



BERKSWELL COMPOSTING FACILITY

FIRE PREVENTION PLAN

BY

BERKSWELL RECYCLING LIMITED
Cornets End Lane
Meriden
Coventry
CV7 7LH

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Document Author	Wayne Westwood
Quality Reviewer	George Longmuir
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Berkswell Recycling Limited
Cornets End Lane, Meriden, Coventry CV7 7LH
Tel: 01676522744



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B – Emergency Action Plan

C – Fire Prevention Risk Assessment

D - Probe System

E – Contingency Plan

F – First In First Out Process

Definitions:

- **Lagoon:-** A structure or tank holding leachate water runoff, usual term compost leachate tank, usually heavy BOD water
- **Pond:-** A structure or natural body of water connected to local drainage and water system usually holding fish and wild life
- **Surface water Tank:-** A structure or tank for the collection and storage of surface water runoff from the hard surfaced paved areas
- **Processing Area:-** An area designated as the area to process waste, usually associated with waste reception, where all machines are operating to manage materials
- **Quarantine Area:-** An area designated for the storage of materials, primarily for the segregation of materials in an incident situation, but can also be used for waste processing, temporary parking, material segregation etc. is 50% minimum size of the largest stockpile on site and in this case that would be 35mx25m
- **Storage Bay:-** A concrete Structure for the storage of product or waste, usually has at least 2 sides maybe 3 sides, for the segregation of material.
- **Impermeable surface:-** A concrete pavement structure for the collection and direction of water runoff to a suitable collection point. Must be impervious to water so water travels over the top.
- **Processed material:-** Material which has been mechanically treated, usually through a shredder or screener, usually size reduced and segregated into specific sizes for onward delivery to end use
- **All Metal Separator:-** A piece of machinery which extracts ferrous and non-ferrous materials from the process
- **Screener:-** A piece of machinery used to size sort the materials into different grades, generally 0/10mm, 10/75mm, <75mm
- **Shredder High Speed:-** Size reduction using a variable hammer rotor with revolutions per minute greater than 100 RPM and screens to size materials
- **Primary Slow Speed Shredder:-** Size reduction using a fixed shafts with revolutions per minute less than 100 RPM and breaker bar and combs to size the materials (more coarse material)
- **Secondary Slow Speed Shredder:-** Size reduction using fixed shafts with revolutions per minute less than 100 RPM and breaker bar and combs to size the materials, usually a finer cut for more uniform materials output
- **Probe system:-** Thermal temperature measuring equipment for the management & monitoring and reporting of stockpile temperatures at an in pile depth of 1.55m (inside the stockpile). Both manual and wireless probes are used.
- **IR Gun:-** Infrared temperature monitoring device, can take photos or static point monitoring using an infrared thermal detection. Usually used on machinery or engines etc to establish temperature and wear and heat generation



1 Fire Prevention Objectives

The purpose of this document is to identify potential fire hazards, detail the controls implemented to prevent fires and the actions taken to reduce the impacts should there be a fire on site.

This plan has been prepared in conjunction with the format prescribed by the Environment Agency Fire Prevention Plans: Environmental Permits Guidance, updated 11 January 2021.

This plan details the measures that will be taken to meet the 3 objectives detailed in the guidance;

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

A copy of the site plan and the FPP is to be located on the outside of the weighbridge in a "Fire Information" Box for the emergency services to locate key information in the event of an incident on site.

2 Management Responsibilities

2.1 The Company Director and Site manager will;

- Ensure the effective implementation of the FPP
- Allocate sufficient resources to ensure the FPP can be implemented
- Ensure site staff are trained and competent to manage the arrangements in place for the FPP, annual Fire drill in accordance with FPP
- Monitor the effectiveness of the FPP through weekly inspections • Manage emergency situations and initiate the Emergency plan
- Regularly review and update the plan as required.

2.2 The Site Operatives will;

- Follow operating instructions
- Maintain the site in accordance with the FPP and take part in an annual drill.
- Report any activity or events which could affect the FPP strategy.

3 Activities at the Site

3.1 The Site Location



Figure 1: Site Location and Receptors

Berkswell Recycling facility is situated in Berkswell Quarry within the Berkswell Estate, Cornets End Lane, Meriden, CV7 7LH, in a rural setting and is shown in Figure 1.

Berkswell Estate is a working sand and gravel quarry, and Berkswell Recycling Limited's site is a permitted composting facility for the processing of green waste. The facility is situated on an area of the quarry that was formerly used for silt ponds. The site at present lies broadly level with the surrounding land which has an elevation between 96 & 99m AOD. Green waste processing will be carried out on an area of the existing site and all operations will be carried out on impermeable concrete surface, the soils are beneath are principally sand and gravels and all surface waters will drain to centralised storage facility on the existing site.

The process requirements for this material will be approximately 90,000 tonnes per year.

Should situations arise such as plant breakdown / temporary closure of outlets, contingency plans are in place to divert materials to other facilities managed by Freeland Horticulture Ltd.



The Green waste will be managed accordingly due to the seasonal market and the requirements of the customers, meaning that the storage piles, size of material, time on site will fluctuate accordingly.

3.2 Local Receptors – See Figure 1

Within 1km of the site the following receptors are located;

Permit Area = Green shaded area.

Ref	Name	Direction	Distance (m)
01	CEMEX	West	500
02	Ready mix concrete facility	North	650
03	Residential property (off Cornets End Lane)	Northeast	500
04	Residential property (off Cornets End Lane)	East	700
05	Residential property (off Mercote Hall Lane)	Southeast	430
06	Farm and outbuildings off Kenilworth Road	Southwest	600
07	Farm and outbuildings (Mercote Farm)	West	280
08	A452	West	887
09	River Blythe (SSSI)	West	1370
10	Residential (Four Oaks)	East	1500
	BHX Flight paths		

3.3 Waste reception, processing and storage

Green Waste:

It is anticipated that 250-300 tonnes of green waste are to be received on site each day, this material is received, rejected, processed and stored in accordance with written operating procedures.

Pre-acceptance procedures will ensure compliance with the waste types the facility is permitted to accept. Third parties will be required to provide the operator, in advance, with all necessary information/documentation to satisfy the requirements of the Environmental Protection (Duty of Care) Regulations 1991 and, the conditions of the Environmental Permit. Further information is provided in the Management techniques section.



A waste stream will only be accepted where pre-acceptance documentation shows that it is suitable for storage and processing at the site and, that it is authorised by the Environmental Permit. Checks will be made to establish whether the haulier is a registered waste carrier or has a valid exemption from registration. Only registered waste carriers, or those who are lawfully exempt from registration, will be permitted to use the site.

Wastes will be checked on arrival against the details given on the waste transfer note/season ticket. If necessary, the weighbridge operator, or other suitably qualified person, will make a visual inspection of loads received in sheeted or netted containers. If HOT loads are identified and have not been highlighted from the above checks and audits the loads will be rejected or quarantined in bays or safe area for collection as per the previous section.

All waste loads, including those received in enclosed containers, will be inspected visually, upon deposit.

Following the acceptance procedures detailed above, waste loads will be deposited into the stockpile and processed in accordance with the operational procedures.

Compost / 40mm (Products):

- The site plan (Appendix A) shows the areas for green waste storage and processing.
- Green waste is accepted in accordance with Section 4 of the EMS.
- All compostable waste arriving on site will be directed to the weighbridge situated adjacent to the site office. The description, nature and source of wastes, details of the waste carrier, waste type, source and quantity (tonnes) of waste will be recorded on the weighbridge computer system. The driver will be directed to the waste reception area, where a site operative will check the waste and ensure the carrier tips in the appropriate area. The waste will be further inspected prior to processing and the weighbridge notified of any relevant information.
- If a hot load is identified measures will be taken as per page 14.
- Green waste feedstock is stockpiled prior to shredding which will be carried out on a daily basis or within 72 hours, unless otherwise agreed with the Environment Agency (i.e. machine failure, etc.).
- Plastic arising from the screening process will be collected and stored in bags, prior to removal from site for bailing, re-processing or disposal.
- The nature of the incoming feedstock material (unprocessed) is considered to be low risk from a fire assessment of self-combustion due to it being composed of large pieces. The stock will be managed to the compliance limits within the designated storage pile(s). It is intended due to the demand for the contracted outlets, that the material will not be on site for a prolonged period. When the material has been processed it is no longer a waste material having been processed in accordance with PAS100.



- The Green waste area will incorporate an impermeable pavement with drainage into an underground tanks (Capacity 1 million Litres). The tank has no outlets to prevent contaminated water entering surface water (e.g. following a fire).
- All waste storage areas will drain to the tanks.
- The construction of the floor for the green waste process is with re-enforced concrete, it is considered that this construction is in line with the requirements of the CIRIA (C736) guidance.

The compost process is undertaken to the standards laid down in PAS 100, for which we have an annual audit by NFS.

Oversize arising from screening, collects at the end of the screener. This is then removed throughout the day and put into storage. There is no heat build-up in the oversize as



there is no friction in the screener, therefore minimising the potential for any heat generation.

First in First Out (FIFO) process is a part of the operational procedures to ensure stock is rotated (See Appendix F).

Monitoring temperatures of the windrows once constructed will be with the use of a handheld probe, or wireless probes that will inform us of any excessive heat generation.

The nature of the incoming material is considered to be low risk from a fire assessment, the stock will be managed in accordance with the SOP for Green waste (Appendix D of the EMS).

Plastic:

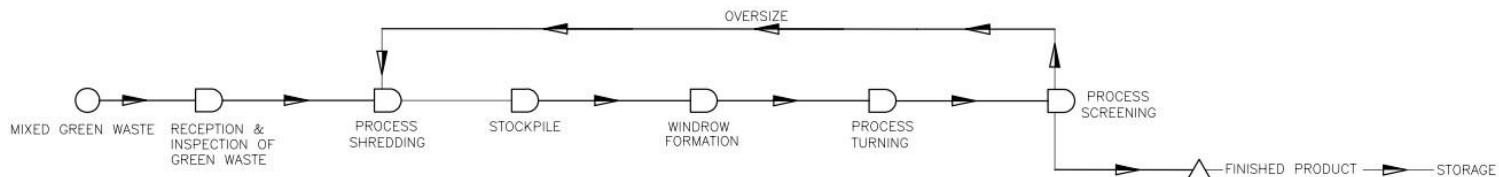
Plastic arising from the screening of the windrows will be windsifted into the shed area covered building then stored until we have a full articulated load for disposal at a permitted facility.

The controls in place to reduce the risk from fire are;

- All deliveries are checked upon arrival (paperwork & contents of the load) ○ No loads are tipped without an operative in supervision ○ Loads are checked before pushing into the bay ○ A visual fire watch is carried out through the day ○ A quarantine area is available for any hot / unsuitable loads ○ Green waste is stored within designated segregated stockpile(s)– processed and unprocessed (left unprocessed for as long as possible)
- Plant & equipment is regularly blown out / washed down / has routine maintenance and parked up away from stockpiles at the end of the day. There is no specific parking area owing to the volume of plant of site (this is not practicable). All plant will be 6m away from wood stockpiles at the end of the day.
- The shredders contain a heat detection and self-activating fire extinguisher system
- Heat checks are undertaken with an IR heat gun on plant and equipment ○ Fire watch is undertaken at the end of every day
- Contingencies are in place for emergencies / operational breakdowns in the green yard (Diverting waste to other sites and short-term hire options for site plant / machinery).

Process Flow Diagram

Compost Processing



4 Managing Common Causes of Fire

4.1 Controlling ignition sources

Sources of ignition have been assessed and reduced as far as reasonably practicable. Remaining sources of ignition have been identified and controlled as described below;

Ignition Source	Monitor	When	Records	Control Measure
Plant/ Equipment	IR Heat Gun	Daily / Weekly	✓	Parked 6m away from waste at the end of the day
Wheeled Loading Shovel	IR Heat Gun	Daily / Weekly	✓	Parked 6m away from waste at the end of the day
Slow speed shredder	IR Heat Gun	Daily / Weekly	✓	Situated 6m away from waste. Detection & Suppression system fitted.
Mobile Screener	IR Heat Gun	Daily / Weekly	✓	Situated 6m away from waste.
360 Excavator	IR Heat Gun	Daily / Weekly	✓	Parked 6m away from waste at the end of the day
Vehicles	IR Heat Gun	Daily / Weekly	✓	Parked 6m away from waste at the end of the day
Material (Self Combustion)	Manual & wireless probe	Daily	✓	Email alert notification to Manager if temperature increases to 75°-80°, to start investigation.
Arson	Perimeter 1.8m high Chain Link and Palisade Fence / Gates, Heras Fence, CCTV	Daily	✓	Third party CCTV to call out Manager if alarms triggered. Managers have full access to cameras via mobile phones. CCTV is motion activated and covers the entire site.
Electrical	Visual during work			Permit to work.

Hot works	Visual during work			Permit to work.
Hot Exhausts	By operator	During processing		Regular blow out, situated 6m away from waste.
Industrial Heaters (Not Applicable)				
Chemical/Gas Bottles (Not Applicable)				
Smoking	Only in Designated area	Break times		Site Rules / Policy / Law

4.2 Hot Works – permit to work (Grinding, cutting, welding)

These activities are not expected to be regular activities undertaken on site. Should such activities be required, they will be carried out in accordance with a management procedure that requires an authorisation to work and includes pre and post work checks (Permit to work).

- The area of works is to be kept clear of flammable and combustible materials for a distance of 6 metres.
- A fire watch takes place during the hot works operation and for 60 minutes after its completion and then a final inspection is completed at the end of the day.
- No hot works must be conducted in the proximity of combustible or flammable materials and provisions have been made for protection of such materials by non-combustible materials, where hot works is conducted must be properly ventilated.
- Appropriate signage will be used during these works.
- Sparks from buckets / grabs and equipment coming into contact with metallic surfaces are not expected to be a source of ignition.

There are no sources of ignition from the shredder / screener. This equipment is diesel powered and there is no metal-on-metal surfaces. The shredders are slow speed this is an added mitigation to fire risk, the equipment is fitted with a water mist system for dust cloud suppression and an automatic fire detection and extinguisher system. All equipment and plant are regularly blown out / cleaned to mitigate the potential risk of fire and checked with an IR Gun for heat.

Magnets are in use on conveyors to remove any metal (which potentially could be hot) from the shredding process and stored in metal containers.

Welfare and cooking take place in the canteen area, where appropriate fire extinguishers are held.

4.3 Hot Spots / Hot Loads / Fires:



Fines begin to heat after production due to breathing (microbiological oxidation). Usually, charring is an indication that temperatures are getting critical, this occurs sometime before smoke develops.

Daily checking of stockpile(s) and windrows for temperature and signs of temperature increase will provide an early warning and minimise the potential for hot spots to develop. Should a hot load be identified, or a hot spot and requires digging out, this will be undertaken in a controlled manner;

- Identify a concrete block bay or an isolation/ quarantine area minimum 6m from other sources and materials with sufficient room to spread the materials to cool it down using the site plant (Shovel(s), 360 grabs)
- Monitoring of temperature with temperature probe or electronic hand-held infrared monitor
- Provision of a water spray or fogging from hoses
- Flooding of the stockpile by inserting perforated pipes and pumping water in
- Dug out material (Hot spot or Fire) will be stored away from stockpiles in an isolated/Quarantined area (shown on site plan) and dampened down, temperatures will be monitored until the temperature is no longer a risk with a temperature probe or handheld monitor.
- This material will then be removed from site to a suitable licensed facility.
- On-site security is provided: e.g. locked gates, Hedgerows, Heras fence, (Compost yard – Chain link fencing 1.8m high), and the site has Monitored 24hour CCTV. Managers have access to CCTV cameras live from mobile phones. The CCTV covers the full site and is activated through movement.

4.4 Visitors and Contractors

Visitors and Contractors are controlled on site, all have to sign in at the weighbridge where the site rules are explained. Contractors will be issued a permit to work, and the work will be supervised, should the works potentially have an impact on the requirements of the FPP this will be explained to the contractor and detailed in the permit to work, and visitors will be accompanied around the site.

4.5 General Housekeeping

The site is kept as clean and tidy as possible at all times. Daily and weekly inspections are undertaken for drainage, tidiness, fire extinguishers, diesel storage, access / egress into the site as a part of the walk around. These checks are recorded in the daily diary (electronic or hard copy).



Daily site boundary checks (1.8m high Chain link and palisade / Heras fence, hedging) are completed to ensure the site security is maintained and the risk of arson reduced. Any defects will be repaired as soon as practicable and in any event within 5 days of discovery.

Out of hours, plant and equipment is not stored next to the storage bays, their locations are detailed on the site plan (See Appendix A).

Fire equipment is checked regularly and serviced annually.

4.6 Plant and Equipment Maintenance

The plant and machinery used on site will include;

- Loading shovel(s)
- Screeners
- Slow / High Speed Shredders with Magnet for metal separation

Specific details are in the site EMS.

All equipment will be of suitable for the activity intended. Equipment will be operated, inspected, and maintained in accordance with the manufacturers' recommendations, in order to minimise fugitive emissions, electrical faults / damaged or exposed cables (works to be carried out by a qualified and certified electrician). It is recognised the importance of ensuring that critical plant and equipment are maintained using preventative maintenance. All plant and equipment will be maintained in accordance with manufacturers' recommendations, preventative work will be carried out as a part of routine checks. Suitable facilities for the maintenance and storage of plant and equipment will be provided.

All plant on site is diesel, all plant is regularly serviced / repaired to reduce / prevent spillages on site.

In addition, throughout the day operators remove dust and debris from vulnerable areas such as exhausts and engine bays and fans. All plant and equipment prior to the end of shift, is cleaned, blown out, checked with heat gun and visually inspected by the operator for the purpose of identifying fire risks. All items of plant are fitted with fire extinguishers.

4.7 Hot works

As detailed in section 4.2 above, Hot works (such as welding, cutting, grinding) activities are rarely carried out on site, when they are a permit to work will be issued.



Should such activities be required (in an emergency only), they will be carried out in accordance with a management procedure that requires an authorisation to work and includes pre and post work checks. The area of works is to be kept clear of flammable and combustible materials for a distance of 6 metres. A fire watch takes place during the hot works operation and for 60 minutes after its completion and then a final inspection is completed at the end of the day. No hot works must be conducted in the proximity of combustible or flammable materials and provisions have been made for protection of such materials by non-combustible materials, where hot works is conducted must be properly ventilated. Appropriate signage will be used during these works.

5 Prevent self-combustion

5.1 Self-Combustion Risk

- The risk from self-combustion from the materials on site is low owing to how they are received, processed and removed from site.
- No hot loads are accepted on site.
- Any hot spots on site will be monitored / removed to the quarantine area
- First in / First out principle;
 - Green waste is accepted, this is then shredded and put into the closest windrow (front end), this continues until the windrow is of the correct size. This windrow is given a batch number and this stays with the windrow, detailing when completed, turned down, testing and then screening date. Then the next windrow is started.
 - Windrows are turned down to make more room at the front end, this is achieved when the oldest windrow is screened – this demonstrates first in / first out.
 - Oversize will be stored in a batch pile, starting closest towards the screener. Then the batch pile is added to, working up the yard. Material is taken from the material closest to the screener for processing. As this material is moved the batch pile moves down the yard allowing for newer material to be stored at the opposite end. (See Appendix F)

6 Manage Waste Piles

6.1 Managing Storage

The oversize material will be stored in a stack of 3000m³, and a minimum of 6m away from the windrows.

Each stack will have a minimum 6m separation from the adjacent stack as per FPP guidance. 40mm fraction (product), will be in a 3000m³ stack, and a minimum of 6m from the windrows. The Windrows are approximately 1500m³. The stacks will be monitored by handheld or



wireless temperature probes. For composting activities, the maximum pile sizes do not apply as the waste is actively managed and monitored by handheld probes during the composting process.

6.2 Waste Quantities and Locations

Green waste will be sourced mainly contractors, transfer sites and local authority contracts in the local area. All wastes are assessed for their suitability to be received on site with the accepted waste types.

The site plan Appendix A shows the areas for stockpile(s) and windrows. All storage will be in the open, the buildings in the permit area are the workshop, office block and weighbridge in the top yard. Staff will be informed and trained in the procedures for processing and storage.

The processed materials (Compost, 40mm) will be stored windrows or batch piles, 70m x 5m x 4m (1500m³). The oversize will be stored in batches of 3000m³ maximum, with 6m fire breaks.

6.3 Waste storage inspections

Formal Inspections

On a daily basis each windrow / stockpile is visually inspected by the site manager for any anomalies, such as visual signs of heat, steam or vapour. Any anomaly will be actioned by investigation and remedial action will be taken such as rotation of the material, removal of the material, dampening down etc. Unprocessed green waste owing to its form has been proven to be low risk and will not generate sufficient heat to combust. Owing to the structure of these green waste stockpile(s) being large pieces of there is nothing on the market that can measures / detect heat in the core of the stockpile(s). We will carry out visual checks of the stockpile(s) daily, and the IR heat gun can also be used as another means of monitoring.

Informal Inspections

Owing to the nature of our business, site operatives are located within the yard area throughout the day, whereby they are continually and vigilantly observing / monitoring the condition of the site process and materials for the potential fire risk situations.

6.4 Monitor and control temperature

Active temperature monitoring



Temperature monitoring probes smarTprobes, Compost Manager and Handheld probe will be used to monitor the processed material in the open windrows for temperature fluctuations (Minimum 4 probe tests per windrow, placed in the sides of the pile into the core). The Oversize and 40mm will have wireless temperature probes left in situ. Management also have access to live CCTV cameras on site, through mobile phones to get an instant view of the entire site.

6.5 Non-waste

In addition to the green waste, the following sources of fuel have been identified as;

- Diesel (Red, for machines and plant) (20000 Litres in a double skinned tank)
- Oils & Grease (25 & 205 Litre drums stored in the workshop)

These are stored outside of the compost process areas as shown on the Site Plan (Appendix A).

7 Fires

7.1 Receptors

- Human
- Employees }
- Site users } Health (smoke inhalation) & Safety (burns)
- Public }
- Environment
- Air - Smoke (BHX Flight Path)/ windblown ash
- Land - Impact of fire on ground & fire residue
- Water - Firewater run-off

Risks to people & prevention of harm is covered by operational Risk Assessments, Safe Working Procedures, and Emergency Procedures (including those detailed in the Fire Logbook). In an incident, key receptors would be contacted as detailed in Appendix B – Emergency Action Plan.

In the event of a fire, as a minimum the key points of action would be;

- Reduce the pile size of the affected material – good access to the piles
- Use Quarantine area which is close by
- Set up a controlled burn with the FRS – if approved by the FRS and EA
- Put pumps into action if necessary / break up affected material to extinguish
- Clear up residues and dispose of off site

In the event of a fire, Risks to the environment are addressed by the site infrastructure and the prevention measures in this document.

- Air – Perimeter Bund around perimeter of pad & internal walls create windbreaks.
- Land- Impermeable pad constructed to protect ground beneath & provide containment.



- Water - Pad constructed with falls to contain run-off, all run-off collected in above ground tanks.

The mostly likely impact would be from smoke due to suppressing the fire with water. It is expected (with FRS approval) that a controlled burn would take place, whereby the impact of smoke would be substantially reduced. Birmingham Airport would be contacted to inform them, should the smoke plume move towards a flight path (Details in Appendix B).

It is not foreseen that the fire would spread to the woodland, which is over 30m away, but consideration should be given to embers and dry wood in the height of summer so a damping down program will be agreed with site management and FRS.

The SSSI is approximately 1370m to the West of the facility, it is not anticipated that this will be affected by a fire on site.

7.2 Fire Prevention Measures:

- Wind breaks
- Fire breaks – 6m separation distance
- Metals removed and stored separately.
- Daily Temperature checks either using a temperature probe, wireless probe or a thermal heat gun. This is in addition to the contracted monitoring by CCTV. Managers have access to site cameras through mobile phones at all times.
- Keep green waste in unprocessed form as long as possible (LOW RISK STATE).
- Stock rotation, ensures that stock is not left on site longer than necessary (within 6 months), helping to reduce the possibility of self-combustion. Contingency plans are in place to divert green waste to other facilities should the need arise (See Appendix E).
- Site inspection for any signs of combustion at the start & end of each day
- Fire watch (following cessation of production) at the end of each processing shift
- Mobile plant parked at a suitable distance away from stockpiles outside operating hours
- Site security to reduce potential for arson (3rd party Monitored 24hr CCTV) and perimeter fencing (Heras, Chain link and Palisade, hedgerow)
- Housekeeping – processing plant regularly cleaned/ serviced.
- Plant maintenance – daily checks (bearings), planned & routine, annual servicing.

There is a strict no smoking policy on site, a designated smoking area is by the weighbridge for staff and visitors to use. The smoking area does not contain any combustible materials and there is a sand / or water filled bucket for cigarette ends.

7.3 Quarantine Area



Quarantine area will be dependent upon site operations / wind & weather conditions and is situated close to the stockpiles (6m away from stockpiles) and will be 50% volume capacity, 1500m³ of the largest pile (3000 m³) in an area on the pad. This area will be primarily at the front end (top) of the yard, as this area is where materials are excepted and processed to go into the compost process and also the bottom of the yard.

This area has quick access into the yard and any hot loads / material on fire will be away from the majority of the site.

The area is on an impermeable surface and waters from this area drain to the site surface water tank. There is the flexibility to make any area on the yard available for quarantine owing to the number of Loading Shovels available to clear an area for this purpose.

7.4 Fire-Fighting Provisions

Fire extinguishers are located around the premises.

Mobile extinguishers will be a variety of: 6kg Foam, 6ltr water, 4ltr Carbon dioxide. Plant is fitted with industry standard extinguishers.

Access to water will be from the 1million litre site tank, to collect run off, harvest water and re-circulate fire water. During an incident there are also Fire Hydrants on Cornets End Lane (See Figure 2).

There is also the availability to abstract water from Cemex surface water ponds. The volume of the ponds is unknown, and the volume cannot be guaranteed, this water would be in addition to that required by the guidance – we have sufficient volume available to deal with a 4-hour fire, including use of two mains fire hydrants situated on Cornets End Lane.

Site extinguishers are inspected annually by an external fire protection company and visual checks are carried out monthly by the site manager. All extinguishers are placed in prominent locations in clear view with easy access.

There is no fixed fire suppression system on site. Fire suppression will be achieved by the use of mobile equipment as described above to actively fight any fire on site. Staff have been trained to use extinguishers in the event of an emergency. The estimated volume of water needed to fight a fire has been calculated at 4hrs firefighting water requirements for site, in case of emergency require a rate of 2m³ or 2000 litres of water per minute of burn as per Environment Agency guidance.

A Fire in the largest stockpile – 3000m³ will equate to;

- 1,200,000 litres per hour
- 4,800,000 litres for 4 hours

Total storage capacity on site for fire prevention is 1 million Litres in the surface water tank. There is provision to remove water off site during an incident should the need arise.

*Please note that the water extracted from the tank to put out a fire would lead to a reduction in water level in the tank which would then give capacity for run-off from fire-fighting – an endless loop apart from evaporation and absorption. Run-off from firefighting will not occur until the material is out and being suppressed. The breaking up of piles using site plant will also reduce the impact and requirements for water. Due to the 6m separation distances around the piles, mobile plant will be used, when safe to do so, to remove unburnt materials to the quarantine area and thus reducing the fire size for active firefighting.

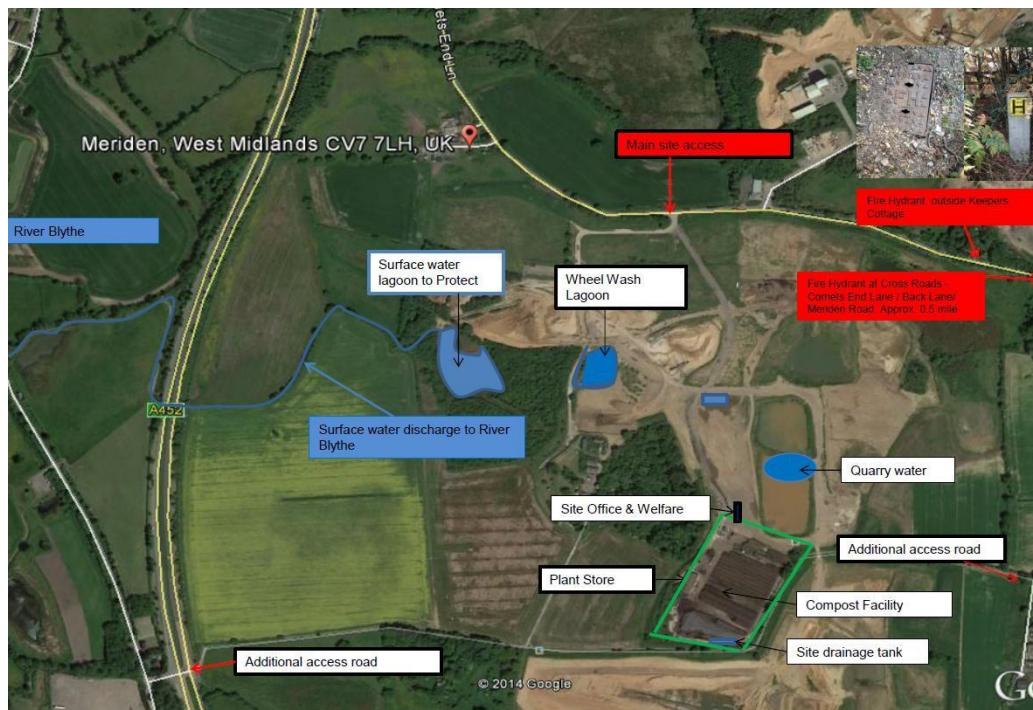


Figure 2: Emergency plan

7.5 Fire Alarm and Detection

The fire alarm on site is an airhorn with manual operation from the weighbridge. (see Appendix D).

7.6 Staff Training

All staff are trained in the site operating procedures, FPP requirements, maintenance procedures and emergency plans.

All staff are trained in the use of firefighting equipment, the requirements of the FPP in an emergency and the emergency plan, this will be put into practice annually.

Refresher training and updates are given to staff as required. The effectiveness of this is tested through regular fire drills and fire scenarios.



Records are kept for all training completed and for fire drills performed.

7.7 Emergency Action Plan

Actions to detail with an emergency from a fire are detailed in the Emergency Action Plan (see Appendix B). This Plan contains details for key personnel. The most senior member of staff on site at the time of an incident will act as incident controller until Senior management get to site.

The plan also contains contact details of neighbours to contact in the event of an incident.

To prevent an incident escalating and to reduce the spread of fire, onsite plant (Loading shovel(s), 360 Grab,) would be used to move unburnt green waste adjacent to the fire to an alternative area on site. Also, these machines could be used to break into the stockpile on fire, to remove unburnt waste and drench the burning waste. To give an example for the capability of the plant should an incident occur, we would expect 3 loading shovels to be able to move 1000m³ of green waste within an hour and with the assistance of the grab we will be able to remove adjacent stockpiles / reduce the stockpile on fire to minimise the spread of fire and extinguish a fire within 4 hours in accordance with the objectives in the FPP guidance.

The initiation of this action would be taken by the most senior member of staff on site and will always consider the safety of employees.

The assessment of whether to move unburnt waste / break into the burning stack will consider the following;

- The safety of the operative inside the machine
- The direction of smoke
- The heat of the fire – intensity & duration
- Means of escape

Access for Emergency Services

The main access for emergency services is through the main gate on the north of the site, off Cornets End Lane, a second access is possible off the A452 leading to the South of the site, please refer to site plan (Appendix A).

Liaison with Emergency Services

It is expected to have a visit from FRS periodically, for a familiarisation visit along with welcoming any advice that the FRS may have.

Post Incident Actions



After an incident the following steps would be taken;

- Access any damage
- Liaise with the insurance provider
- Remove any excess fire water
- Remove any burnt or semi burnt material to a licensed waste management facility
- Repair / replace any damaged infrastructure
- Suspend operations if repairs cannot be made – implement Contingency plan.

Fire Prevention Risk Assessments

A fire risk assessment, desk-top fire priority gathering audit and an Environmental hazard, pathways & receptors assessment have been conducted in order to produce this Fire Prevention Plan. Please refer to Appendix C for details.

7.8 Continual Improvement Action Plan

Berkswell Recycling is dedicated to continually improving site operations through investments and modifications, taking into account Industry Best Practice. It is intended as a part of the Annual review of the site EMS that the FPP is also reviewed, taking into account the results of the annual drills.

8 Managing Fire Water

8.1 Site Drainage and Containment

The waste processing areas will incorporate an impermeable pavement with drainage via underground tanks. The tanks have no outlets to prevent contaminated water entering surface water (e.g. following a fire). All waste storage areas will drain to the tanks.

The construction of the floor for the waste process area is with re-enforced concrete, it is considered that this construction is in line with the requirements of the CIRIA (C736) guidance.

8.2 Operational Area

Drainage design

The area for operating is approximately 19620m².

Taking a M5-48hr event of 55.7mm a runoff volume of 1092m³ would be generated at the site. To handle this runoff, the storage tank has been constructed with a capacity of 1 million Litres, 1500m³ for the tank and another 420m³ for the associated ramp and other drainage parts (allowing for 20% extra/free space storage capacity), therefore the tank capacity of 1500m³ is sufficient.

The tank dimensions are 30m x 10m x 4.7m and there is an additional 10m³ capacity in the drainage system gulley's and an additional 420m³ in the ramp of the tank.

Fire-fighting considerations

Firefighting water usage on site will be part of the fire prevention plan, we have provided the calculation as part of the drainage design. Other notes to be considered when evaluating the water requirements are:

- A Fire and rescue Tender has a capacity of 2000 litre per minute through its high-pressure pump or 120,000 litres (120m³) per hour for one tender running all hoses.
- As the site harvests all water and if an assumption of 60% water goes back to tank from the fire-fighting activities this means over a 4 hr period 288000 litres (288m³) of water will be recycled.

*Please note that the water extracted from the tank to put out a fire would lead to a reduction in water level in the tank which would then give capacity for run-off from firefighting – an endless loop apart from evaporation and absorption. Run-off from firefighting will not occur until the material is out and being suppressed.

The breaking up of piles using site plant will also reduce the impact and requirements for water. Due to the 6m separation distances around the piles, mobile plant will be used, when safe to do so, to remove unburnt materials to the quarantine area and thus reducing the fire size for active firefighting.

Fire action Procedures

ACTION	Equipment	WHO.?	WHEN.?
Reduce pile size first and localise fire	Using on site machinery	Site management and staff	Immediately
Remove from the area excess materials	Using on site machinery	Site management and staff	Immediately
Inform the relevant authorities		Site management and staff	Immediately

Start firefighting procedures	Fire brigade and on-site equipment	FRS and site Management	After agreement with FRS
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8.3 Fire Fighting Water (stockpile size 3000m³ for 4Hrs)

A Fire and rescue Tender has a capacity of 2000 litre per minute through its high-pressure pump or 120,000 litres (120m³) per hour for one tender running all hoses.

As the site harvests all water and if an assumption of 60% water goes back to tank from the fire-fighting activities this means over a 4-hr period 288000 litres (288m³) of water will be recycled.

Total storage capacity on site for fire prevention is 1 million litres in surface water tank and associated drainage. The tanks will always have the minimum required volume of water in them of 1million litres.

Site design is such that if a fire event would occur, all water stays bunded on site by the site infrastructure. The site infrastructure includes a perimeter drainage channel directing water to the sump for pumping.

*Please note that the water extracted from the tank to put out a fire would lead to a reduced level in the tank which would then give capacity for run-off from fire-fighting – an endless loop apart from evaporation and absorption. The breaking up of piles using site plant will also reduce the impact. Mobile plant will be used, if safe to do so, to take away unburnt material from a pile to the site quarantine area which is close by. This will reduce the fuel loading and thus reduces the quantity of fire water required.

Waste treatment and storage activities will be carried out on an impermeable surface, with drainage directed to a sealed tank, giving an added level of protection to soils, surface water and groundwater. Regular checks of site surfacing, drainage, bunding and storage vessels and these will be repaired as necessary, to ensure that they retain their integrity. The tank has no outlet to prevent contaminated water entering surface water or sewers (e.g. following a fire). All waste storage areas will drain to the tank.

All tanks and drums used for the storage of diesel, plant oil and lubricants, will be suitable for the material being contained. The diesel tank is 2500 litres and is double skinned. Oils will be in 205 Litre drums stored within the workshop some 400m away from the processing pad. All liquids are stored in compliance with HSG 51 (HSE guidance for storage of Flammable Liquids) and The Control of Pollution (Oil Storage) (England) Regulations 2001.

Plant on site is diesel and one electric screener, all plant is regularly serviced / repaired to reduced / prevent spillages on site.

The management in emergency situations and the initiation of the emergency plan – including the management of fire water, is the responsibility of the Company Director /



Site Manager. This would also include the organisation of tankers to remove excess waters from the site should the situation arise.

9 Summary Table

EA FPP requirement	Site FPP meets the requirements for alternative measures
Your fire prevention plan must be a standalone document within the site management system	The site FPP document is a specific document forming part of the site Management system.
You must make sure that staff know where you keep your fire prevention plan.	Detailed in Sections 1, 2.1
All staff and contractors working on the site must understand the contents of the fire prevention plan.	Detailed in Sections 4.4, 7.6
You must have regular exercises to test how well your plan works...	Detailed in Sections 2.1, 2.2 and P42
Activities at your site	Section 3 has this information
Site plans and maps	Provided in Appendix A Buildings are identified Access points around the site are identified. Water tank labelled. Fixed and mobile plant parking area labelled Quarantine area is identified Location of plant and fuels shown. Sensitive receptors identified in section 7.1 on aerial map with compass rose and in 3.2 with distances and direction. Hydrant locations shown. Areas of hardstanding identified. Site drainage shown to surface water tanks. Storage stack and bay sizes detailed on plans
Arson	On-site security comprises: Hedgerows, Heras / palisade fence, locked gates, 24-hour third party monitored CCTV from cameras which managers can access from mobile phones. There are daily site boundary checks and fencing damage repaired.

Maintenance and inspection of plant	Maintenance and servicing are detailed in section 4.6 p.15 with mobile plant storage location identified on the site plan in Appendix A and is away from wood chip storage areas. Plant have fire extinguishers and shredder/screener has fire detection and suppression system. It also has a water misting system to keep wood dust to a minimum. Cleaning of wood and dust deposits is given. The Table in section 4.1 confirms the mobile equipment is parked away from the wood chip storage area with the screener and shredder located 6m away from stockpiles.
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Electrical faults including damaged or exposed electrical cables	Detailed in section 4.1 & 4.6.
Discarded smoking materials	Covered in section 7.2. Smoking only allowed is designated area by weighbridge away from wood storage area. Shown on site plan.
Hot works	Detail on p 13-16, 43. Extinguishers provided during hot works. Areas cleared of combustibles and fire watches used.
Industrial heaters	Not used
Hot exhausts	Covered in section 4.1.
Ignition sources	Detail provided in section 4.1.
Batteries	Not present as waste
Leaks and spillages of oils and fuels	Bulk diesel storage is well away from wood storage area in double skin tank. Oil is in 205 litre drums 400m away from wood storage/processing area. No ELVs on site.
Build-up of loose combustible waste, dust and fluff	Dust and debris cleaned from machinery and water misting used to reduce dust created from shredding where required.
Reactions between wastes	Not applicable as only composting green waste.

Deposited hot loads	No hot loads are expected, rejected and re-loaded back onto lorry or quarantine area used. Procedures detailed in section 4.3 for identifying and rejecting hot loads arriving on site.
Self-heating Storage time	<p>Self-heating fire prevention measures detailed in section 5.1:</p> <p>No acceptance of hot loads First in first out (Appendix F) Daily visual inspection.</p> <p>6-month maximum storage</p> <p>Temperature monitoring is taken from the time of production, not after 3 months (Exceeds EA requirement).</p> <p>Temperature monitoring of batch piles using 1.5m probes (handheld or Wireless) and/or thermal heat gun.</p>

Detecting fires	<p>A number of methods of detecting fires are given in the site FPP which include:</p> <p>Air horn for general site fire alarm</p> <p>IR Heat Gun – used mainly for machinery</p> <p>Probe – for early detection within batch piles. (hand held or wireless 1.5m length). Email notification to Managers. See Appendix D.</p> <p>CCTV 24-hour monitoring, Managers have access to cameras via mobiles.</p> <p>Shredder has specific fire detection / Suppression system. Visual daily checks and fire watch at the end of the day.</p>
Management of pile sizes Maximum pile sizes 750m ³ >=150mm	<p>Oversize to be stored in 3000m³ stacks. Each stack will have a separation distance of 6m from the adjacent stack.</p> <p>There is a batch control to manage the storage of each stack. The stack(s) will be monitored as soon as material is stored (Exceeds the EA requirements to monitor after 3 months storage time).</p> <p>Compost & 40mm fraction are product.</p>
Waste Bale Storage	Bales stacked 450m ³ with 6m separation between stacks. Bales turned monthly and temperature checks carried out.

Suppression system	Not applicable as all waste is outside.
Firefighting techniques	<p>The resources available at the site to fight a fire are detailed in the site plan in section 7 and Appendix B, and include:</p> <ul style="list-style-type: none"> • Access around the perimeter of the storage area and around each pile, as identified on the site plan, to allow for approach from different directions. • Mobile plant is available to remove burning wastes and to localise a fire by moving unburnt material to quarantine area or moving adjacent stockpiles away. • On-site 6' pump. • Fire hydrants at the site entrance – identified on the site plan. • Water reservoir up to 2 million litres available on-site. Site is designed to collect fire water run-off for re-circulation. • Staff are available on site to assist FRS. 6 staff during working day. • Portable fire extinguishers around site and on equipment.
Water supplies	<p>Section 7 and 8 detail the quantity of water available and required to fight a fire in a large pile of 3000m³ for 4 hours.</p> <p>(Meets the objective in the Guidance)</p> <p>In reality, the pile would be smaller owing to the measures detailed to minimise the fire size.</p> <p>(Exceeds the EA requirements).</p>
Managing fire water	The site plan details the water containment system used on the site as detailed in Section 8.
During and after an incident	There is an Emergency plan in section 7.7 and Appendix B that details the actions and equipment available during an incident including FRS access and post fire requirements.



10 APPENDICES

Appendix A Site Plan

Appendix B Emergency Action Plan

Appendix C Fire Prevention Risk Assessment

Appendix D PROBE System

Appendix E Contingency Plan

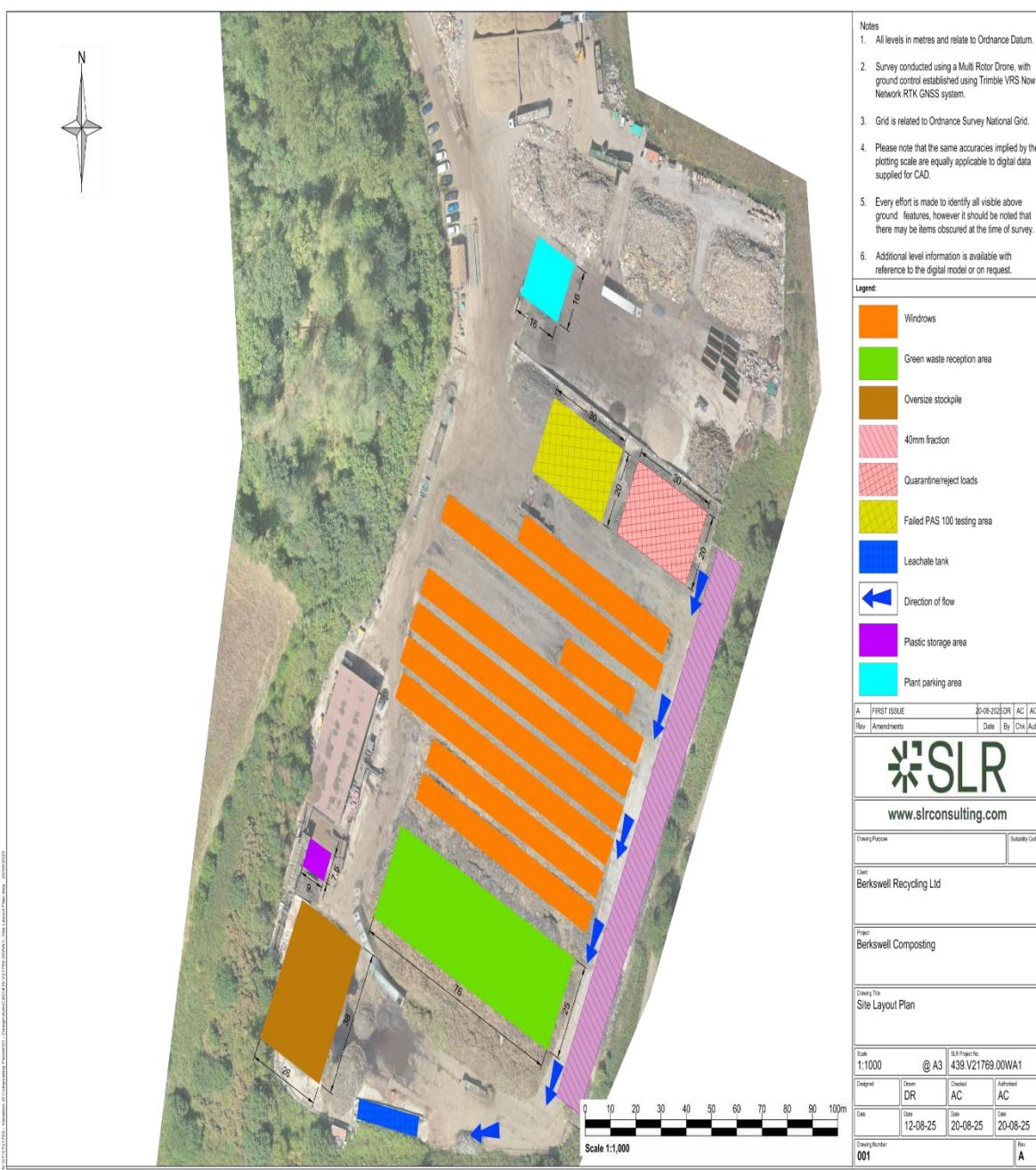
Appendix F First In First Out Process

Appendix

A

Site Plans

Berkswell RECYCLING LIMITED





● Mobile Plant Parking



● Green Waste Reception



● Failed PAS100 Testing

● Quarantine Area & Rejected Loads



● Plastic Storage



● Oversize Storage



Appendix B

Emergency Action Plan

Emergency Fire Action Plan

- **Introduction**

The fire safety plan has been established for the safe working of the Berkswell site to ensure that:

- This plan covers the action to be taken in the event of a fire on the Berkswell Site
- How fire hazards will be controlled.
- Emergency responders will be notified of a fire emergency.
- Emergency responders will not be delayed in carrying out their duties.
- Firefighting operations will be managed effectively without unnecessary delays.
- Designated supervisory staff will be appointed and organized to respond to fire emergencies.
- Instructions including schematic diagrams describing the type, location and operation of building fire emergency systems will be established.
- Building facilities, systems, equipment and devices will be properly inspected and maintained.

The fire safety plan reflects the characteristics of the wood facility considering the available firefighting infrastructure. The fire safety plan includes the following information:

- Emergency procedures for an emergency



In the event of a Fire all operatives must inform Site Manager or Supervisor by radio or by mobile phone. He will then inform the Fire Brigade 999 and the Environment Agency Incident Hotline 0800 807060. In the event of the fire effecting residents the police may need to be involved because the residents may need evacuation.

Other contact numbers are: Mr Wayne Westwood (Site Manager) Mobile: 07442 640813
Mr George Longmuir (Director) Mobile: 07887 568292
Mr Colin Bennett (Site Supervisor) Mobile 07999 465821

- **Training of site personnel on Fire and evacuation procedures**

Site operatives have the evacuation procedures explained at their induction provided by the Health and Safety Manager. Regular site fire safety meetings a part of regular safety meetings and fire drills are conducted annually, this will include scenarios such as a stack fire / machine fire and what to do in accordance with the FPP requirements.

- **The Assigned site personnel are responsible to maintain fire safety duties**

These are Mr Westwood and Mr Longmuir. They are responsible for controlling combustibles on the site and around the buildings. Also, general site housekeeping this done by asking staff to removing excess pallets, rubbish /waste material and other combustibles on a regular basis.

Other things to take into consideration are maintaining separation of combustibles from open flame devices. They maintain and clear unobstructed from access route(s) for fire brigade. Maintaining there is a clear exit from the office.

The parking of vehicles or delivery trucks should not obstruct fire department access if needed to attend site.

- **Firefighting Services – Access Route**

Site drawings are in weighbridge / site office for the fire brigade and show the location of firefighting equipment. The site address signs are visible and legible to emergency crews from the street. The site road is 12 metres wide, allowing good access for appliances (See Appendix A).

- **Fire Extinguishers**

There is a sufficient quantity and type on-site and servicing is undertaken annually by Diamond Fire or another certified company.

They are provided at or near fuel operated equipment and are they adjacent to any hot works operations (e.g. cutting torch, welding, torching, etc.). The extinguishers are intended for small fires and plant fires. Water is intended for extinguishing wood fires.

All plant has industry standard fire extinguishers onboard, the shredder has an automatic suppression system.

- **Hot Spots**

Debris / fines begin to heat after production due to breathing (microbiological oxidation), usually charring is an indication that temperatures are getting critical, this occurs sometime before smoke develops.

Daily checking of windrows for temperature and signs of temperature increases will minimise the potential for hot spots.

Should a hot spot be identified and requires digging out, this will be undertaken in a controlled manner;

- Identify a isolation / quarantine area minimum 6m from other sources and materials with sufficient room to spread the materials to cool it down
- Monitoring of temperature with temperature probe or electronic hand-held infrared monitor
- Provision of a water spray or fogging through hoses
- Flooding of the stockpile / windrow by inserting perforated pipes and pumping water in
- Use on site plant (Loading shovel(s), 360 Grab) to remove hot material
- The removed material will be put away from stockpiles in an isolated area using site plant (Shovel(s), 360 Grab) and dampened down, temperatures will be monitored until the temperature is no longer a risk with a temperature probe or hand-held monitor. This material will be removed from site for disposal if not longer suitable or for reprocessing at one of our primary processing sites.

- **Hot Works Operations**

The area is to be kept clear of flammable and combustible materials for a distance of 6 metres. A fire watch takes place during the hot works operation and for 60 minutes after its completion and then a final inspection is completed at the end of the day. No hot works must be conducted in the proximity of combustible or flammable materials and provisions have been made for protection of such materials by non-combustible materials, where hot works is conducted must be properly ventilated. Appropriate signage will be used during these works.



- **Flammable and Combustible Storage**

There are no flammable or combustible liquids stored within the Green yard. The Diesel tank and oil storage is within a building in the compost yard.

- **Electrical Installations and Petroleum Gases**

The electrical installations, storage and use of petroleum gases comply with the requirements of the Safety Standards Act. Electrical installations will be installed and checked by a qualified electrician (every 3 years). Diesel is stored in a double skinned, secure tank. Lubricants and diesel are stored outside of the processing areas in the workshop building.

- **Security**

On-site security is provided: e.g. locked gate, 1.8m high chain link and palisade / Heras fencing, hedgerow, monitored alarm and the site has Monitored third party 24-hour CCTV – Full site coverage / movement detecting (with contact call out list held by the CCTV company). Managers also have live access to the site cameras from mobile phones.

- **Contact Personnel**

There is a list of names and telephone numbers of persons to be contacted during and after normal operating hours or in the event of an emergency are below;

- Mr Wayne Westwood (Site Manager) Mobile: 07442 640813
- Mr George Longmuir (Director) Mobile: 07887 568292
- Mr Colin Bennett (Site Supervisor) Mobile 07999 465821

In addition, key neighbours to be contacted also;

Receptor:	Contact Number
Cemex	01675 443150
Highways Agency	0300 123 5000
Solihull MBC Resilience Team	01926 476619

BHX Air traffic Control Watch Manager	0121 767 1210

All the contact personnel are able to respond in a timely fashion with a response time of about 30 minutes.

- **Building Diagrams:**

The diagrams for the site are:

- Plans of the site;
- Muster point(s);
- Location of water sources
- Location of fire protection equipment

The fire safety plan will be reviewed and updated as the site developers and then periodically afterwards. The plan will evolve and will be used to maintain and protect the buildings and site operatives.

- **Fire Precautions and Evacuation procedures**

The Managing Director will ensure that: -

All employees receive comprehensive induction before commencing work, to ensure that they are fully aware of all the arrangements in place during the evacuation procedure.

A register of employees is kept up to date at all times. This register must be available for inspection at all times and will be taken to the fire assembly point in the event of an evacuation for the purpose of calling the roll.

The requirements for employee training in fire safety are adhered to.

A fire logbook is kept up to date with all relevant records relating to fire safety and ensure that it is made available for inspection by the local authority fire brigade.

All fire-fighting equipment is tested on a regular basis as per the manufacturer's guidelines and records kept.

A fire evacuation drill is carried out at least annually which will be recorded in the fire logbook.



A fire risk assessment is undertaken within the workplace, outlining who may be affected by a fire along with any special requirements that may be identified.

A regular check is made to ensure escape routes and doors are not obstructed. Fire exit doors should be unlocked and available for use at all times when persons are in the building. Fire doors should be closed at all times and not wedged open.

In the event of a fire, the safety of a life shall override all other considerations, such as saving property and extinguishing the fire.

The company does not expect employees to fight fires, however, extinguishing action can be undertaken if it is safe to do so. On no account, should a closed room be opened to fight a fire.

Employees should report any concerns regarding fire safety to management, so that the company can investigate and take any remedial actions that may be necessary. The hazard detection form can be used for this function.

Weighbridge / Office

In the event of a fire breaking out in the site office all staff must follow the company's fire instructions and evacuate the office by following the green man to the fire exits.

Re-entering the building is strictly prohibited until the incident control officer from the emergency services declares that it is safe to do so.

Process Yard

In the event of a fire in the stockpile's, operatives must inform the Site Manager by radio or mobile, who will then inform the fire brigade and the Environment Agency. After this he will instruct the appropriate members of staff assist in the fire action plan.

At present temperature monitoring will be undertaken daily during operational hours using a temperature probe (additionally to monitor with online probes to a live monitoring system- which is currently being purchased). Following ABPR guidance (currently the only standard detailing continued monitoring) there will be a minimum of 4 probes per windrow. This will be in addition to the contracted monitoring by CCTV.

- **Extinguishing Fires.**

Only attempt to put out fires if safe to do so. If in doubt, evacuate the buildings or site area. Fire extinguishers are located at various positions around the site and in the site offices. Familiarise with their positions.

The following table summarises the various fires on which the different types of extinguishers should be used. These will only be used for small fires; it is not practicable to fight large fires with extinguishers. For fires the Fire Rescue Service will be notified. Staff will work alongside FRS to extinguish the fire if practically possible by removing to the Quarantine area or concrete bay to contain the fire.

Type	Solid fires (wood, paper, cloth, etc.)	Liquid fires (petrol, oil, paints, fats)	Safe in vicinity of live electrical apparatus
Water (gas cartridge)	YES	NO	NO
FFF spray	YES	YES	YES
Halon 1211 (BFC)	NO	YES	YES
Dry powder	NO	YES	YES
CO2	NO	YES	YES

- **Points of Importance**

- All operatives must familiarise themselves with the 'Fire Evacuation' drawing displayed in the weighbridge and in recycling site office any contractor Prior to commencing work, must have an induction and pointed out all how this relates to the actual site layout.
- No hot works are to be carried out without prior agreement of Berkswell Recycling Site Management and must be carried out under a 'permit to work'. Appropriate firefighting equipment must be at hand during hot works operations. iii) In the case of a fire, all operatives and staff must report to the fire assembly point adjacent to the weighbridge. Then a role call will be done to ensure all personnel have evacuated.
- Operatives must not leave the Fire Assembly Point area until they are told to do so by Berkswell Recycling Site Management.

Important

Many activities are the cause of fire. It is your responsibility to prevent fires by safe working practices.

Mr Wayne Westwood will inform the Fire Brigade and the Environment Agency Incident Hotline (0800 807060).

Appendix C

Fire Prevention Risk Assessment

Table 1 – Potential environmental hazards, pathways & receptors		
Hazard	Pathway	Receptor
Inadequate waste acceptance procedures resulting in the receipt of non-permitted wastes	Airborne / Land based	Site personnel, visitors, local residents, neighbouring workforces, Cemex, Meriden Quarry
Inadequate waste storage leading to odour, litter & dust	Airborne / Land based	Site personnel, visitors, local residents, neighbouring workforces, Cemex, Meriden Quarry
Transfer of materials leading to spillage	Airborne / Land based	Site personnel, visitors, local residents & neighbouring workforces, Cemex, Meriden Quarry
Overfilling vehicles/ vessels leading to spillage	Airborne / Land based	Site personnel, visitors, local residents & neighbouring workforces, Cemex, Meriden Quarry
Emissions from plant & equipment	Airborne / Land based	Site personnel, visitors, local residents, neighbouring workforces, Cemex, Meriden Quarry

Failure of containment	Absorption to ground, un-off & site drains	Site personnel, visitors, local residents & neighbouring workforces. Groundwater, surface water SSSI R.Blythe, Soils, Wood
Fires	Airborne	Site personnel, visitors, local residents, neighbouring workforces, air quality. A452, Meriden Quarry, Bham Airport
Failure to contain firewater	Absorption to ground, run-off, site drains	Groundwater, surface water & soils, SSSI R Blythe
Wrong connections made in drains/ other systems	Absorption to ground, run-off & site drains	Groundwater, surface water & soils
Failure of main services	Airborne	Site personnel, visitors, local residents & neighbouring workforces, Cemex, Meriden Quarry
Operator error	Airborne, land & water	Site personnel, visitors, local residents & neighbouring workforces. Groundwater, surface water R Blythe, air quality & soils
Dust from processes & site roads	Airborne	Site personnel, visitors, local residents, neighbouring workforces, adjacent wood, Cemex, Meriden Quarry
Mud / debris on roads due to site activities	Site roads, public highway	Users of site roads and public highway
Breach of security	Fences / gates	Site personnel, plant / equipment, intruders
Release of effluent before adequate checks are made	Absorption to ground, run-off & site drains	Groundwater, surface water & soils, Cemex, SSSI R Blythe

Tables 2,3 and 4 identify the scoring system;

Table 2 - Probability of hazard occurring without the use of protective measures	
Frequency	Score
Never	0
Annually or less frequently	1
Monthly or less frequently	2
Weekly or less frequently	3
Daily or less frequently	4

More frequently than daily	5
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Table 3 - Consequence of hazard to the environment or human health

Consequence	Score
Harmless	0
Almost harmless	5
Some harm	10
Harmful	15
Very harmful	20
Extremely harmful	25

Table 4 - Mitigation factor

Mitigation	Score
Ineffective or non-existent	1
Partly effective	2
Effective	3
Very effective	4
Entirely effective	5

The risk assessment matrix, for Berkswell Recycling Limited, is shown in Table 5;

Table 5 - Risk Assessment Matrix

Hazard	Probability of Hazard Occurring	Risk Factor Probability x Consequence of Hazard	Summary of Preventative Measures/Controls	Mitigation Factor	Mitigated Risk Factor/ Mitigation Factor)
Inadequate waste acceptance procedures	5	10	Pre-acceptance procedures are in place to confirm compliance with list of permitted waste types. On arrival at the facility, waste loads will be checked against the details given on waste transfer notes/season tickets. All waste loads will be inspected visually on deposit in the waste reception area. Any non-permitted wastes (including hot loads) deposited inadvertently at the site, will be reloaded onto the delivery vehicle for off-site removal or placed in a quarantine area. Hazardous wastes will not be accepted.	4	12.5
Inappropriate waste storage	5	10	After inspection, wastes will be stored in the waste reception area to wait processing. Materials unsuitable for processing are stored in containers or bays as appropriate.	5	10
Transfer of substances (e.g. filling or emptying of vessels)	2	15	Diesel Oil, Plant oil and lubricant tanks will either, be self-bunded or, surrounded by bunds with a minimum capacity of 110% of the tank's contents. Bund bases and sides will be impermeable. All vents, sight glasses and pipework connections etc will be located within the bunded area. Absorbent material will be used to treat any spillage that may arise.	5	6
Overfilling of vessels	3	15	Diesel Oil, Plant oil and lubricant tanks will be bunded (see above). The volume of liquid in these tanks will be recorded. The level will be checked before deliveries are made, to ensure sufficient capacity within the tank. Absorbent material will be used to treat liquid spillages.	5	9
Emissions from plant or equipment,	5	15	Alarms and interlocks will be used on major items of plant and equipment in the facility as part of the control system. There will be strict compliance with startup, shut down and operating procedures. Maintenance and servicing of plant and equipment will be in accordance with the manufacturers' recommendations. Spill kit available should a spillage occur.	5	15

Table 5 - Risk Assessment Matrix

Hazard	Summary of Preventative Measures/Controls				Mitigated Risk Factor/Mitigation	Mitigation Factor
	Risk Factor Probability x	Consequence of	Hazard Probability of Hazard Occurring	Without Protective		
Failure of containment	1	15	15	Diesel Oil, Plant oil and lubricant tanks will be fully bunded (see above). The effective capacity of the bunds will be maintained at all times. The site will have an impermeable surface, with waste handling areas drained to an underground storage tank. Tanks, bunds, raw materials storage containers and the surface water drainage system and sumps etc. will be inspected on a weekly basis. Any repairs will be undertaken as soon as practicable and no later than 5 working days from discovery (subject to the availability of replacement materials). Mitigation measures will be undertaken immediately, if there is a possibility of pollution or harm.	5	3
Fires	1	25	25	No wastes will be burned within the boundaries of the site. Fire extinguishers will be located at the site. All fire extinguishers will be clearly marked and tested at appropriate intervals, to confirm their integrity. Site personnel will be made aware of their location and trained in their correct use. There will be strict compliance with pre-acceptance and acceptance procedures to ensure only permitted wastes are accepted. Explosive, flammable and oxidizing wastes will not be received. Implementation of Fire Prevention Plan. Thermal radiation damage will be minimal owing to the impermeable surface and bay walls being concrete, these structures will absorb heat up to 1200°C. There is no infrastructure adjacent that could be affected by thermal effects. Following a fire the integrity of the floor and blocks will be inspected by a suitably qualified engineer and a report provided, any actions resulting from this will be acted upon. There is a no smoking policy within the operational area.	4	6.25
Failure to contain firewater	1	15	15	There are no outlets to allow drainage off site, containment of potentially contaminated firewater will be in the storage tank.	4	3.75
Wrong connections made in drains or other systems	1	15	15	Suitably qualified engineers will ensure that materials and plant are in accordance with approved specifications and, their installation is in accordance with the approved designs.	4	3.75
Failure of main services	1	10	10	The facility will incorporate process controls, to ensure plant can be operated safely at all times, including during emergency shut down in the event of a power cut.	5	2
Operator error	2	15	30	Strict compliance with the operator's Environmental Management System (EMS). Use of Technically Competent Persons, as part of the Fit and Proper Person requirement, to manage activities at the site. Health and safety and environment, accident, management training, will be provided for all employees.	4	7.5

Table 5 - Risk Assessment Matrix

Hazard	Consequence of Hazard	Risk Factor Probability x	Summary of Preventative Measures/Controls	Mitigated Risk Factor/ Mitigation	Mitigation Factor
Dust from waste handling operations, processing and loading etc.	3	10	<p>The waste accepted at the site is not intrinsically dusty. There will be strict compliance with waste pre-acceptance and acceptance procedures. Waste will be deposited, stored and processed in a controlled manner, in accordance with site operational procedures.</p> <p>The site will be hard surfaced with concrete on the operational area. The site will utilize dust suppression, as well as manual or mechanical sweeping as necessary. Dust protection netting will be used in areas where dusty operations are undertaken. Visual monitoring for dust will be undertaken daily.</p>	5	6
Mud on adjacent highways due to activities on site	2	15	All internal roads and waste storage and processing areas will comprise a paved, impermeable surface that is fit for purpose. Internal roads, site entrance and public highway will be cleaned by mechanical sweeper, as appropriate. Waste will only be stored on paved areas. Waste handling activities are unlikely to generate mud. Site staff will inspect the roadways regularly and instigate remedial action if required.	5	6
Breach in site	3	15	Perimeter fencing (1.8m high), and lockable gates are installed. 3 rd Party monitored CCTV will be used.	4	11.25
Explosions	0	15	There is no risk of explosions owing to the waste streams accepted and the waste acceptance procedures that are in place.	5	0
Sources of ignition from plant /equipment	4	15	The plant is routinely maintained, thereby reducing the potential for electrical faults. The loading buckets do scrap up debris from the impermeable surface; the potential for sparks from this activity is minimal as there is not any aggregate on the wearing surface. The impermeable surface is routinely checked as is replaced when defects are identified.	4	15



Appendix D

Probe Systems

Compost Manager & SmarTprobes wireless technology.

Compost Manager

Is a unique product designed specifically for use in composting. It allows intelligent and rapid monitoring of the entire composting process from raw materials to finished product. This is achieved by regular and targeted sampling of selected batches using a probe with integrated instrument that simultaneously monitors oxygen, carbon dioxide, moisture, and temperature. By careful monitoring and control of these four parameters, it is possible to significantly improve the composting process. Data from these four readings are uploaded to a web server where they are analysed and stored alongside batch management information.

SmarTprobes

Probes are placed into our batches & stockpiles. Our site is set up on the software into pre-defined areas, and each probe is allocated to a site area. The software can also be used to keep track of individual batches.

Data is sent wirelessly to gateway. The gateway collects data from every probe on site and transfers it to the cloud using a built-in 2G cellular modem. The modem is supplied with a roaming SIM card for maximum connectivity. A backup copy of the data is kept on an SD card to ensure no data is lost should the mobile network lose connectivity. The gateway is usually the only part of the system that requires mains power; a back-up battery is included to provide at least 24 hours of monitoring in the event of a power outage.

Data is processed, and alerts are sent, the server checks each temperature reading and issues any alerts via text message and/or email. We select temperature alert levels relevant to our site and process, and choose who gets an alert, senior and site management based on the alert severity.

We can view current data from our site, or historical data from any previously monitored batches on a computer, phone, or any Internet-connected device.



APPENDIX E Business Continuity Plan

Disaster Recovery

Business Continuity and

Risk Management Plan

Revision 1:

Date: June 2024

Distribution List

Copy Number	Name	Location
001	Wayne Westwood	Site Manager
002	George Longmuir	M.D Berkswell Recycling Ltd
003	Colin Bennett	Site Supervisor
004		
005		
006		

If you have any suggested changes to this plan, please notify Wayne Westwood.



Introduction

Aim of this Plan

To prepare this business to cope with Disaster Recovery, Business Continuity and Risk management in the event of an emergency.

Objectives

- To define and prioritise the Critical Functions of the business
- To analyse the emergency risks to the business
- To detail the agreed response to an emergency
- To identify Key Contacts during an emergency

Disaster Recovery

Disaster is defined as a prolonged impact on the ability to maintain service level. Types of disaster may include:

Total loss of access to premises, machines, personnel and customers files

Partial loss of premises, machines, personnel and customer file due to,

- External or internal strike
- Ecological events such as flood
- Accidents, such as fire or
- Deliberate disruption (e.g. Bombs)

This plan will provide direction and tools to assess the damage, establish emergency communications, plan and implement solutions so that the loss is minimised, and the stricken facilities are repaired or replaced as soon as possible.

The responsibilities include:

- Full assessment of loss and actions necessary to recover
- Assign staff
- Specify physical and technical requirements
- Source temporary site for medium to long term if required
- Implement agreed tasks and solutions in the short, medium and long term



Outside Services include:

- Power & Utilities
- Royal Mail
- Courier Services
- Suppliers
- Other departments within Berkswell Recycling Limited

In the event of a disaster occurring at Berkswell Recycling Ltd which makes the site unusable, the following plan will be put into operation immediately.

1. A member of senior staff from Berkswell Recycling Ltd head office will contact the insurance company and inform them of the incident.
2. The Berkswell Recycling Ltd operations contact (George Longmuir) will be alerted, who will then implement the Recovery Plan. Moving forward, all members of staff will be contacted and subsequently assigned tasks to begin the recovery process. This could include either meeting on site or at a specific location or being contacted remotely via email or telephone depending on the arisen circumstances. Members of Berkswell Recycling staff now assigned to the recovery team will be responsible for:
 - Business recovery
 - Assessing salvage viability
 - New equipment purchases where required
 - New arrangements for suppliers etc.

The staff from Berkswell Recycling Ltd will be moved to the Freeland Head Office with the main objective to provide a full set-up as far as reasonably practicable and continued supply services to our customers with minimum disruption. The recovery team authority will supersede any existing procurement procedures. (If the Head office is affected by the incident, other offices are available within other Freeland Group Sites)

George Longmuir will transfer priority work and personnel to the recovery site & will coordinate the relocation of any required equipment and stationery, deploy replacement kit and hire equipment where necessary.



If the site becomes unusable for a long period of time, George Longmuir will plan for a relocation site that is suitable for their needs to operate as a business whilst the old site is dealt with.

George Longmuir will undertake a site survey and kit out the new location with suitable equipment necessary to restore the offices or production to full strength, if any equipment can be salvaged from the disaster site, Berkswell Recycling Ltd staff will check and redeploy any such equipment that can be used.

Business Continuity Plan

Berkswell Recycling Business Continuity Plan will ensure that processes are in place that will be followed in the event of unforeseen events, likely to cause disruption to normal business activities.

Berkswell Recycling will work with customers and suppliers to minimise the effect of any such occurrences.

Berkswell Recycling Business Continuity Plan is based on the following objectives:

- Identify at an early stage, abnormal occurrences that may impact the service.
- Assess the probability of these events occurring and evaluate the impact.
- Design and implement procedures, both reactive and pro-active, to minimise the possibility of the plan being implemented.
- Provide necessary resources to ensure customers receive the necessary service levels.
- Refer to Risk Management

These primary objectives will be achieved by:

- Identifying key personnel, equipment, facilities and systems required to recover and or maintain service.
- Use the recovery plan to restore full operational capability in the minimum amount of time.

Events are classified into 3 escalating levels, and these reflect the severity of the event, and directly correlate with the required action.



Level One – Minor event that must be recorded for review purposes. These are events that in isolation have minor capacity to disrupt operations.

Level Two – Events that have the potential to disrupt operations. These must be notified to the director and contract managers and recorded with the insurance company if required.

Level Three – Events capable of major disruption whether actual or potential. The full Continuity Plan must be initiated, and relevant parties and authorities informed.

It is important that the escalation plan be implemented and escalated in a controlled manner. Responsibility for implementation rests initially with Mr George Longmuir, M.D. who will co-ordinate all aspects of the initial implementation

Response One – Responsibility rests with the contract manager for co-ordinating and documenting all events.

Response Two - Responsibility rests with the site manager for the processes which have to be implemented immediately. The contracts manager is responsible for all further actions and escalations.

Business Impact Analysis

Critical Function:	Main office (finance/estimating/invoicing/telephone system functions)
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Effect on Service:

Time	Effect on Service:
First 24 hours	Telephone and e-mail correspondence disrupted. Paperwork possibly destroyed; job files unable to be referenced. IT function disrupted.
24 – 48 hours	Temporary reduction in staff numbers.
Up to 1 week	Financial implications due to missed deadlines (estimating department affected) Possible outsourcing of work to maintain service provided.

Up to 2 weeks	Loss of custom due to effect on services provided. Damage to company reputation due to late payments.
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Resource Requirements for Recovery:

Time	No. of staff	Relocation?	Resources required	Data required
First 24 hours	10% - management staff	Remote working possible	Communication equipment (mobiles)	Insurance details. All data is backed-up remotely and is accessible away from site, including customer and supplier information, financial information
24 – 48 hours	Management and key personnel	As above	As above, plus laptops/internet access	See above
Up to 1 week	As above	As above	As above, plus landline provision	See above
Up to 2 weeks	All staff	Remote working by all staff who have sufficient resources. If necessary, finance in place to relocate offices.	All of the above	See above



Business Impact Analysis

Critical Function:	Berkswell Recycling Facility
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Effect on Service:

Time	Effect on Service:
First 24 hours	Should any event occur at the office premises, this should not affect Berkswell Recycling services.
24 – 48 hours	As above
Up to 1 week	New contracts due to start could be affected by potential damage to paperwork held on site. For example, paper copies of drawings required for planting layouts could be damaged.
Up to 2 weeks	Loss of contracts and the potential to win new contracts could occur if office premises are affected, as hard copies of tender opportunities and quotes could be damaged.

Resource Requirements for Recovery:

Time	No. of staff	Relocation?	Resources required	Data required
First 24 hours	All managers and operatives	N/A	Mobile phones, vehicles, plant machinery, tools	Quality data and product in/out
24 – 48 hours	As above,	Remote working possible for staff not required to	As above, also laptops	As above, possible requirement for both client and supplier

		carry site work		contact details.
Up to 1 week	As above, plus administrative staff to continue office communications	As above	All above plus landline provision	As above,
Up to 2 weeks	All staff	Site staff to relocate to other yards / offices.	All of the above	As above

Hazard Analysis Table

Risk Matrix Score

A = **HIGH** Likelihood and **HIGH** Impact

B = **LOW** Likelihood and **HIGH** Impact

C = **HIGH** Likelihood and **LOW** Impact **D** = **LOW** Likelihood and **LOW** Impact

Hazard	Impact	Mitigation Place	in Mitigation possible	Risk Matrix Score
Flooding	The premises are not located near to water and there is no risk of flooding	Electric mains board and all critical electrical equipment is situated above flood level	N/A	D
IT Failure	Could cause damage and loss of company information	Computer activity is backed up on a daily/weekly basis and the tapes are stored offsite	Use of laptop computers and mobile phones away from the office to continue business activities	B
Utility failure	Loss of power resulting in potential loss of computerised Data, and disruption of communication	Generator to be on site		D

	channels			
Fire or explosion	Potential loss of life. Building and all equipment likely to be damaged	Chemicals are stored and used according to manufacturer's instructions. Evacuation procedure in place.	Procedures to be put in place to deal with bomb threats and other emergencies.	B
Transport accident	Delivery of materials to site affected. Potential injury to Personnel. Operatives transport to sites affected.	All vehicles fitted with trackers. Vehicles effectively maintained and replaced when required.	Local companies are available for the hire of vehicles if necessary	D
Loss of premises	Loss of company information. Cost implications to acquire new premises and replace equipment		Electronic copies of drawings, as well as tender and estimate documents received into the office could be backed-up and stored off-site	B
Theft	Loss of equipment	Business is alarmed outside working hours, with a keypad entry system in place during office hours. Plant equipment is fitted with trackers to aid recovery	Contacts are in place for the hiring in of extra plant if necessary	B



Emergency Response Checklist for use during/after an emergency:

- Start a log of actions taken:

- Liaise with Emergency Services:

- Identify any damage – ONLY IF SAFE TO DO SO:
Injury to staff/the public/subcontractors

Damage to building

Damage to plant/equipment/vehicles

Damage to stock

- Identify Functions disrupted:

- Convene your Response / Recovery Team:

- Provide information to staff:

- Decide on course of action:

- Communicate decisions to staff and business partners:



- Provide public information to maintain reputation and business:

- Arrange a Debrief:

- Review Business Continuity Plan:

Risk Management

Risk Management is the identification, assessment and prioritisation of risks (defined in ISO31000) and the effect of uncertainty on objectives, whether positive or negative. This is followed by co-ordinated actions and resources to monitor, control, and minimize the probability and impact of negative events.

Berkswell Recycling Risk Management outlines steps and procedures that are either currently implemented or have the availability to be implemented, in the bid to reduce negative effects on the business and its ability to uphold business continuity as detailed above. Berkswell Recycling have taken steps to ensure that risks relating to loss or damage are reduced and monitored as far as reasonably practicable.

Premises

- Are covered by comprehensive 24 hour CCTV which is recorded archived.
- Are kept locked when not in use and are further guarded by high level fencing throughout.
- Yard areas, offices and ancillary buildings are regularly maintained to include the worthiness of roofing, security to windows and doors and general overall condition.
- Comprehensive insurance is maintained for every aspect of the business activity

Information and Communications



- All documentation is regularly backed up and kept in an off-site location.
- Information is also collated and stored by an external online service provider.
- All primary staff members have access to mobile computer and telephone facilities in the event that affixed office equipment is not accessible.
- Berkswell / Freeland Horticulture Ltd IT systems are monitored and maintained via an external communications company.
- **General Works**
- All operations hold relevant health and safety and industry specific training certificates. To include regular refresher training and conformity audits.
- All staff members are aware of the policy and procedure for documenting incidents, injuries and near misses.
- All individual works carry site specific method statements and risk assessments.
- All staff are aware of the fire and emergency procedure, and this information is displayed accordingly.
- All vehicles and associated plant are regularly maintained.

Key Contact Sheet

Contact	Office Number	Mobile Number	Useful information
George Longmuir	01676 522744	07887 568292	Managing Director
Wayne Westwood	01676 522744	07442 640813	Key Holder (Site Manager)
Colin Bennett	01676 522744	07999 465821	Key Holder (Site Supervisor)



Log Sheet

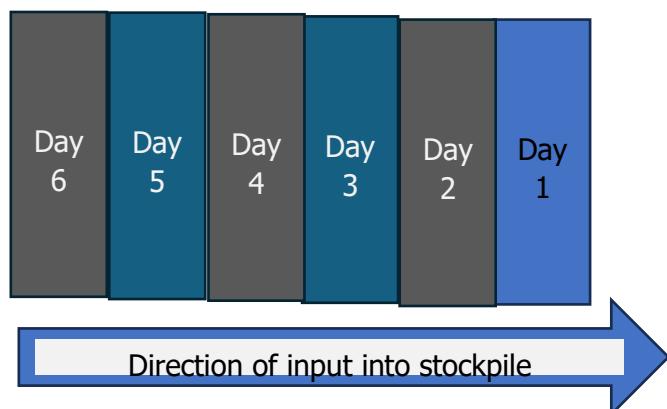
Date	Time	Information / Decisions / Actions	Initials

APPENDIX F

First In First Out process

First In First Out Process for Oversize

Week 1



Week 2



Week 3

Direction of input into stockpile



Direction of input into stockpile

SCREENER

SCREENER

SCREENER