below.

2.7.2 Fire Walls Construction Standards

50m^3 Green and Wood Waste Bays

The bay walls will be constructed from Legioblock walls and have the fire resistance properties shown below.

- Have a fire resistance period of at least 4 hours;
- Class A1 fire resistance in accordance with clause 4.3.4.4 of BS EN 13369;
- Walls have a designed work life of 50 years as defined in BS EN 1990:2002;
- Bay walls are 4m in height;
- Are a minimum of 0.8m thick; and
- Have no joints that require sealing.

270m^3 Green, Wood and Black Bag Bays

The bay walls will be constructed in situ with 400mm concrete and are designed to have a fire resistance period of at least 120 minutes.

2.7.3 40 Yard Skip Separation

The 40 yard skips are grouped together as shown on Drawing 002 and separated by the 50m^3 green and wood waste bays. 8 skips are grouped together as one storage area to the north of the bays with a capacity of 240m^3. 9 skips are grouped together as one storage area to the south of the bays with a capacity of 270m^3.

2.7.4 Storing Waste in Bays

Green, wood and black bag waste will be stored in bays on site. As detailed in sections 2.5.2 and 2.6.2, stock rotation and temperature monitoring will not be undertaken on site. The construction of the bay walls is detailed in Section 2.7.2.

A 0.5m freeboard will be maintained during operational hours by ensuring waste is stored no more than 3.0m in height. Outside of operational hours, site operatives will leave a 1m freeboard which is considered to be effective in preventing fire spread over the bay walls. During operational hours, a fire will be detected immediately before it could spread over the bay wall.

In the event of a fire, unburnt material within the bays will be removed with a loading shovel and placed in the quarantine area. The loading shovel is available at all times.

2.8 Plant and Equipment on Site

The following items of mobile plant will be available on site:

- 1 x loading shovel;
- 1 x Roll Packer or 360 grab;
- RoRo Vehicle; and
- 1 x Fork Lift Truck;

This list is indicative, but fully represents the type of plant that will be used on site.

The machinery will be maintained in line with Bristol Waste's maintenance procedure. All plant and equipment will receive annual Lifting Operations and Lifting Equipment Regulations (LOLER) and Provision and Use of Work Equipment Regulations (PUWER) inspections. Daily checks will be carried out on all mobile plant and any findings will be recorded in the site diary. All mobile and fixed plant servicing and maintenance will be carried out as per

the manufacturer's instructions. Any defects that might harm the environment will be entered into the incident management system.

All mobile plant will be fitted with fire extinguishers.

Any mobile plant not in use or requiring maintenance will be temporarily stored in a storage area situated at a distance of over 6m from any combustible waste.

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

2.9 Training

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

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

Certain staff members on site will be trained as Fire Marshals and a Fire Marshal will always be present on site.

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

Bristol Waste will conduct a test of the FPP once a year, or in the event of any significant changes to site operations, to ensure that the contents are still relevant and that all staff members' knowledge is current and up to date.

2.10 Security Measures

The site will be enclosed by perimeter fencing and site entrance gates designed to prevent unauthorised access. A lighting system will be in place to illuminate operational areas and internal access roads. A CCTV system will monitor the sites entrance.

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

2.11 Fire Sources and Prevention Measures

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

Table 2-3
Fire Sources and Preventative Measures

Cause	Preventative Measure
Arson and Vandalism	The HRRC will benefit from security measures in place to limit the likelihood of arson or vandalism including: • A 1.8m minimum height fencing around the perimeter of the site; • A CCTV system; • Lighting system throughout the site; • Gates which will be locked outside of operational hours.

Cause	Preventative Measure
	• Inspection and maintenance procedures; and • A visitor sign in system. In the event of a breach of security at the site, the cause will be investigated, and appropriate mitigation measures implemented. This will be recorded in the Daily Site Log. Records maintained will include inspections and maintenance of doors and locks, breaches of security, investigations and actions taken.
Self-Combustion	Self-combustion of waste on site is not considered to be a significant risk due to the short storage times and because waste is segregated into dedicated containers. Effective stock management will limit the likelihood of the self-combustion of materials stored on site. As such, the site has stock management procedures which are upheld by all employees at the site, as detailed in Section 2.5. Only wastes detailed in the Working Plan, will be accepted at the site. Non-waste materials that pose a risk of self-combustion will be stored as indicated in Table 2-2.
Plant or equipment failure	Plant and equipment will be maintained in accordance with the manufacturer's recommendations. All new plant on site will be fitted with telematics, which automatically highlights any faults, and local suppression as part of the minimum design specifications. Plant and equipment will be operated in accordance with the manufacturer's instruction manuals. Instruction manuals for plant and equipment will either be held on site or online if a hardcopy is not available from the manufacturer. No industrial heaters will be utilised on site. Induction training and refresher training will be provided to staff in the safe operation of plant and equipment relevant to their role, in accordance with the Working Plan and EMS. Inspection of plant and equipment will be undertaken on a daily basis to check for faults and ensure appropriate safeguards are in place. The procedure also covers general housekeeping and cleaning of plant and all equipment on site. Storage of mobile plant is detailed in Section 2.8 above. In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is shut off in a safe manner and not used until the equipment can be repaired or replaced.

Cause	Preventative Measure
Electrical faults (including damaged or exposed electrical cables)	Regular safety checks and daily site inspections will be recorded in the site diary. All building electrics are fully certified by a qualified electrician. Annual PAT testing of any on site portable electrical appliances will be carried out.
Naked lights	No naked lights will be permitted on site.
Discarded Smoking materials	A designated smoking shelter will be provided adjacent to the office building. The shelter is located a minimum of 6m from any combustible waste. No smoking outside of the designated shelter is permitted on site.
Hot works	Bristol Waste operates a permit to work system which includes a 60 minute fire watch by a competent person at the end of the works. The template hot works permit is included as Appendix 01. No hot works will be undertaken by staff unless they are trained and have the relevant permit to work. Any works conducted outside of dedicated workshops takes place in a cleared area of the site at least 6m from any combustible wastes. A site operative will perform a continuous fire watch during the hot work and for a minimum of 60 minutes after the work is completed.
Hot Exhausts	Vehicles will be turned off when not in use. Consideration will be given to the high risk time for hot exhausts (one hour after switch off when dust can settle on hot surfaces) and wherever possible vehicles are given time to cool down prior to site staff leaving site at the end of a shift. As detailed in Section 2.2, a 30-minute fire watch will be undertaken at the end of every shift where all mobile plant is switched off and exhausts are checked to ensure they are cool and that no dust has settled. Vehicle operatives will conduct an inspection of each vehicle twice a day and record any findings in the mobile plant defect book. Operatives check the cleanliness of the plant paying particular attention to any build-up of dust or waste around the engine and exhaust. Bristol Waste staff parking is located in the centre of the site, to the east of the office building, illustrated on Drawing 002.
Open Burning	Burning will not be permitted on site. If any fires are found at sites located in close proximity, Bristol Waste will report the incident to the FRS and Police authorities.
Leaks and Spillages of Oils and Fuels	Plant and equipment will be maintained to a high standard in accordance with the manufacturer's recommendations. All staff will be trained and will implement the spill emergency plan in the event of a spillage or leak on site. The location of the spill kits is illustrated on Drawing 002.

Cause	Preventative Measure
	All mobile plant will be inspected twice a day to identify any potential defects that could lead to a leakage of fuel across the site. Vehicle operatives will record any findings and actions in the mobile plant defect book.
Build-up of loose combustible waste, dust and fluff	As outlined in Section 2.2, the site will undergo daily cleaning using brooms, mobile plant and/or wash down hoses/jet wash to prevent a build-up of debris and dust on site. Bristol Waste will adopt good housekeeping measures on site.
Reactions between incompatible materials	Only waste delivered in private vehicles by the general public will be accepted on site. Consequently, there is no requirement for transfer notes or other Duty of Care provisions, and members of the public can deliver whatever wastes they generate at their homes. Therefore, pre-acceptance and acceptance procedures will not be required. Entrance to the site will be controlled by entry barriers allowing site operatives to inspect the items brought in by members of the public before they enter the site. Any non-household items will be refused and not permitted entry to the HRRC. Site operatives will supervise the disposal into the correct containers or locations and encourage segregation. WEEE waste will be visually inspected to ensure there are no leaks before it is stored in the correct area as illustrated on Drawing 002. If unauthorised waste is identified before it is deposited, the householder will be asked to take the waste away with them. If contamination of a container is identified, it will be reported to the Site Manager so that the container can be tipped and sorted. If hazardous unauthorised waste is identified, it will be quarantined, and the Site Manager will be informed. The Site Manager will arrange for it to be removed to a suitably licensed facility.
Neighbouring sites	The site is located within an area of commercial/industrial properties, residential properties and areas of open ground. Employees will remain aware 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 risk.
Hot loads deposited at site	All waste deposited at the site will be supervised by trained site operatives. In the unlikely event that a hot load is brought to site by a member of the public, it will be removed immediately to the closest quarantine area on site where it will be extinguished using a fire extinguisher.

3.0 Fire Management

3.1 Suppressing Fires

There will be no waste stored permanently within a building therefore a fixed fire suppression system is not required.

Fire extinguishers will be located strategically throughout the site. The extinguishers will be inspected annually.

3.1.1 Site Plans

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

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

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

3.2 Fire Drills on Site

A fire drill will be carried out and documented on a 6 monthly basis.

This FPP will be implemented across the site and all fire management equipment will be tested on an annual basis.

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

Regular checks will be made of all escape routes and equipment.

3.3 Firefighting Techniques

3.3.1 Active Firefighting

There is sufficient space within the operational areas on site to move burning or unburnt material to the quarantine area as outlined in Section 3.6.

Mobile plant required to move waste from within bays and to move skips/containers will be available at all times.

As detailed in Section 2.10, site operatives will be trained in the use of fire extinguishers, fire safety and procedures for moving waste to the quarantine area. A trained Fire Marshal will always be present on site.

Depending on the severity and location of the fire, the following techniques may be used:

- Applying water to cool unburnt material within a bay or a skip;
- Separating unburnt material from a bay or skip using either a loading shovel or a 360 grab; and
- Separating burning material from a bay or a skip using the available mobile plant and placing it in the quarantine area to be doused with water or a fire extinguisher.

The site will be evacuated and closed to ensure members of the public cannot enter whilst active firefighting is conducted.

3.4 Fire Waters

3.4.1 Site Drainage

The site will benefit from impermeable concrete and tarmac surfacing throughout and the proposed drainage design is shown on Drawing 017.

All runoff from waste storage areas produced on site flows via drains to an interceptor before being pumped to sewer. This discharge to sewer is permitted under a separate consent with Wessex Water. In the event of a fire, penstock valves will be closed to prevent water from being automatically released to the sewer. Further detail on the firewater containment is included in Section 3.4.4 below.

All surface water from building roofs and roadways flows via drains to attenuation tanks before being discharged to the Pigeonhouse stream. There will be no runoff from the waste storage areas to the surface water drains.

3.4.2 Firewater Calculations

For the purposes of this FPP, the largest waste pile on site will be 270m^3. The green waste, wood and black bag bays will all contain this volume of material. As outlined in Section 2.7.3, skips located within 6m of each other that contain combustible material and are not separated by a concrete wall will be classed as one waste storage area. The largest waste storage area will still be 270m^3 as the layout of the site ensures that a maximum of 9 40yd^3 (270m^3) skips are located together.

Based upon the FPP guidance firewater calculations, it is estimated that approximately 325,620 litres (325m^3) of water would be required to put out the largest combustible stockpile on site.[6]

3.4.3 Water Supplies

Water Tanks

A dedicated firewater storage tank will be installed in the north-western area of the site as illustrated on Drawing 002. The tank has a capacity of 325m^3 and will be maintained at full capacity always.

Fire Hydrant

A fire hydrant is located on site, as shown on Drawing 002. The hydrant can supply a flow of water at 420 litres per minute. This can be used as a source of water in the event of a fire. Bristol Waste will ensure the FRS will have access to this source of water.

The FRS may collect and reuse firewater run off as part of normal operating procedures.

3.4.4 Firewater Containment

In the event of a fire, all firewater can be safely contained on site using the techniques described below.

The majority of waste will be contained in skips. Extinguishing a fire in a skip provides primary containment of any firewater used. The skips on site will be new and almost completely sealed. Small quantities of water will leak from the doors of the skip, but the flow rate will be slow and easily controlled.

To ensure no release of firewater outside the boundary of the HRRC, the site will be kerbed on all sides.

The foul water attenuation tank on site will hold 68m^3 and will benefit from automatic penstock valves that will be closed in the event of a fire. The penstock valves will prevent the release of firewater outside the site boundary. The foul water attenuation tank will overflow once full into the waste operation yard area. The fall of

[6] Based on a 270m^3 storage area being the largest combustible pile on site and it requiring 6.7 litres of water per cubic metre to extinguish. 6.7 * 270 = 1809 litres/min. 1809 * 180 = 325,620 litres/3 hour.

the site has been designed so that all water flows west towards the green, wood and black bag waste bays. This area of the site has a capacity of 342m^3. The combined capacity of the foul water attenuation tank and the waste operation yard area is 410m^3 which is therefore more than sufficient to contain the 325m^3 of firewater required for the worst case scenario on site.

All firewater contained on site will be removed by a third party and tankered to a suitably licensed facility.

3.5 During and After an Incident

3.5.1 During a Fire

During a fire, access to the site will be temporarily restricted until the Site Manager, in conjunction with the FRS, deem it safe to reopen. Therefore, there will be no further waste deposited during a fire event.

Dependant on the scale of the fire, the Site Manager may deem it necessary to notify local businesses using the contact details in Table 3-1 below. The closest residential receptors to the site are located on Headley Lane approximately 70m west of the site. Residential properties are also situated approximately 90m east along Novers Hill and approximately 300m north along Wimborne Road.

Table 3-1
Emergency Contact Phone Numbers

Contact	Telephone Number
ETM Group	0117 953 3654
Dulux Decorator Centre	0117 963 1161
Appeal Conservatory Blinds	0800 975 5757
Honeyfield Property Services	0117 953 9349
Hertz Bristol South	0117 325 0331
ESSO Hartcliffe Way	0117 953 4820
Luckwell Garage	0117 963 4723

3.5.2 Clearing and Decontaminating the Site

Following a fire, burnt waste will be separated from unburnt material and removed from site to a suitably permitted facility.

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

- Hose down affected areas;
- Sweep/brush up any loose burnt waste ready for removal from site;
- Clear any residual firewater via tanker;
- Ensure the drains and gullies are cleared of any debris; and
- Assess any damage to site infrastructure as detailed below.

After a significant incident, an assessment will be undertaken by a suitably qualified individual. Technically competent managers and/or engineers and/or the insurance company will assess the degree of damage caused by a fire and the residual risk from fire damaged waste, emissions or equipment.

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

3.6 Quarantine Area

The location of the quarantine area is illustrated on Drawing 002 and detailed in Table 3-2 below. The quarantine area has been sized to hold 50% of the largest waste bay. During a fire, a 6m separation distance will be maintained around all sides.

Table 3-2
Quarantine Area Dimensions

Quarantine Area	Primary Use	Length (m)	Width (m)	Height (m)	Volume (m^3)
Centre of Waste Operation Yard Area	Dousing of burning/smouldering waste and/or separation of unburnt waste.	8	4.5	4	144

The Site Management will instruct all site operatives when and how to use the quarantine areas. The quarantine area can be used to hold burning waste or unburnt waste. Burning waste from a bay or burning waste within a skip will be moved with onsite mobile plant and doused. If it is not safe to move burning waste, unburnt waste from within the bay or nearby skips that are not alight will be moved to the nearest area in order to maximise the separation distance between burning and non-burnt waste.

The movement of waste will be overseen at all times by the Site Manager to minimise any spillages and ensure the area is not overfilled.

It is unlikely that there will be any non-conforming waste stored within the quarantine area that would be required to move in the event of a fire. The site accepts all waste types arising from households and any waste delivered to site that is suspected to not be from a household is not permitted.

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.

APPENDIX 01

Hot Works Permit

EUROPEAN OFFICES

United Kingdom

AYLESBURY
T: +44 (0)1844 337380

BELFAST
T: +44 (0)28 9073 2493

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 906 4280

CAMBRIDGE
T: + 44 (0)1223 813805

CARDIFF
T: +44 (0)29 2049 1010

CHELMSFORD
T: +44 (0)1245 392170

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: + 44 (0)1392 490152

GLASGOW
T: +44 (0)141 353 5037

GUILDFORD
T: +44 (0)1483 889800

LEEDS
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LONDON
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MAIDSTONE
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MANCHESTER
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NOTTINGHAM
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