



# FIRE PREVENTION PLAN

Environmental and sustainability solutions provided to  
**RESOURCE RECYCLING SOLUTIONS LTD**

WRM-LTD.CO.UK



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## REVISION LOG

Revision	Details	Date
1.2	Initial draft for IVC permit variation	13/02/2024
1.3	Internal review	28/02/2024
1.4	Internal review	19/03/2024
2.0	Second Issue	28/03/2024
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## CONTENTS

<b>1.0</b>	<b>SITE DETAILS .....</b>	<b>1</b>
1.1	Premises Particulars.....	1
1.2	General Statement of Policy for Preventing Fires.....	1
1.3	General Description .....	2
<b>2.0</b>	<b>MANAGEMENT SYSTEM &amp; WASTE PILES.....</b>	<b>3</b>
2.1	Waste Types.....	3
2.2	Waste Acceptance .....	3
2.3	Regular Exercises.....	3
2.4	Open Windrow Composting .....	4
2.5	In-Vessel Composting.....	5
2.6	Waste Reception / Storage Pre-Composting Material.....	6
2.7	Oversize Material .....	7
2.8	Non-PAS100 Material .....	7
2.9	PAS100 Compost Material.....	7
2.10	Waste Wood Material .....	8
2.11	Contaminant Storage.....	8
2.12	Quarantine Area .....	8
2.13	Comments.....	9
<b>3.0</b>	<b>SOURCES OF IGNITION.....</b>	<b>10</b>
3.1	Self-Combustion .....	10
3.2	Preventing Self-Combustion.....	10
3.3	Combustion Emissions.....	11
3.4	Stock Rotation.....	12
3.5	Plant / Machinery.....	12
3.6	Plant Maintenance .....	12
3.7	Preventing Sparks from Loading Shovels .....	13
3.8	Mitigating Risks from Hot Exhausts .....	13
3.9	Fuel Tanks .....	13
3.10	Extreme Weather.....	14

3.11	Smoking.....	14
3.12	Arson.....	14
3.13	Site Infrastructure Electrical Faults.....	15
3.14	Hot Works.....	15
3.15	Build-Up of Loose Combustible Waste, Dust and Fluff.....	15
3.16	Reactions Between Incompatible or Unstable Waste.....	15
3.17	Naked Lights.....	16
3.18	Industrial Heaters.....	16
3.19	Open Burning.....	16
3.20	Hot Loads.....	16
3.21	Leak and Spillages of Oil and Fuels.....	16
<b>4.0</b>	<b>DETECTING AND MANAGING FIRES.....</b>	<b>17</b>
4.1	Daily Checks.....	17
4.2	Training.....	17
4.3	Emergency Action Plan.....	17
4.4	Fire Infrastructure on Site.....	18
4.5	Firefighting Strategy and Suppressing Fires.....	19
4.6	Out of Hours Detection.....	20
4.7	Fire Water Containment.....	20
4.8	Storage Tanks.....	21
4.9	Fire Water Capacity.....	21
4.10	Contingency Plan.....	22
<b>5.0</b>	<b>SITE LOCATION.....</b>	<b>23</b>
5.1	Fire Service Route.....	23
5.2	Sensitive Receptors.....	24
5.3	Historic Wind Direction.....	28
<b>6.0</b>	<b>FIRE SAFETY DEFICINECES TO BE RECTIFIED.....</b>	<b>29</b>
	<b>ANNEX A – FIRE SAFETY MANAGEMENT PLAN.....</b>	<b>31</b>
	<b>ANNEX B – SITE LAYOUT PLAN.....</b>	<b>35</b>

## 1.0 SITE DETAILS

### 1.1 Premises Particulars

Overview									
<p><b>Premises Name:</b></p> <p>Resource Recycling Solutions Ltd (RRS)</p> <p><b>Address:</b></p> <p>Iron House Farm, Lancaster Road, Out Rawcliffe, Preston, Lancashire, PR3 6BP</p> <p><b>Tel no:</b></p> <p>07714 901473</p> <p><b>Site Opening Times:</b></p> <table> <tr> <td>Monday to Friday</td> <td>08:00 – 18:00</td> </tr> <tr> <td>Saturday</td> <td>08:00 – 12:30</td> </tr> <tr> <td>Sunday</td> <td>Closed</td> </tr> <tr> <td>Bank Holidays</td> <td>Closed</td> </tr> </table>	Monday to Friday	08:00 – 18:00	Saturday	08:00 – 12:30	Sunday	Closed	Bank Holidays	Closed	<p><b>Use of Premises:</b></p> <p>Food and green waste composting facility (&lt;75,000 tonnes per annum)</p> <p><b>Owner/Employer/Person in control of the workplace:</b></p> <p>Julie Gardener – Site Manager</p> <p>Anthony Walker - Director</p>
Monday to Friday	08:00 – 18:00								
Saturday	08:00 – 12:30								
Sunday	Closed								
Bank Holidays	Closed								

### 1.2 General Statement of Policy for Preventing Fires

RRS will do everything possible to prevent fire:

- Control sources of ignition such as heating pipes, naked flames, light bulbs, space heaters, furnaces and incinerators;
- Keep sources of ignition at least 6m away from piles of combustible and flammable materials;
- Reinforce fire prevention messages using signs;
- Ensure staff and contractors follow safe working practices when undertaking hot working, such as welding and cutting;
- Ensure all visitors follow the correct safety and fire prevention procedures;

- Apply a no smoking policy or ensure designated smoking areas are situated away from combustible materials;
- Introduce a regular maintenance and inspection programme for all site areas (including site machinery) and minimise fibre and paper in buildings and around the site;
- Put site security measures in place (e.g. security fencing) to prevent arson;
- Have all site vehicles fitted with fire extinguishers and dust filters;
- Implement a fire-watch at the end of each shift (when dust from processing operations can settle onto hot exhausts and engine parts);
- Make sure separation distances are observed between plant and material when the site is not staffed; and
- Provide a dedicated emergency or quarantine area big enough to cope with a major incident, with a clear area of at least 6m around the perimeter (this is available at all times and identified on the site plan).

### 1.3 General Description

Iron House Farm is located off Lancaster Road. The farm is located in Out Rawcliffe which is 17km south of Lancaster and 9km west of the M6. The main village of Out Rawcliffe is situated to the south west at a distance of 3km. The site is situated within an area that is of agricultural use with some residential. Main access to the site is via Hornby's Lane off Lancaster Road.

RRS is permitted to accept and treat 75,000 tonnes of waste material per annum. Waste material is source segregated green bio-waste composted in open windrows and green waste, comingled food and green waste or food waste only composted via In-Vessel Composting (IVC). The site also allows the importation of post IVC treated compost material for further processing at RRS. The Site permit also allows for the shredding of wood waste, and the processing of waste into aggregates and soil through sieving and crushing. These materials are limited to 1,000 tonnes at any one time on Site and may be mixed with the PAS100 product to further enhance the quality of the product.

The facility currently comprises of a large, concreted pad in the centre of the site, two separate weighbridges, IVC waste reception hall, open barn, office, welfare space and car park. Please note, a separate biomass boiler (Topling 990kW) is also housed at the site and operated under a Part B permit by another company called Mass Energy.

Grid Reference: 341097 (Easting), 444589 (Northing)

## 2.0 MANAGEMENT SYSTEM & WASTE PILES

For information on site layout, please see Annex B – Site Layout Plan

### 2.1 Waste Types

**Table 1 - Waste Types and Throughput**

Process Type	Stage	Annual Receipt
Open Windrow Composting	OWC Sanitisation and Stabilisation of Green Waste. Maturation of post-IVC treated material	<75,000tpa
In Vessel Composting	IVC Sanitisation of Green Waste, Comingled Food and Green Waste or Food Waste	
Waste Wood	Shredding	<1,000 tonnes at any-one-time
Aggregates	Sieving / Crushing	<1,000 tonnes at any-one-time
Soil	Sieving / Crushing	<1,000 tonnes at any-one-time

For storage durations please see section 3.1.1 preventing self-combustion.

### 2.2 Waste Acceptance

All incoming loads are inspected for signs of excess heat, such as steam or previously burnt material. If a load is deemed to be an immediate risk, then it will be rejected. If the load requires cooling before being stored in the designated reception area, then it will be spread across the quarantine area until it reaches atmospheric temperature. All operatives who monitor load acceptance are trained to identify hot loads.

### 2.3 Regular Exercises

Exercises to test the effectiveness of the Fire Prevention Plan will be undertaken annually to ensure staff are adequately prepared in case a real scenario ever occurs.



Fire drills are conducted on an annual basis to ensure that staff are adequately prepared in case a real scenario ever occurs. Fire drills are documented using a Fire Drill Record Template. The drill includes a range of site checks including; access and egress of escape routes, testing of alarm system and inspection of firefighting equipment. Furthermore, site operatives will practice utilising the fire horn that they would use in the event of a real fire, to notify other operatives of a fire event and to initiate the response to a fire. The evacuation element of the drill is fully documented and lists the participants and the area where the evacuation drill took place. The evacuation response time is recorded.

In addition, an annual fire response test shall also be undertaken. The quarantine area is located on the concrete pad. To start, a portion of either the pre-composting material (reception) or oversize material will be designated as 'burning'. Using a shovel loader, a site operative will remove the 'unburnt' material and transfer it across the pad into the signed quarantine area. Once the drill has been completed, the 'unburnt' material will be returned to its applicable storage area. Post drill, the response will be evaluated by the Site Manager. Where the response has been judged to be inadequate, further training will be provided to staff.

## 2.4 Open Windrow Composting

RRS utilise open windrow composting systems to process green waste, meeting the requirements of a PAS100 compost. All moisture levels, temperatures and turning frequencies are undertaken in accordance to the Compost Quality Protocol and industry best practise. RRS's environmental permit also allows them to process sanitised food and green waste.

Once accepted and shredded, the waste is transferred to the composting pad, where the waste is formed into windrows to undergo sanitisation. The sanitisation phase usually lasts for approximately 2 weeks. Upon completion of the sanitisation phase, the windrows are turned (on the same concrete pad) to begin stabilisation. The stabilisation period occurs for 6 weeks.

Windrows during sanitisation and stabilisation are 4m (h) x 8m (w) x up to 45m (l) and are typically up to ~575 tonnes each. Gaps of suitable width are left between windrows to enable turning / monitoring / litter picking.

After stabilisation the waste will be processed through a screener. Once the waste has been processed and is PAS100 certified, the product is transferred to the product storage area towards the west side of the site.

Due to the nature of composting and its classification as an actively managed process, the elements of the EA's Fire Prevention Plan Guidance focusing on pile sizes and separation distances does not apply. The site will however, still employ a responsible practise to prevent fires occurring on site. Accordingly, this FPP will focus on the stages of the composting process which present a greater risk of combustion and where the EA's Fire Prevention Guidance does apply, namely waste reception/storage pre-composting and compost oversize storage.

## 2.5 In-Vessel Composting

RRS will utilise in-vessel composting techniques to produce a compost product certified to PAS 100 standards from comingled food and green waste. All moisture levels, temperatures and turning frequencies are undertaken in accordance with the Compost Quality Protocol and industry best practice. A description of the waste treatment arrangements for each phase of the composting process is provided below.

Once accepted onto site, the food and green waste load will be deposited in the IVC building and stored in piles not exceeding 750m<sup>3</sup>. Once an appropriate quantity of waste has been collected, it will be shredded within the IVC building before the waste material is loaded into each segregated in-vessel composting tunnel. The dimensions of each of the four IVC tunnels are 4 metres high by 6 metres wide by 34 metres long.

Once the tunnel is fully loaded, the automated aeration system is turned on within the SCADA system and the composting sanitisation sequence is initiated. The temperature and moisture content of the material are automatically monitored as part of the SCADA system, which minimises the risk of the material igniting during this phase.

The sanitisation process will last a minimum of 7 days during which period the critical limits must be met. After meeting the requirements of the sanitisation phase, material will be further treated through the maturation phase.

Post-IVC material will then undergo the maturation phase in open windrows on the external composting pad for 8 weeks.

After stabilisation the waste will be processed through a screener. Once the waste has been processed and is PAS100 certified, the product is transferred to the product storage area towards the west side of the site.

## 2.6 Waste Reception / Storage Pre-Composting Material

Accepted source-segregated biodegradable green waste is stored in a dedicated reception area. Storage time for green waste will not exceed 7 days and shall not be stockpiled in a quantity that exceeds a total of 500 tonnes (assumes a material density of 0.5) before shredding. The waste shall be stored in two separate piles. Length and width dimensions will not exceed 20m and height will not exceed 4m. The waste material undergoes shredding prior to being formed into a windrow.

**Table 2 – OWC Waste Reception Storage Parameters**

Material	Max height (m)	Length / Width (m)	Max Vol (m <sup>3</sup> )	Min Separation (m)
Pre-composting material (green waste only)	4	Variable	500	6

Accepted green waste, comingled food and green waste or food waste only is stored in a dedicated reception area within the IVC building. Storage time for this will not exceed 3 days and shall not be stockpiled in a quantity that exceeds a total of 377 tonnes (assumes a material density of 0.5) before shredding. Length and width dimensions of the waste pile will not exceed 20m and height will not exceed 4m. The waste material undergoes shredding prior to being formed into a windrow.

Under normal operating conditions at the IVC, operatives will try to remove all pre-composting waste material at the end of each working day. Where pre-composting waste does remain on site longer than the working day, a trained operative shall monitor temperature at night prior to leaving, in the morning once arrived on site and at the middle of the day during the following day. If temperature of the pre-composting pile exceeds >65°C, the pile shall be turned where necessary. If the site manager is of the view that the pre-composting pile needs to be prioritised due to increased temperature, operatives can work during weekends to clear a full IVC tunnel to make way for the IVC pre-composting waste at risk. Due to the high moisture content of the waste destined for IVC treatment, and with the short turnaround time for processing, the risk of combustion of the material is very low. Consequently, the risk of fire within the IVC reception hall is minimal.

**Table 3 - IVC Waste Reception Storage Parameters**

Material	Max height (m)	Length / Width (m)	Max Vol (m <sup>3</sup> )	Min Separation (m)
Pre-composting material (food and green waste)	4	20	600	6

## 2.7 Oversize Material

Oversize from the composting processes are stockpiled on the composting pad in one pile and shall not be stockpiled in a quantity that exceeds a total of 250 tonnes (assumes a material density of 0.5). From the pile, oversize material is continuously transported into the waste reception area by shovel loader, where it is reincorporated into the composting process by being mixed with new waste inputs. Oversize material can be stored for a maximum of 3 months, but this timescale is not representative of normal operational parameters as the oversize material is constantly reincorporated into the process. There is only one oversize pile and it has a 6m separation distance surrounding it. Length and width dimensions will not exceed 20m and height will not exceed 4m.

**Table 4 - Oversize Material**

Material	Max height (m)	Length / Width (m)	Max Vol (m <sup>3</sup> )	Min Separation (m)
Oversize	4	Variable	500	6

## 2.8 Non-PAS100 Material

Non-PAS100 material is continuously reincorporated back into the process at the reception area. Non-PAS100 is therefore not stockpiled on site.

## 2.9 PAS100 Compost Material

As the compost material has gone through the entire process and has met PAS100 criteria, it is now classed as a product and not a waste so is therefore out of the scope of fire prevention guidance. The site produces three products certified to PAS100. Products that are 0-40mm or 10 – 60mm shall be stored on the compost storage area, in open storage. 0-10mm compost is stored undercover, where possible. PAS100 compost is to be stored on site for a maximum of 12 months.

## 2.10 Waste Wood Material

Waste wood received on site for shredding is stockpiled in the southeast corner of the composting pad and shall not be stockpiled in a quantity that exceeds a total of 1,000 tonnes. The waste wood material can be stored for a maximum of 3 months prior to shredding. The shredded wood is either used in the biomass boiler (Grade A) or transferred off site for onward processing (Grade C). There are two waste wood piles with a 6m separation distance. Length and width dimensions will not exceed 20m and height will not exceed 4m.

**Table 5 - Waste Wood Material**

Material	Max height (m)	Length / Width (m)	Max Vol (m <sup>3</sup> )	Min Separation (m)
Oversize	4	Variable	500	6

Aggregates and Soil manufacturing is not considered a fire risk and shall be stored in piles on site for no longer than 12 months.

## 2.11 Contaminant Storage

Those wastes received which are unsuitable for processing or not permitted under the bespoke environmental permit are rejected in line with the site's waste rejection procedure. Any minor contaminants within larger loads or contaminants from the screening process are stored with a skip. Once the containers are full, the waste materials are removed from site for treatment at a suitably licenced facility. The maximum period this material can be stored is 1 month, but this is unlikely under normal operating procedures.

## 2.12 Quarantine Area

The site will employ two quarantine areas. Quarantine areas are at least 6m from any waste bay or waste pile or the site perimeter. The quarantine areas are large enough to store 50% of the largest waste pile on the site. The areas will be clearly marked on the concrete with the aid of a mobile sign. The quarantine areas will be kept free from material at all times, except in emergency situations. Please see Annex B – Site Layout Plan for location of quarantine areas.

**Table 6 - Quarantine Areas**

Quarantine Area	Volumes
1. Mobile	300m <sup>3</sup>

2. Fixed – south of IVC building	300m <sup>3</sup>
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### 2.12.1 Quarantine Area Management

Long term storage of material in quarantine area will not form part of the standard operating practice at the quarantine area. Temporary storage of material in the quarantine areas will purely be used under rejection procedures and in emergency situations, such as in the event of a hot load. The quarantine area will also be utilised for training. If a rejection or emergency situation does arise the material will be moved as soon as possible once the situation has been dealt with. If there is a fire the use of multiple quarantine areas will ensure there is always a cleared space to move the material to. As previously stated, a mobile sign will move with the active quarantine area to ensure it can be easily identified.

In the event of a fire, where safe to do so, heavy plant will move unburnt material in the vicinity of the fire to the quarantine area, reducing the risk of the fire spreading. The use of two separate quarantine areas will ensure one quarantine area is always free. The location of the quarantine areas has been selected to ensure the waste can be transported to the chosen area in a timely manner, meeting the timeline set out in the EA's Fire Prevention Plan Guidance; guidance states as soon as possible but no later than one hour after the fire starting.

### 2.13 Comments

The site has records of all contracts to supply for PAS100 compost and all documentation is stored in the site office.

The site will minimise the risk of fire spreading by controlling the flammable material on an ongoing basis.

If a fire occurs on site the operatives will call 999 if deemed necessary, all staff will proceed to the emergency point. If the fire is containable, for instance on a windrow, the site will douse the windrow with water.

The site will also consider:

- Recycling firewater if it's not hazardous and it's possible to reuse;
- Applying water to cool unburned material and other hazards, taking care to prevent this water causing or adding to water pollution and/or increasing air pollution;
- Separating unburned material from the fire using heavy plant;
- Separating burning material from the fire to quench it with hoses or in pools of water (this will reduce the amount of firewater produced).

### 3.0 SOURCES OF IGNITION

The main sources of ignition have been identified and mitigated in the following section. It is worth noting that not all sources can be practically identified.

#### Main Sources of Ignition on Site:

- Core temperature of windrows– self combustion
- On-site machinery
- Fuel tanks
- Extreme weather – lightning
- Smoking
- Arson
- Site Infrastructure electrical faults
- Hot works
- Build-up of loose combustible waste, dust and fluff
- Reactions between incompatible or unstable waste
- Naked lights
- Industrial heaters
- Open burning
- Hot loads
- Leaks and spillages of oils and fuels

#### 3.1 Self-Combustion

Waste materials that are at risk of self-combustion if stored and not aerated include:

- Green waste;
- Food and green waste;
- Waste wood; and,
- Compost

#### 3.2 Preventing Self-Combustion

- Windrows are monitored for temperature daily during sanitisation and weekly during stabilisation. If temperature increases above 85°C then windrows will be turned on the concrete pad to cool down. Probes are inserted into the windrow, at a minimum of 0.5 metres below the windrow surface in several areas of the windrow dependant on size to achieve a representative temperature (industry practice).
- IVC tunnels are monitored for temperature and moisture and are turned to industry best practice (PAS100 certified).

- Within the IVC tunnels, temperature monitoring is undertaken within the biofilter media and any temperature above 35°C triggers the system to ventilate the biofilters to cool them down.
- Moisture levels are monitored in windrows on a daily basis during sanitisation and weekly during stabilisation. If moisture levels measure a 5 on a squeeze test, then leachate or fresh water will be added to the compost depending on the process stage.
- Turning of open windrows is recorded through the site manager and takes place at least once during sanitisation and once during stabilisation.
- Daily checks are made to identify any hot spots within waste piles at risk of combustion as highlighted above in Section 2.4, including the waste wood. Each pile is closely inspected by a competent person (suitably trained staff member) to identify signs of excess heat such as excessive steam or smoke. If piles are identified to be at risk of combustion, then temperature and moisture checks will be made, and appropriate action will take place – for example spread to cool down or wet if dry.
- Pre-composting material is not actively monitored for temperature and moisture due to its short storage period.
- Storage time for PAS100 compost is up to 12 months, however, this is unlikely as there is high demand for the product. If material is stored on site after stabilisation is complete, then temperature and moisture is monitored on a monthly basis. All material leaving the site is logged and can be tracked throughout the system by batch codes.
- Heating during hot weather has been taken into account within this Fire Prevention Plan and it has been decided that shading of material is not seen to be required on site due to the use of a daily check on site and the quick turnaround time under normal operation.
- Pre-composting food and green waste material shall only be stored in the IVC building for a maximum of 72 hours.
- Material is stored in its largest form prior to processing.
- All waste piles are stored within the guidelines of the Fire Prevention Plan.
- A fire watch will be conducted at regular intervals throughout the day to detect signs of a fire caused by dust settling on hot exhaust and engine parts. Fire watches will be conducted once in the morning, once in the afternoon and once at the end of the day. The fire watch will be conducted by carrying out visual checks for dust build up.

### 3.3 Combustion Emissions

- Compost is a slow burning material that produces smoke and releases particles into the air when ignited. There is no risk of explosion.
- Oversize material will produce smoke as will waste wood.



- Fresh green waste burns similar to dried wood however produces more smoke due to moisture. Fresh green waste burns quickly.

### 3.4 Stock Rotation

Oversize material is reincorporated back into the process at the reception area in the formation of windrows. The oldest oversize material is the first to be reincorporated into batches by sourcing oversize from one side of the pile and adding new oversize to the other side, preventing older oversize material remaining on site.

### 3.5 Plant / Machinery

Plant has the potential to become a fire risk if there is a malfunction or if it is not maintained correctly. All plant on site will be fitted with fire extinguishers. Mobile plant will be stored in a designated area next to the barn when not in use and overnight (see Annex B - Site Layout Plan). RRS is committed to reducing these risks by performing visual checks and maintenance activities.

**Table 7 - Major Plant on Site**

Plant	Number	Fire Extinguisher
3060 Doppstadt slow speed shredder	1	Built in fire suppression.
Wilibald Shredder	1	Handheld extinguisher.
Doppstadt trommel screener	1	Handheld extinguisher.
Doppstadt screener	1	Handheld extinguisher.
Newenhauser screener	1	Built in fire suppression.
JCB Loadalls	2	Extinguisher under driver's seat.
Manitou Loadall	1	Extinguisher under driver's seat.
Excavators	2	Handheld extinguisher.

### 3.6 Plant Maintenance

All plant is checked daily by a competent member of staff. Faults or anomalies are recorded in the site diary and dependent upon the severity acted upon immediately. If faults or anomalies are identified, then operations for the plant in question will be ceased until rectified.

Daily checks are made on all machinery for dust, if high levels are detected then the machine must be shut down and cleaned. Machinery is wiped down at least once a week or as required by the outcome of the daily checks.

A planned preventative maintenance regime is operated on site. As part of this regime a strict inspection is carried out on each vehicle in line with manufacturer's recommendations.

### 3.7 Preventing Sparks from Loading Shovels

Sparks caused by loading shovel buckets are rare due to the training of the operatives and the nature of the materials being transported. Sparks are highly unlikely to cause a fire with compost as it typically has ~50% moisture content. If sparks do ignite waste material, operatives are trained to use fire extinguishers to stop the fire from spreading then the member of staff must follow emergency procedures. If this is unsuccessful then the member of staff must follow emergency procedures. Further prevention measures involve not moving windrows and waste materials when they and the concrete pad are dry or have low moisture content.

### 3.8 Mitigating Risks from Hot Exhausts

Exhausts have the potential to become hot and therefore present a risk to surrounding material on site.

- All exhausts on plant or vehicles are designed to reduce risk to the surrounding environment by being placed in isolated locations.
- There are designated traffic routes across the site to minimise unnecessary contact between plant and material.
- Vehicles or Plant are not run continuously for more than 3 hours at a time and are cooled for a minimum of 15 minutes.
- Operators are instructed to carry out a visual check of the machine after stopping and before leaving site for hot spots/smouldering dust in the immediate area surrounding the exhaust.

### 3.9 Fuel Tanks

One double walled 5,000 litre fuel tank is stored on-site which can take 110% of the volume of fuel stored in the tank in line with the requirements of Section 2.2.5 of SGN S5.06. The tank is clearly marked and carries signs showing the material contained within and its maximum

capacity. Material is not stored or transported within 6m of the fuel tank unless they are refuelling. A fire extinguisher is located adjacent to the fuel tank.

**Table 8 - Fuel Tanks**

Storage	Capacity	Content	Location	Bunding
Tank	5,000l	Diesel	See Site Layout Plan	Tank is double walled, so no leakage can occur.

There are also a number of gas cylinders stored on site. These are to be situated in a gas cage in the maintenance shed when not in use.

### 3.10 Extreme Weather

On the rare occasion that extreme weather such as lightning occurs, the site the following procedures are taken:

- Windrows and all other storage piles are lowered and flattened to reduce risk of being hit by lightning.
- All machinery is transported >6m from any waste material.
- Once machinery is moved, the operatives will seek shelter.

### 3.11 Smoking

The site has a strict no smoking policy on areas of operation and storage. Smoking takes place at a designated smoking area located outside the site entrance.

### 3.12 Arson

The facility lies within a gated facility which is bunded on 4 sides (except where the gate for accessing the site is) and is situated within a rural location.

Within the specified licensed area, the site is closed (gate and bunding) and secured outside of operating hours.

The access road which connects the site is gated at the site entrance from the highway and these gates are locked outside all normal operating hours. The doors to the IVC building will remain closed when not in use.

The boundary fences (which are fixed on top of the bunds to the north and west of the facility) to the application site and gate from the internal access are checked on a regular basis for

damage or signs of attempted entry. Such occurrences are entered in the site diary and any damage is repaired at the earliest opportunity.

Tools will be stored in a secured shed onsite.

All visitors will be required to sign in at the Site Office on arrival and exiting the site.

### **3.13 Site Infrastructure Electrical Faults**

The electrical system will be maintained to a safe and correct standard. Certification and maintenance will be undertaken by a qualified electrician. Annual checks will be made on site electrical infrastructure and if a fault is found a qualified electrician will attend site and fix the fault.

### **3.14 Hot Works**

RRS currently use a system of work permits for any hot works carried out on site as well as a site safe working practise (SWP). If any hot works, such as welding or cutting need to be carried out on site, staff will follow the site's SWP. After completion, the hot works will be checked before the permit is signed off as complete. These checks at the end of the hot works ensure signs of the start of a fire are not missed. A fire watch shall be conducted at the site of the hot works one hour after they have been completed to ensure there is no sign of fire. This check is recorded within the site diary. The SWP will be read and signed by all relevant employees. Hot works are only to be carried out by trained operatives. The training and qualification records of these operatives are kept on site.

### **3.15 Build-Up of Loose Combustible Waste, Dust and Fluff**

To prevent the build-up of loose combustible waste, dust and fluff on site, an operative will carry out a daily patrol around the site looking for any loose waste or fluff. If any is observed, it shall be cleared. The daily patrol shall be recorded in the site diary.

### **3.16 Reactions Between Incompatible or Unstable Waste**

Upon arrival at site all waste loads shall undergo visual inspections, once tipped, by a trained operative. If an operative notices any signs of incompatible or unstable waste the load shall be spread on the quarantine area for further inspection. If incompatible or unstable waste is found it shall be removed from load, if safe to do so. If this is not possible the waste load shall be rejected and stored in the quarantine area for removal from site in line with the site's waste rejection procedure.

### 3.17 Naked Lights

There will be no naked lights on site.

### 3.18 Industrial Heaters

There are no industrial heaters used on site.

### 3.19 Open Burning

There will be no open burning on site.

### 3.20 Hot Loads

If any waste accepted at site passes the initial documentation check but upon tipping is subsequently identified to be hot via the visual inspection, e.g. the presence of steam, the load will be moved to the quarantine area, segregated from other wastes and the water hose will be used to douse the load until it is suitably cooled.

### 3.21 Leak and Spillages of Oil and Fuels

Any liquid spillages will be cleared as soon as practicable by depositing absorbents on the affected area. Spill kits are readily available and clearly signed. The site possesses a 240litre spill kit next to the weighbridge office. The absorbents will then be suitably contained prior to being transferred to a suitably permitted facility.

## 4.0 DETECTING AND MANAGING FIRES

### 4.1 Daily Checks

Daily checks are made across the site, they seek to identify and mitigate potential hazards. If a hazard is identified from the daily checks then it is recorded in the site diary and acted upon immediately with appropriate action. Daily checks take place on:

- Site Infrastructure – Senior staff check for damage or abnormalities in the site infrastructure.
- Plant – All plant is checked before use (see section Plant Maintenance).
- Waste Piles – Trained staff assess all waste piles manually through observation and touch for excessive heat and ensure that dimensions are correct (See section Preventing Self-combustion).

### 4.2 Training

All new employees will be subject to an induction programme which will include familiarisation with the Permit Management System and this FPP. This will also include training of how to identify 'hot loads' when accepting waste on site and 'hot spots' within waste material stored and processed on site. Staff will also be trained on how to use fire extinguishers and fire drills are undertaken annually and documented.

Regular toolbox talks will be held with employees and documented accordingly, in order to communicate any updates / changes made to the Fire Prevention Plan.

This FPP will be stored in the Site Office so that it can be referenced for induction, on-going training, testing and other management review purposes. All training undertaken will be logged in a training matrix.

### 4.3 Emergency Action Plan

All employee's and visitors sign in when they arrive on site and then out again once they leave. In the event of a fire, the employee and visitor book is collected by the Site Manager and taken to the assembly point.

In the event of fire, the alarm will be raised verbally by shouting **FIRE, FIRE, FIRE** and all operatives will be informed by a fire horn. Immediately personnel will leave their work area and proceed to the fire assembly point (see site plan). Upon receiving confirmation via the fire horn, the fire brigade will be called by the site management or supervisor available.

The specific arrangements for fire are as follows:

- A. Fire extinguishers are provided around the premises and will be marked by signage;
- B. If an employee discovers a fire, the alarm should be raised. Competent individuals will be trained to use fire extinguishers; other employees should not tackle a fire but proceed safely to the assembly point.

The site manager, or a designated person if the site manager is not on site, will be responsible to see the premises are clear and account for everyone at the assembly point.

#### 4.4 Fire Infrastructure on Site

- **Fire Warning System** – All operatives informed by the fire horn if event occurs;
- **Emergency Lighting** – None;
- **Fire Safety Signs and Notices** – A copy of the Site Plan is located in the site office;
- **Fire Suppression System** – The IVC building is not fitted with a fire suppression system as the infrastructure cost of providing sufficient firefighting water and suitable containment of fire water is seen to be hugely disproportionate to the fire risk presented by the pre-composting waste material stored there. As outlined above, the pre-composting material has a high-water content and is only stored in the reception hall for a short period of time;
- **Access to Mains Water** – Access to mains water is available via a hydrant on Lancaster Road at the end of the driveway into site (see map 2 Location of Fire Hydrant). The fire and rescue service were unable to provide the flow rate of the hydrant due to the variability experienced in the area. It is assumed in the event of a fire occurring at site the fire and rescue service will be able to contact the water utility company to request that pressure is increased to the hydrants within the area if the flow is not adequate.
- **Firefighting Equipment (see Site Plan)** –
  - Fire blanket in canteen.
  - Total extinguishers: 24 situated across site as follows:

**Table 9 - Fire Extinguishers**

Ref	Location	Contents	Ref	Location	Contents
1	Canteen	CO2	13	New Shed Picking	Powder
2	Canteen	Water	14	Picking Line	Powder
3	Office (First Floor)	CO2	15	Picking Line	Powder
4	Office (First Floor)	Water	16	Screen 1	Powder
5	Workshop	Powder	17	Screen 2	Powder
6	Workshop	Foam	18	Screen 3	Powder

7	Welder Shop	Powder	19	Manitou	Powder
8	Weighbridge	Powder	20	JCB	Powder
9	Biomass Boiler	Powder	21	JCB	Powder
10	Biomass Boiler	Powder	22	360	Powder
11	Weighbridge Office	Powder	23	360	Powder
12	New Shed Picking	Powder	24	Screen Grab	Powder

All fire extinguishers undergo a visual inspection on a quarterly basis and serviced annually by an approved external contractor. This is logged through visual inspection sheets and recorded in the site diary.

- Four water taps on site located in the following locations:
  - 1) Outside canteen.
  - 2) Near power wash, behind weighbridge office.
  - 3) Water supply in boiler room.
  - 4) Water tap on 522m<sup>3</sup> leachate tank.

#### 4.5 Firefighting Strategy and Suppressing Fires

The site has an active firefighting strategy in place and will seek to extinguish fires as quickly as possible, either through on-site fire equipment or through supporting emergency services.

For small fires, fire extinguishers are available. All operatives are trained to use this equipment.

For a large fire arising in the material piles, the fire shall be managed by the Fire and Rescue Service via recirculated water from the large leachate tank with support from the local fire hydrant. The operator shall support the Fire and Rescue Service via active firefighting measures, such as using plant to move unburnt material in the vicinity of the fire to the quarantine area under the instruction of the Fire and Rescue Service. All fire water shall be captured on site in the large leachate tank as well as on the pad once the tank is full. Once the fire has been extinguished, any fire water which has been captured on the pad shall be tankered off site to a suitably licenced treatment facility. Any fire water captured within the leachate tanks shall be tested to check its characteristics. If it is suitable, the fire water shall be utilised in the process for moisture amendment.

It should be noted that due to the high moisture content of the IVC waste, and the short turnaround time for processing, the risk of combustion of the material is very low. However, if a heating event occurs in the waste reception pile within the reception hall, the alarm system



will be triggered, which in turn will notify RRS staff who can then attend site at a very early stage. Upon identification of the material at risk, it is removed from the material pile by loading shovel and spread on the floor. The material is then dampened and moved to tunnels where it is located within a controlled environment where the material can be sprayed and where oxygen and moisture can be controlled as necessary within a sealed environment.

Furthermore, each of the IVC tunnels contain a sprinkler system which can be utilised if a fire originates in a tunnel. As the waste in the tunnels will be part of the actively managed process and will be subject to regular monitoring, the chance of a fire originating in a tunnel is reduced. If materials or plant becomes ignited, then every safe effort will be made to suppress the fire and move unburnt material in the vicinity to the quarantine zone.

If materials or plant becomes ignited, then every safe effort will be made to suppress the fire and move it to the quarantine zone. Should material that is on fire in the IVC building be treated with water, the fire water runoff shall be collected via the sealed drainage system in the IVC building. Should the leachate tank that this is connected to fill up, the drainage channel that feed the tank will back fill. Should these fill up, the fire water shall run onto the OWC pad and be contained via the drainage system serving that area.

#### 4.6 Out of Hours Detection

The Site Manager shall perform a visual fire check at the end of each working day to detect any signs, such as smoke, of a potential fire. If found, the emergency response to fire contained within this document shall be enacted. The same check shall also be performed at the start of each working day. This reduces the risk of a fire occurring out of hours.

#### 4.7 Fire Water Containment

The external pad containing the waste material is served by a contained drainage system to prevent leachate produced during the composting process and any rainfall that lands on the concrete pad from running off the pad and onto the surrounding land. The composting pad is approximately 25,000m<sup>2</sup> and has been built with an engineered fall to prevent water/leachate from flowing off the pad. The pad has been constructed in such a way that all water/leachate on the pad will flow from the east and west to the centre of the pad. Once at the centre of the pad, leachate/surface water will be captured via surface drains and subsequently be directed to either of the two leachate tanks. The leachate/surface water is pumped into the tanks. The tanks are never kept at capacity as leachate from the tanks is regularly re-circulated into the compost.

The 522m<sup>3</sup> leachate tank will always operate with a retained volume of 250m<sup>3</sup> inside it. This provides approximately 75 minutes of firefighting water (250m<sup>3</sup> / 3.33m<sup>3</sup>). This should provide an adequate amount of time for recirculation of fire water to the tank to occur and the local

fire hydrant can also be used in addition, if required. There is therefore a volume of 272m<sup>3</sup> available for fire water capture in this tank. Please note, the smaller 124m<sup>3</sup> leachate tank is not factored into the containment calculations to provide a buffer. The water contained in this tank will constantly be recirculated from the pad back to the tank and then be used by the Fire and Rescue Service. The pump to send the water back to this tank shall be sized according to the fire water calculation in Environment Agency Fire Prevention Plan Guidance. This volume is 3.33m<sup>3</sup> (see section 4.6.2 below).

#### 4.8 Storage Tanks

All storage tanks are checked on a weekly basis for signs of damage or failure.

**Table 8 – Fresh Water and Leachate Storage Tanks**

Tank	Capacity	Content	Bunding
OWC Leachate Tank	124m <sup>3</sup>	Leachate from waste piles.	Containment provided by pad.
OWC Leachate Tank	522m <sup>3</sup>	Surface water capture and use for firefighting.	Containment provided by pad.
IVC Leachate Tank	TBC	Leachate from waste piles in IVC building / tunnels.	Containment provided by pad.

#### 4.9 Fire Water Capacity

The Fire Prevention Plan V3 states that 'A 300m<sup>3</sup> pile of combustible material will normally require a water supply of at least 2,000 litres a minute for a minimum of 3 hours'. It is worth noting that compost would absorb the vast majority of water added and that it does not burn like a regular flammable material. The figures quoted from the EA's fire prevention plan are therefore unlikely to be representative of the compost waste on site.

The calculation for the amount of fire water required to extinguish the largest waste pile on site is shown below.

- Volume of Oversize Material – 600m<sup>3</sup>
- Water required per minute – 4,000 litres (4.0m<sup>3</sup>)
- Duration – 180 minutes

**Water required per minute (4.0m<sup>3</sup>) \* Duration (180min) = 720m<sup>3</sup> of required capacity**

The above demonstrates that the available capacity within the leachate tanks is less than the amount of water potentially required to fight a fire in the largest pile. Where the leachate tanks

are unable to contain the amount of fire water produced on site, the fire water will back up through the drainage channels and flood the pad. The pad has a capacity of 493m<sup>3</sup> and is constructed in such a way to prevent the runoff of surface water off the site. The site therefore possesses the required drainage/containment capacity to capture the maximum amount of fire water required via the use of the leachate tanks and impermeable concrete pad.

#### 4.10 Contingency Plan

If a major fire occurs, then the site will put the following procedures in place:

- All incoming loads will be diverted, and the site will be closed until implications from the fire have been resolved;
- All waste remnants left by a fire shall be inspected and potentially processed onsite or transferred to a suitably permitted facility. If necessary, a specialist contractor will be engaged to assist.
- Any fire water which has been captured on the pad shall tankered off site to a suitably licenced treatment facility. Any fire water captured within the leachate tanks shall be tested. If it is suitable, the fire water shall be utilised in the process.
- In the rare event material cannot be turned or processed within 2 weeks, then it must be removed off site to a suitably permitted facility, unless agreed otherwise with the Environment Agency.
- There are a number of additional contingency sites where waste will be able to be sent for processing. Waste will be diverted from site to the following: Brosters Environmental Ltd, D and A Scrivens Recycling or Coopers Recycling.
- All the sensitive receptors identified in this fire prevention plan shall be contacted, where practicably possible, via door to door visits and the situation explained or via a leaflet drop providing information and a contact number. RRS will also provide a helpline for any sensitive receptors to contact the site.

## 5.0 SITE LOCATION

### 5.1 Fire Service Route

The main route for the fire brigade to the site will be via Hornby's Lane off Lancaster Road (See Map 1 – Composting Facility Site Access).

**Figure 1 - Composting Facility Site Access**



For wind rose and prevailing wind direction please see Section 5.3 below.

## 5.2 Sensitive Receptors

Please see Figures 2 & 3 below for sensitive receptors and borehole locations surrounding the site, in an approximate 1km radius. Please see Figure 4 for location of site in relation to source protection zones.

**Table 9 - Sensitive Receptors Surrounding Site**

Receptor	Distance from Site (m)	Coordinates (x,y)
HR01a – Moss Cottage Farm	130 (N)	341093, 444780
HR01b – Light Industrial Unit	165 (N)	341093, 444780
HR02 – Lousana Farm Works	488 (E)	341531, 444584
HR03 – Mose Side Farm	491 (E)	341529, 444500
HR04 – Prospect Farm	1,043 (SE)	341996, 444150
HR05 – The Bungalow	814 (SE)	341708, 444101
HR06 - Mayfair	984 (SE)	341790, 443929
HR07 – Chathill Farm	439 (S)	341280, 444201
HR08 – Bull Foot Cottage	1,144 (S)	340905, 443436
HR09 – Freshfields Farm	1,109 (W)	339958, 444342
HR10 – Birchcroft	1,162 (W)	339888, 444664
HR11 – Residential Property	990 (NW)	340230, 445137
HR12 – Clark Cottage	1,018 (NW)	340407, 445366
HR13 – Carr House	1,069 (NW)	340490, 445485
HR14 - Invergorden	1,132 (NW)	340611, 445617
HR15 – Ivy Farm	1,074 (NW)	340755, 445604
HR16 – Brook Farm	618 (N)	340952, 445182

Figure 2 – Map of Site Sensitive Receptors

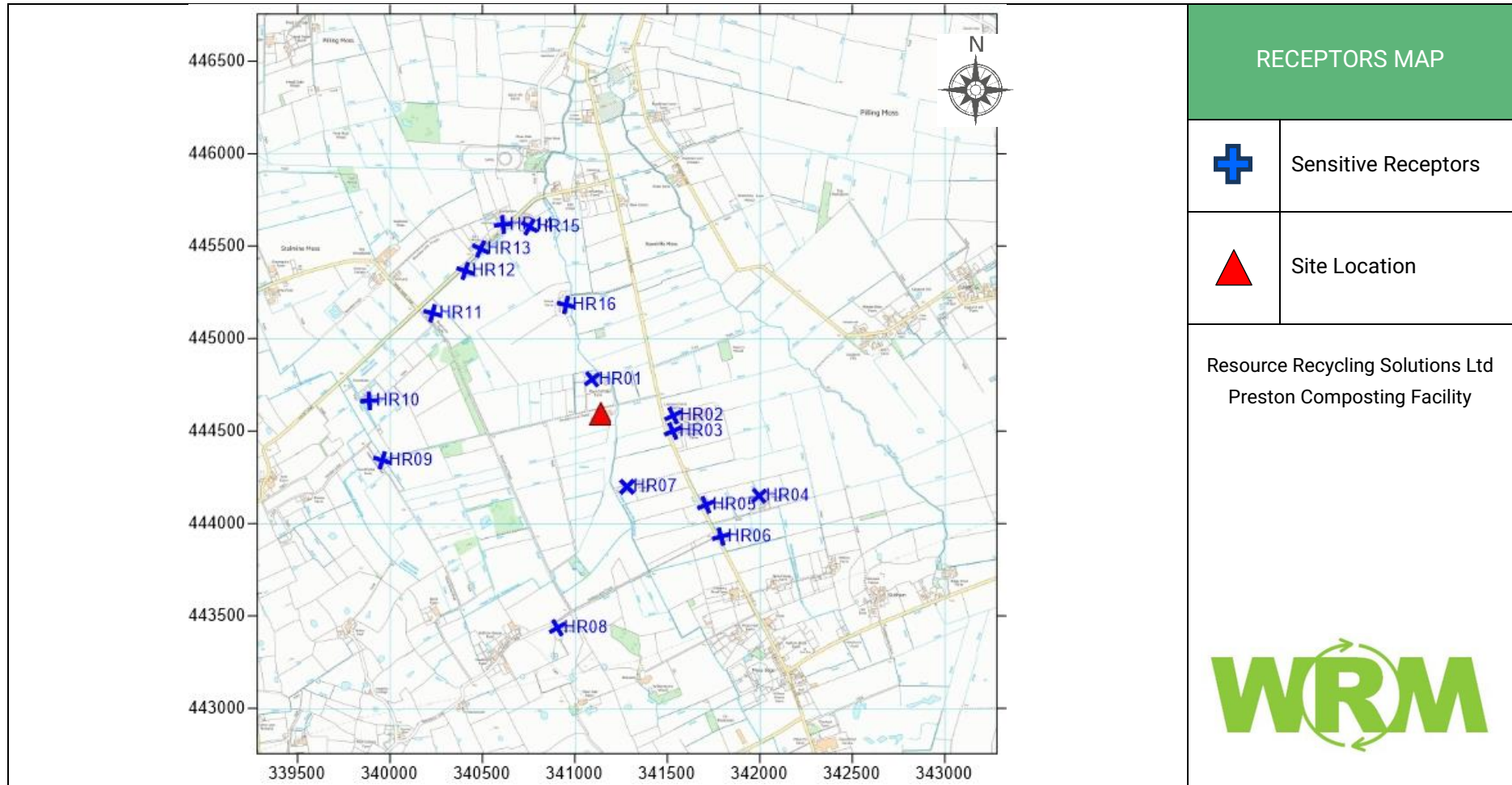


Figure 3 – Map of Site Local Boreholes

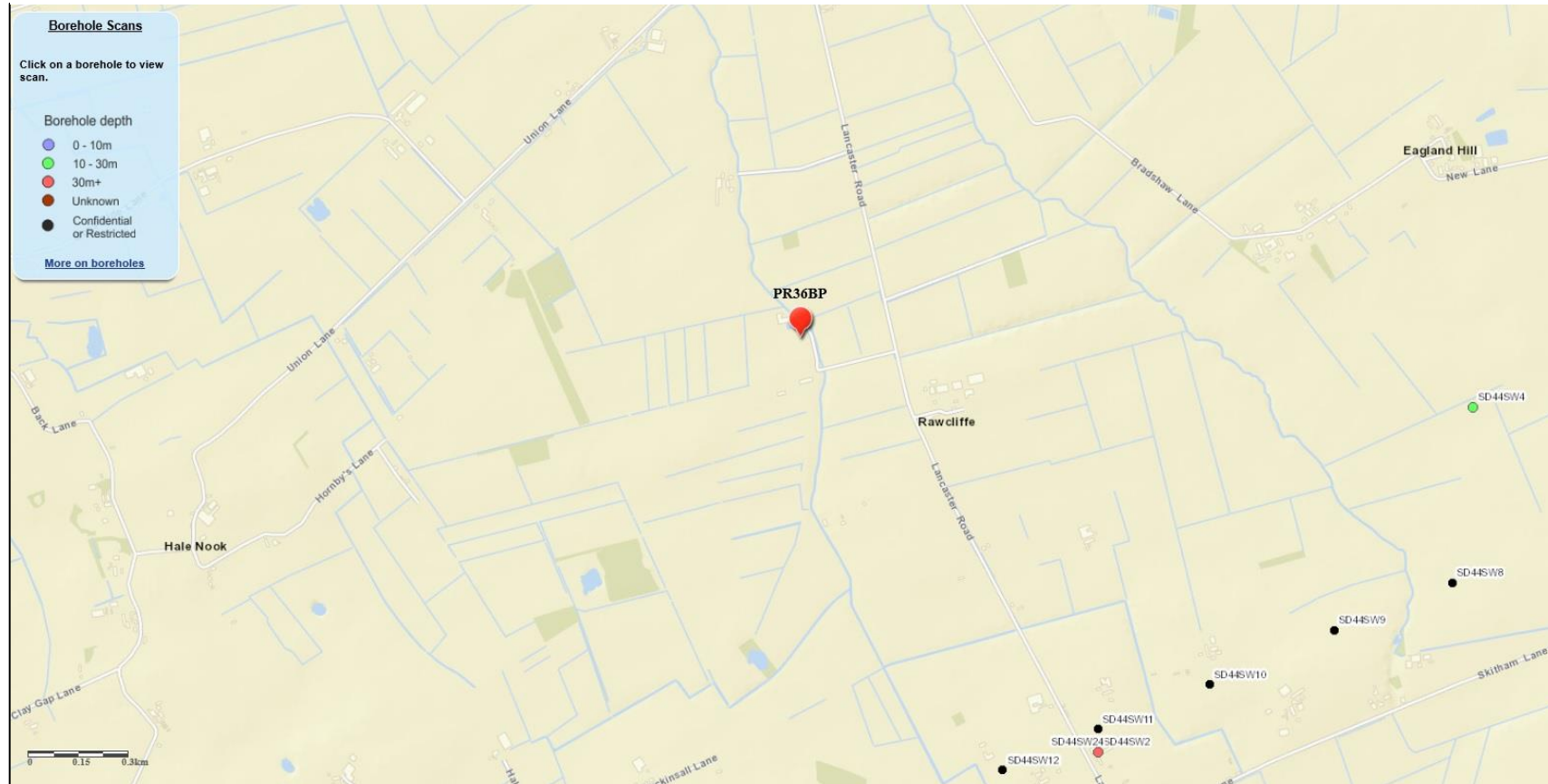


Figure 4 – Map of Site Groundwater Source Protection Zone



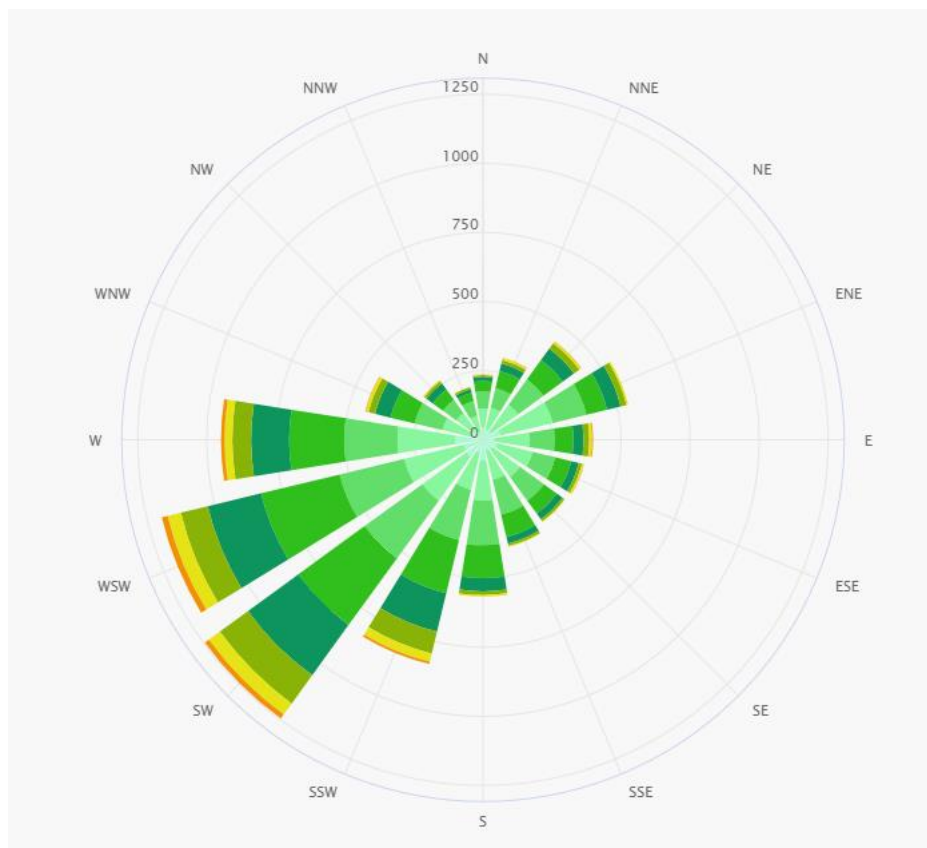


### 5.3 Historic Wind Direction

Information on wind direction has been derived from Garstang over the last 30 years. This data is illustrated by the wind rose in Figure 5. Wind data is collected daily as part of the routine monitoring on site. 8-point wind directions are provided below, note that calm days are also included to provide a complete data record.

**Table 10 - Wind Direction and Occurrence in Garstang Over the last 30 Years**

Wind Direction (from)	N	NE	E	SE	S	SW	W	NW
% Occurrence	6	11	9	9	16	28	16	5



**Figure 5 - Windrose for Garstang**

## 6.0 FIRE SAFETY DEFICINECES TO BE RECTIFIED

Fire Safety Deficiencies to be Rectified			
Deficiency/Rectification	Priority	Date to be rectified	Date rectified
Should RRS replace the current fuel tank, it is advisable to relocate it away from the barn storage area, where hot works is undertaken. Consideration should also be given to the risk of impacts from vehicles manoeuvring on the site when relocating the fuel store. Further consideration should be given to the proximity of the storage area to the arable land located adjacent to the site, during summer months a fire onsite could easily spread if the crops are dry.			
The storage of other oils such as motor lubricants and greases should be contained in a designated area, given their flammable nature it be advised to ensure this store is away from other buildings, the use of a small shipping container, with appropriate sized spill kits and extinguishers and hazard signage, is often best practice. However, this should be confirmed through COSHH risk assessments, to ensure appropriate handling and storage requirements are confirmed.			
RRS need to purchase a gas cage for gas cylinders when not in use. This is to be situated in the maintenance shed.			

<p>RRS may also benefit from the introduction of fire marshal training of staff. Furthermore, all staff should be involved in fire drills undertaken at planned intervals, no less than annually. Records of fire drills and response times should be kept and maintained to demonstrate due diligence.</p>			
<p>Consideration should also be given as to the need for an automated fire alarm system, particularly for the barn onsite where hot works is been undertaken. Should an automated system be installed it must be serviced and periodically tested, this includes the testing of emergency lighting and backup generators which may come into use should a fire take place on the site.</p>			

## ANNEX A – FIRE SAFETY MANAGEMENT PLAN

# FIRE SAFETY MANAGEMENT PLAN

<p><u>Fire Safety</u> Person with Overall Responsibility for Fire Safety</p>	<p><u>Julie Gardner</u></p>
<p><u>Fire Risk Assessment</u> Person responsible for commissioning &amp; review</p>	<p><u>Julie Gardner</u></p>
<p><u>Maintenance Programme</u> Person Responsible for:</p> <ul style="list-style-type: none"> <li>• Maintenance of fire safety provisions</li> <li>• Fire alarm</li> <li>• Emergency lighting</li> <li>• Firefighting equipment</li> <li>• Escape routes</li> <li>• Fire safety signs/notices</li> </ul>	<p><u>Julie Gardner</u></p>
<p><u>Emergency Action Plan</u> Person responsible for production &amp; review</p>	<p><u>Julie Gardner</u></p>

# Resource Recycling Solutions Ltd

## Emergency Action Plan

**Assembly Point** – At site entrance - see site plan.

**If you discover a fire:**

1. Raise the alarm immediately. Shout FIRE, FIRE or the fire horn.
2. Tackle the fire using the appropriate firefighting equipment (only if you feel safe and are trained to do so).
3. Leave the premises by the nearest safest available exit.
4. Report to the assembly point.
5. Call 999 for the fire brigade by mobile phone, if not already done.
6. Do not re-enter until cleared to do so by the fire and rescue service.

**If you hear the alarm:**

1. Leave the premises by the nearest safest route.
2. Do not stop to collect personal belongings.
3. Ensure any one you meet on the way out is aware of the fire.
4. Report to the assembly point.
5. Call 999 for the fire brigade by mobile phone, if not already done.
6. Do not re-enter until cleared to do so by the Fire and Rescue Service.

**Machine / Mobile Plant Operators:**

1. Clear area of vehicles if safe to do so.
2. If possible and safe to do so, commence active firefighting measures such as moving unburning waste material to the quarantine area.
3. Remove mobile plant from site to facilitate access for the Fire and Rescue Service, save for any equipment that is deemed safe and appropriate to be used in tackling any fire, e.g. shovels and excavators.
4. Report location of relevant vehicles remaining on site to the Fire and Rescue Service at the assembly point.

**Site Management:**

1. Site manager, site supervisor or delegated person to collect visitor book and take to fire assembly point.
2. Site manager or site supervisor to supervise the evacuation of all persons on site.

3. Ensure all visitors and contractors are taken to the assembly point.
4. Assist any disabled persons with their evacuation as necessary.
5. Site manager to report to the scene of the fire.
6. Site manager, site supervisor or delegated person to carry out roll call at assembly point.
7. Liaise with Fire and Rescue Service upon arrival.
8. Brief Fire and Rescue Service of any danger areas on site.
9. Do not allow anyone to re-enter any building until advised that it is safe to do so, by the Fire and Rescue Service.

### **VISITORS**

- ENSURE ALL VISITORS AND CONTRACTORS ARE TAKEN TO THE ASSEMBLY POINT
- ASSIST ANY DISABLED PERSONS WITH THEIR EVACUATION AS NECESSARY

## ANNEX B – SITE LAYOUT PLAN

