

## Fire Prevention Plan

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**IN CASE OF A FIRE EMERGENCY GO TO EMERGENCY ACTIONS AT APPENDIX 11**

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## Appendices to this FPP

FPP Appendix 01: Site Plan (drawing 020.1_09_010 'Process Layout (Wet & Dry)) and drainage fall lines
FPP Appendix 02: Sensitive Receptor Plans (drawings 02.1_9_004/005/006 (1km, 2km, 10km))
FPP Appendix 03: Table of wastes stored and pile sizes
FPP Appendix 04: Equipment Register/Information
FPP Appendix 05: Thermal Check Sheet Template
FPP Appendix 06: Site Diary Template
FPP Appendix 07: Fire Training Certificates
FPP Appendix 08: Fire Safety Audit Checklist
FPP Appendix 09: Fire Safety Training Programme
FPP Appendix 10: Fire Safety Training Record
FPP Appendix 11: Emergency Actions

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## Fire Prevention Objectives

Sites that store combustible wastes are at risk from fires on sites. These events can pose an environmental risk to receptors off site, both from the smoke plume from the fire and from the firewater or foam/powder runoff created by any firefighting activities. Sites storing combustible materials such as paper, plastics, cardboard and scrap metal are required to have in place a fire prevention plan that follows the standards prescribed in the Environment Agency's (EA) guidance documents – updated 11th January 2021.

This fire prevention plan has been designed to meet the following three objectives:

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

This is a working document and must be reviewed and updated, in consultation with the EA and emergency services on at least an annual basis, or immediately after an incident or a change to operations.

## Who This Guidance Applies to

The EA's Fire Prevention guidance applies to this site as Lincoln Storm stores combustible waste. The combustible wastes include non-hazardous waste and waste metals as detailed within this document.

## Who This Guidance Does not Apply to

The EA guidance document does not apply to materials or waste that are: flammable; combustible liquids or gases; hazardous; or dangerous substances stored under the Control of Major Accident Hazards Regulations. The guidance states that these materials should still be considered within the fire prevention plan because of their potential to increase the impact of fire on site. Therefore, the following materials are considered within this plan:

Type	Storage Location	Storage Features
Diesel Oil for Road Vehicle (DERV)	See <b>FPP Appendix 01: Site Plan</b>	1300L LLDPE Bunded Diesel Tank. Tank is double skinned (ie internally bunded) and capable of containing at least 110% of the volume of the tank (assuming 2000L in this storage tank and 2000 in the 6 diesel generators).
Maintenance Fluids/ Hydraulic Oil/ Engine Oil	See <b>FPP Appendix 01: Site Plan</b>	4 x 25 litre drums stored within the maintenance unit.

Non-permitted waste must not be accepted into the facility and therefore should not present a hazard.

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## Types of Combustible Waste

The types of combustible waste stored on site are limited to:

- Waste batteries, modules, cells, EV packs and ESS packs (EWC code 16 06 05 other batteries and accumulators);
- Dry cells (EWC Code 16 06 05);
- Non-ferrous foils (EWC Code 16 12 04);
- Cathode foil (EWC Code 19 12 03);
- Aluminium & Copper (also EWC Code 19 12 03);
- Some fractions (eg steel handles) removed to enable processing (EWC Code 19 12 02); and
- Polymer (EWC Code 19 12 12).

The locations and dimensions of the combustible waste stockpiles are presented within the waste table (**FPP Appendix 03: Table of wastes stored and pile sizes**).

Although the site is permitted to accept and treat a broad range of waste streams, the site currently only accepts a subset of these waste types, as required as input for its operations (as listed above). Other codes that may be accepted include: 19 10 05\*, 10 10 06, 20 01 33\* and 20 01 34.

## Using the Fire Prevention Plan

This fire prevention plan forms part of Lincoln Storm Limited's (Lincoln Storm's) **Operating Techniques and Environmental Management System (OTEMS) (MA10)**. This fire prevention plan (FPP) is a standalone document – it contains all relevant information, site plans and information to be used in a time of emergency. A copy of the FPP is stored within the site office. It is stored in a clearly marked Red Folder, the site file is marked '**FIRE PREVENTION PLAN AND EMERGENCY ACTIONS**'.

All site staff must be able to access the site file at all times, including during an incident. All staff and contractors working on site must be instructed on the content of the FPP and what to do to prevent a fire occurring, including what to do during a fire if one occurs.

All staff must receive training on the FPP. Lincoln Storm must undertake regular exercises to test how well the plan works and they must make sure that all staff understand how to respond.

Table (1) below outlines the schedules that must be carried out on site:

All new site staff and contractors (and existing site staff and contractors when the plan is introduced on site)	To be trained on the FPP and emergency actions during site induction (see <b>FPP Appendix 09: Fire Safety Training Programme</b> )
Existing site staff and contractors	To be trained on the FPP and emergency actions during the first week of the site becoming operational under its new permit and every 6 months (on the nearest practicable date to the 1st of the month)
Site Manager to carry out a fire drill and test the fire prevention plan and emergency actions	Every 6 months (or the nearest practicable date to the 1st of the month)
Site TCM and Site Manager	Annual review each year, or earlier if in a response to an incident or change in operational procedures

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In addition, The following three individuals are trained as Fire Marshals:

- Ray Wiggan
- Steven Nash
- Mariusz Nocon

There is always at least one Fire Marshal present on site during operational hours, and the site operates with a ratio of two fire trained site operatives per Fire Marshal. The procedures for fires discovered on site are provided both in this FPP, the **OTEMS (MA10)** and on-site notice boards.

## Fire Prevention Plan Contents

This FPP ensures that Lincoln Storm does all that is reasonable to prevent fires on site. The plan forms part of the broader written **OTEMS (MA10)** and includes an assessment of the site's fire risk and the measures in place to prevent, detect, suppress, mitigate and contain fires. This FPP is intrinsically linked to the site's operations and provides the most robust set of actions required to protect from all reasonably foreseeable fire risks.

## Site Activities

The activities that can be carried out at the site as defined under Annex II of the Waste Framework Directive are provided in the table below.

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Table 1-1  
Permitted activities

Permitted Activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types (codes)
AR1 – Treatment of hazardous wastes from Li-ion battery shredding process	S5.3 A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment	Treatment of more than 10 tonnes of hazardous wastes a day for the purpose of recovery.  <b>Shredding</b> for onward recovery of hazardous materials generated by drying and separating/‘sorting’ the constituent materials from Lithium-ion batteries  R4 Recycling/reclamation of metals and metal compounds.	Treatment operations shall be limited to: <ul style="list-style-type: none"> <li>▪ Treatment within an integrated plant. Consisting only of drying in a rotary drier, mechanical sorting, and separation: sieving of hazardous waste into different components for recovery.</li> <li>▪ Treatment for recovery shall be no more than 40 tonnes per day.</li> <li>▪ Treatment consisting only of shredding, drying and granulation and separation of permitted wastes into different components for recovery.</li> <li>▪ Treatment shall only take place within a building only when the shredding activity is within water for charged (‘wet’ materials) or with air extraction for uncharged or discharged (‘dry’) materials to prevent risk of fire and explosions.</li> <li>▪ All pre shredding activities shall be carried out at all times using water to prevent any risk of fires or explosions.</li> <li>▪ Specific lithium-Ion battery fire suppression technology (including lithium-ion extinguishers and fire blankets) will be used in all areas.</li> <li>▪ All treatment activities shall be carried out at all times within DSEAR requirements.</li> <li>▪ All activity will take place within the buildings on impermeable surfaces with sealed drainage as shown in <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b>.</li> </ul> Subject to any other requirements of this permit wastes shall be stored for no longer than 6 months prior to recovery. Waste types are as specified in the <b>Table 4.2 below</b> . Input Material examples of waste types include: 16 06 05, 19 10 05*, 19 10 06, 20 01 33*, 20 01 34. Outputs of the process: Storm Black (non-ferrous metal powder), Copper 19 12 03, Aluminum 19 12 03, Polymer (PPPE) 19 12 12, Heavy Fraction 19 12 02

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<p>AR2 –</p> <p>Treatment of hazardous wastes from Li-ion battery <b>drying process</b></p>	<p>S5.3 A(1)(a)(ii)</p> <p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment</p>	<p>Treatment of more than 10 tonnes of hazardous wastes a day for the purpose of recovery.</p> <p><b>Drying to remove moisture from shredded lithium ion battery materials</b> for onward recovery of hazardous materials generated by separating the constituent materials from Lithium-ion batteries</p> <p>R4 Recycling/reclamation of metals and metal compounds.</p>	<p>Treatment operations shall be limited to:</p> <ul style="list-style-type: none"> <li>▪ Treatment within an integrated plant. Consisting only of drying in a rotary drier, mechanical sorting, and separation: sieving of hazardous waste into different components for recovery.</li> <li>▪ Treatment for recovery shall be no more than 40 tonnes per day.</li> <li>▪ Treatment consisting only of shredding, drying and granulation and separation of permitted wastes into different components for recovery.</li> <li>▪ Treatment shall only take place within a building only when the shredding activity is within water for charged ('wet' materials) or with air extraction for uncharged or discharged ('dry') materials to prevent risk of fire and explosions.</li> <li>▪ All pre shredding activities shall be carried out at all times using water to prevent any risk of fires or explosions.</li> <li>▪ Specific lithium-Ion battery fire suppression technology (including lithium-ion extinguishers and fire blankets) will be used in all areas.</li> <li>▪ All treatment activities shall be carried out at all times within DSEAR requirements.</li> <li>▪ All activity will take place within the buildings on impermeable surfaces with sealed drainage as shown in <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b>.</li> </ul> <p>Subject to any other requirements of this permit wastes shall be stored for no longer than 6 months prior to recovery.</p> <p>Waste types are as specified in the <b>Table 4.2 below</b>. Input Material examples of waste types include: 16 06 05, 19 10 05*, 19 10 06, 20 01 33*, 20 01 34.</p> <p>Outputs of the process: Storm Black (non-ferrous metal powder), Copper 19 12 03, Aluminum 19 12 03, Polymer (PPPE) 19 12 12, Heavy Fraction 19 12 02</p>
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<p>AR3 –</p> <p>Treatment of hazardous wastes from Li-ion battery <b>separation ('sorting') process</b></p>	<p>S5.3 A(1)(a)(ii)</p> <p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment</p>	<p>Treatment of more than 10 tonnes of hazardous wastes a day for the purpose of recovery.</p> <p><b>Separating materials</b> for onward recovery of hazardous materials the constituent materials from Lithium-ion batteries</p> <p>R4 Recycling/reclamation of metals and metal compounds.</p>	<p>Treatment operations shall be limited to:</p> <ul style="list-style-type: none"> <li>▪ Treatment within an integrated plant. Consisting only of drying in a rotary drier, mechanical sorting, and separation: sieving of hazardous waste into different components for recovery.</li> <li>▪ Treatment for recovery shall be no more than 40 tonnes per day.</li> <li>▪ Treatment consisting only of shredding, drying and granulation and separation of permitted wastes into different components for recovery.</li> <li>▪ Treatment shall only take place within a building only when the shredding activity is within water for charged ('wet' materials) or with air extraction for uncharged or discharged ('dry') materials to prevent risk of fire and explosions.</li> <li>▪ All pre shredding activities shall be carried out at all times using water to prevent any risk of fires or explosions.</li> <li>▪ Specific lithium-Ion battery fire suppression technology (including lithium-ion extinguishers and fire blankets) will be used in all areas.</li> <li>▪ All treatment activities shall be carried out at all times within DSEAR requirements.</li> <li>▪ All activity will take place within the buildings on impermeable surfaces with sealed drainage as shown in <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b>.</li> </ul> <p>Subject to any other requirements of this permit wastes shall be stored for no longer than 6 months prior to recovery.</p> <p>Waste types are as specified in the <b>Table 4.2 below</b>. Input Material examples of waste types include: 16 06 05, 19 10 05*, 19 10 06, 20 01 33*, 20 01 34.</p> <p>Outputs of the process: Storm Black (non-ferrous metal powder), Copper 19 12 03, Aluminum 19 12 03, Polymer (PPPE) 19 12 12, Heavy Fraction 19 12 02</p>
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<p>AR4– Hazardous waste repackaging</p>	<p>S5.3 A(1)(a)(iv) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging</p>	<p>Treatment of more than 10 tonnes of hazardous wastes a day for the purpose of recovery.  R4: Recycling/reclamation of metals and metal compounds.</p>	<p>Li based batteries, 16 06 05 will be handled as if they were hazardous in anticipation of reclassification of this waste type. Li based batteries from electric vehicles shall be stored separately from other batteries. Li based batteries shall be stored to prevent them from:</p> <ul style="list-style-type: none"> <li>▪ coming into contact with any liquids</li> <li>▪ being damaged</li> <li>▪ being exposed to high temperatures</li> </ul> <p>No waste shall be stored for longer than 6 months. Waste types as specified as hazardous waste in the Table of Wastes. From receipt and storage of hazardous waste prior to despatch off site. Treatment consisting of repackaging of hazardous waste (Batteries only).</p> <ul style="list-style-type: none"> <li>▪ All treatment and storage must take place within the buildings on impermeable surface with sealed drainage as shown on <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System.</b></li> </ul> <p>All batteries shall be stored in appropriate containers within a building on an impermeable surfaces with a sealed drainage system. Li based batteries from electric vehicles shall be stored separately from other batteries. Li based batteries shall be stored to prevent them from:</p> <ul style="list-style-type: none"> <li>▪ coming into contact with any liquids</li> <li>▪ being damaged</li> <li>▪ being exposed to high temperatures</li> </ul> <p>Repackaging of waste shall not change either the maximum storage times for waste on site or the amount that can be stored. No waste shall be stored for longer than 6 months. Waste types as specified as hazardous waste in the <b>Table 4.2 below.</b> In the event 19 10 05* is received it will be stored separately and subject to the above handling.</p>
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<p>AR5 – Hazardous waste storage (Batteries)</p>	<p>S5.6 A(1)(a) Temporary storage of hazardous waste in a facility with a total capacity exceeding 50 tonnes pending any of the activities listed in Section 5.1, 5.2 and 5.3</p>	<p>Temporary storage of more than 50 tonnes of hazardous waste pending disposal or recovery.  D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced).  R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage pending collection, on the site where it is produced).</p>	<p>Storage of hazardous waste pending transfer for treatment off site if required (whole batteries or shredded material). No waste shall be stored for longer than 6 months. Storage must take place within the pre-processing storage building on impermeable surface with sealed drainage as shown on <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System.</b> All batteries shall be stored within a building on an impermeable surfaces with a sealed drainage system. Li based batteries from electric vehicles shall be stored separately from other batteries. Li based batteries shall be stored to prevent them from:</p> <ul style="list-style-type: none"> <li>▪ coming into contact with any liquids</li> <li>▪ being damaged</li> <li>▪ being exposed to high temperatures</li> </ul> <p>Waste types restricted to the hazardous wastes listed in the <b>Table 4.2 below.</b></p>
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	Directly Associated Activity		
AR – 6 Pre-treatment storage	Storage of Lithium Batteries prior to on site treatment	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage pending collection, on the site where it is produced)	From receipt of non-hazardous lithium batteries to storage prior to onsite treatment. Lithium batteries shall be stored within storage buildings on impermeable surfaces with sealed drainage as shown on <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b> . Li based batteries from electric vehicles shall be stored separately from other batteries. Li based batteries shall be stored to prevent them from: <ul style="list-style-type: none"> <li>• coming into contact with any liquids</li> <li>• being damaged</li> <li>• being exposed to high temperatures</li> </ul> Subject to any other requirements of this permit wastes shall be stored for no longer than 6 months prior to recovery. Waste types are limited to those specified in the <b>Table 4.2 below</b> .
AR – 7 Power supply	Medium Combustion Plant with appropriate abatement fitted	Power supply	Up to 5 MCP
AR- 8 Raw materials	Raw materials handling and storage	Handling and storage of raw materials, including fuel and chemicals.	Receipt and storage of any raw materials directly associated with the permitted activities on site. All liquid raw materials shall be stored in sealed containers/tanks within bunded areas or within plant with storage with integral bunds. No more than 1300 litres diesel to be on site at any one time.
AR – 9 Post-treatment storage	Storage of residual waste produced as part of the on-site treatment of Lithium Batteries.	Handling and storage of residual waste from the Lithium battery shredding and treatment sorting activity.	From the production of the residual waste to the storage of such waste prior to the removal off site for treatment or disposal elsewhere. Storage of all residual wastes must be in-line with the most suitable BAT requirements. Storage of produced Storm Black (self-assessed) will be handled and stored in accordance with all input and output material. Shown on <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b> . No waste shall be stored for longer than 6 months.

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AR10 – sealed drainage	Drainage	Sealed drainage system	No surface water or process water to escape site. 100,000 Litre tank on site as sump. Contaminated water to be tankered away.
AR11- Non-hazardous waste transfer station (Batteries and antifreeze only)		Storage of non-hazardous waste before transfer off site. R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage pending collection, on the site where it is produced).	From receipt and temporary storage of non-hazardous wastes (batteries only) before transfer off site for recovery. Storage of all wastes must be in-line with the most suitable BAT requirements. Storage of batteries must take place within buildings on impermeable surface with sealed drainage as shown <b>Site Plan appendices SP2: Site Layout Plan and SP9: Drainage System</b> . No waste shall be stored for longer than 6 months. Waste types and quantity restricted to the wastes listed in the <b>Table 4.2 below</b> .

Waste battery treatment on site consists of aqueous shredding, drying and dry shredding and preparation of input materials into metals, powders and polymers for recovery. The stages of the continuous process are:

- **Aqueous shredding:** for the reduction in size of the batteries and to neutralise the electrical charge (Dry shredding for uncharged or discharged materials);
- **Drying** in a specialist rotary dryer to separate out the moisture from the material; and
- **Separation:** where the different input materials are: separated into metals, powder (Storm Black) and PP/PE polymer; and gravity assisted separation of aluminium and copper granules (see Annex 8).
  - Gravity assisted separation of the aluminium and copper granules into their two fractions.

The site layout, including where these activities are located is shown at the site plan in **FPP Appendix 01: Site Plan**.

The whole battery or module material has handles and/or ends removed and is fed into the pre-shredder where the material is reduced in size in preparation for the next shredding step. Following the secondary shredder (which reduces the material size down to sub 30mm), the loose materials are then dried and loaded into the dry separation line. The dry separation line mechanically processes all the dry shredded battery material into fractions of pure Storm Black product (a powder), an aluminium and copper mix and polymer, and a small amount of residual metal. All materials from each fraction are collected into securely sealed bulk bags to be transported to customer facilities where the Storm Black product is used as an input to their clients' proprietary formula lithium-ion precursor material to produce lithium-ion battery cathode active material. The output materials are:

- The Storm Black product which is used in the production of new battery technologies;
- Copper – 19 12 03 which is transported to refining facilities to create new copper products;
- Aluminium – 19 12 03 which is transported to refining facilities to create new aluminium products;
- Polymers (PVDF) – 19 12 04 which is transported to plastic products manufacturer;
- Small amount of metal fraction removed to allow processing – 19 12 02; and

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- Graphite (when anode foil is processed) – 19 12 12.

## Site Plans and Maps

The site is located within the footprint of the former Worle Quarry, in the area of Kewstoke to the north of Weston-Super-Mare.

The National Grid Reference (NGR) for the site is ST 35142 63205 and the site location is illustrated on the in the sensitive receptor and location plan (see **FPP Appendix 02: Sensitive Receptor Plans**). The site layout is shown in the **FPP Appendix 01: Site Plan**.

The site is located in a mixed-use area. The closest residential receptors lie within Worle approximately 25m to the east with further properties to the north, south, and west. Areas of woodland border the site above the quarry to the south and east. Worlebury golf course lies 60m to the west. The main access to the site is via Lower Kewstoke Road which is located approximately 100m to the northeast of the site. An area of Ancient Woodland called Worle Wood lies 340m to the northwest of the site. The surrounding land-use and receptors are identified on **FPP Appendix 02: Sensitive Receptor Plans**. Sources, Pathways and Receptors and are identified in the table below:

Boundary	Description
North	The wider disused Worle Quarry also owned by Lincoln Storm, Lower Kewstoke Road and residential properties within Kewstoke.
East	Areas of woodland and residential properties. Beyond this lies an area of open ground called Lynch Farm Park and allotment gardens
South	Areas of woodland and vegetation, beyond which lies residential properties and Worle Village Primary School.
West	Disused Worle Quarry and commercial/industrial premises, followed by residential properties and Worlebury Golf Course, including the Club House.

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

### Industrial/Commercial Premises

Industrial works located within the wider disused Worle Quarry (also owned by Lincoln Storm) site are located adjacent to the site to the north and northwest of the EP boundary. Further commercial/industrial premises are located approximately 400m south, 780m north, and 860m northwest.

### Residential Properties

The main residential area of Worle is located to the north, south and east of the site, with the closest residential properties located approximately 25m to the east of the site. There are also further residential properties located within the area of Worlebury Golf Club, approximately 90m to the northwest and 400m to the west.

### Holiday Park

Approximately 730m north west lies Ash Tree Holiday Home Park.

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## Allotment Gardens

Allotment gardens are located to the east approximately 200m from the EP boundary and approximately 660m to the southwest.

## Golf Courses

Worlebury Golf Course and Club House lie approximately 60m to the west of the site.

## Educational Premises

Worle Village Primary School lies approximately 300m south. St Martin's C of E Primary School is located approximately 580m southwest, Mendip Green Primary School lies approximately 700m south and Worle Community School is situated approximately 920m south.

## Recreational Areas

Playing fields are located approximately 320m northeast, within the residential area of Worle. Worle Recreation Ground lies approximately 780m southeast and a sports facility is located approximately 810m south of the EP boundary.

## Agricultural Land/Open Space

Approximately 90m north lies an area of open ground and approximately 240m east lies an area of agricultural land/open space called Lynch Farm Park. A further area lies approximately 390m north.

## Church and Graveyard

The nearest church and graveyard is located approximately 280m to the south.

## Public Footpaths and Areas for Public Use

There are no public footpaths within or immediately adjacent to the site boundary. The closest paths are located to the east of the site, associated with Lower Kewstoke Road and within the residential areas to the east, north and south of the site.

## Surface Water Features

No surface water features are located within the EP boundary or within a 500m radius of the EP boundary.

## Ecology - National Forest Inventory

Areas recorded on the National Forest Inventory are located adjacent to the south, east and west of the site.

## Ecology - Local Wildlife Site

Worle Hill and Worlebury Golf Course Local Wildlife Site (LWS) is located approximately 60m west and extends to the west.

## Ecology - Ancient Woodland

Searches on the MAGIC website confirm that there is one area of Ancient Woodland within 1km of the EP boundary. Worle Hill Woods is an area of ancient and semi-natural woodland, located approximately 340m to the northwest of the site.

Searches on MAGIC confirmed that there are none of the following within 1km of the site's boundary:

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- Areas of Outstanding Natural Beauty (AONB);
- Special Areas of Conservation (SAC);
- RAMSAR sites;
- Special Protection Areas (SPA);
- Sites of Special Scientific Interest (SSSI);
- National and Local Nature Reserves;
- National Trust Properties;
- Woodland Trust Sites; and
- National Forest.

## Cultural Heritage

The review of MAGIC revealed that there are twelve listed buildings within 1km of the site's EP boundary as illustrated on the Sensitive Receptor and Location Plan (Appendix 2). The closest of which is the Grade II listed Worle Tower Observatory, located approximately 110m west at NGR: ST 34984 63291. The Observatory is thought to be late 18th Century, formerly a windmill and converted to an observatory in circa 1876. Further listed buildings are illustrated in Appendix 2. The search on MAGIC confirmed that the following features do not lie within 1km of the site:

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

## Identified Sensitive Receptors

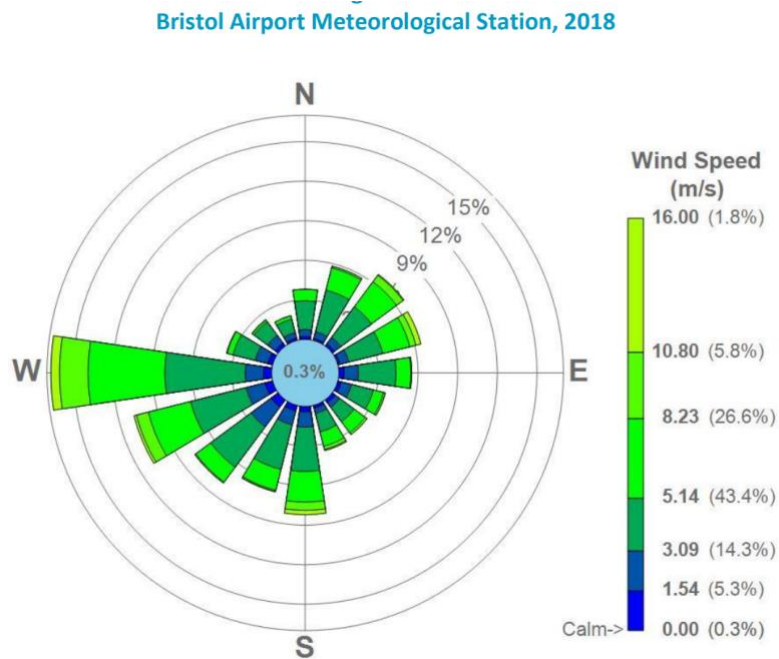
See **FPP Appendix 02: Sensitive Receptor Plans**.

## Windrose

A windrose providing the frequency of wind speed and direction from the Bristol Airport Meteorological Station for the period of 2018 is presented in the figure below. The windrose shows that the most prominent wind direction is from the west to the east. Winds from the north, east and south are relatively infrequent. Smoke contains a multitude of combustion products including irritants and asphyxiants which are toxic. These toxic pollutants can impact anyone within 1km of the site and in certain circumstances must have an impact on public health at greater distances than 1km. Smoke must have a significant effect on human health, as detailed within the research studies. The fire and smoke would affect the immediate businesses, local houses and the wider industrial and residential areas.

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Fig 1



## Site Infrastructure Plan

The EA Guidance states that the site plan must show the following information:

- The location and layout of the site buildings, location of fire assembly area, fire extinguishers, fire hose, smoke detectors and PPE storage area. Any areas where hazardous materials are stored on site (location of gas cylinders, process areas, chemicals, piles of combustible materials, oil and fuel tanks). See **FPP Appendix 01: Site Plan**.
- Main access routes for fire engines and any alternative access, access points around the site perimeter to assist firefighting, hydrants and water supplies. See **FPP Appendix 01: Site Plan**.
- Areas of natural and unmade ground. **FPP Appendix 01: Site Plan** shows areas of unmade and impermeable areas.
- The location of fixed plant or where mobile plant is stored when not in use. See **FPP Appendix 01: Site Plan**.
- Drainage runs, pollution control features such as drain closure valves and fire water containment systems. **FPP Appendix 01: Site Plan** shows the site's drainage system, and firewater and spillage containment bunding.

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- Storage areas with pile dimensions and fire walls (where applicable) – includes wastes stored in a building or containers. Including quarantine areas. **FPP Appendix 01: Site Plan** shows site layout, including combustible waste storage and quarantine area and **FPP Appendix 03: table of Wastes Stored and Pile Sizes** shows the configuration of the storage areas.

## Emergency Services:

- Avon Fire & Rescue Service**, Milton Avenue, Weston-Super-Mare, Somerset, BS23 3JS, 2.4 miles from the site, 7 minutes travel time.
- Town Hall Police Station**, Town Hall, Walliscote Grove Road, Weston-Super-Mare, BS23 1UJ, 3.3 miles from the site, 10 minutes travel time.
- Weston General Hospital**, Grange Road, Uphill, Weston-Super-Mare, BS23 4TQ, 5.1 miles from the site, 15 minutes travel time.

## Manage Common Causes of Fire

### Arson

The site benefits from a continuous presence of staff during operational hours, currently between 7am to 7pm Monday to Friday. In addition, there is a night time security guard or member of staff resident on site on an on-call basis during 7pm to 7am Monday to Friday, as well as Saturday and Sunday (24 hours split shift between two security guards/staff) which was a new measure introduced due to an arson attack that took place on the 18/03/2023.

Security features on site includes:

- 2m high perimeter fencing surrounding the site;
- 2m high perimeter fencing surrounding the quarry face (along the bridle way);
- Access gate controlled by Storm Energia staff with keypad access controls;
- The site is enclosed by the sheer quarry face;
- CCTV system;
- Presence of a security guard or a resident member of staff outside of operational hours (rotational weekend presence on site); and
- Combustible waste is stored within the buildings and protected from arson attacks (from outside attempts).

All visitors and contractors are required to sign in and are escorted by a member of staff. CCTV is accessible to site operatives throughout the working day, and remotely viewable on mobile devices at all times. If a breach in security is detected site operatives/the security guard must contact the Site Manager or their deputy and the emergency services as appropriate, both inside and outside of operational hours.

All security measures on site are inspected at the commencement of every working day by site operatives to ensure their continued integrity. Any defects or damages which compromise the integrity of the enclosure must be made secure by temporary repair by the end of the working day. Permanent repairs must be made within a maximum of 5 days.

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In the event of a breach of security at the site, the cause is investigated, and appropriate mitigation measures implemented, such as repositioning of CCTV cameras, repair of security infrastructure, and/or additional deterrents. This is recorded in the site diary. Records maintained include inspections and maintenance of perimeter fencing and gates, doors and locks, breaches of security, investigations and actions taken.

There is a lockable maintenance storage unit building at the approach entrance at the North of the site containing paints, gas cylinders, oils and lubricants.

## Mobile Plant and Equipment

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

- 5 x mobile generators;
- 5 x forklift trucks;
- 2 x loading trucks; and
- 1 x battery handler apparatus.

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

Mobile Plant and equipment are checked daily before use and regularly maintained as part of Health & Safety Procedures and in accordance with the manufacturers' guidelines. Maintenance is recorded daily and weekly (depending on the maintenance requirements) and recorded on the plant maintenance sheets. Any faults or problems noted during the daily checks are reported either directly to the manager, or in his absence, to the site manager so that the problem or fault can be rectified. Again, actions must be recorded using the sites defect sheet. Fire extinguishers are strategically located around the site to ensure that fires can be dealt with swiftly.

Mobile plant must be cleaned down daily to remove dust build up, fluff and any other potentially combustible materials.

Mobile plant that is not being used, is kept a minimum distance of 6 meters away from combustible materials. Mobile plant must be fully isolated at the end of every working day.

Employee/visitor/contractor vehicles are parked in the designated car park which is located at the front of the site well away from storage and processing areas. Outside operational hours, mobile plant is kept in the locked maintenance unit at the North entrance to the site approach road.

## Fixed Plant

The following fixed plant is held on site:

- 2 x dry processing lines;
- 2 x aqueous shredders;
- 1 x pre-shredder;
- 3 x finishing shredders;
- 1 x drying plant;
- Water circulation system;
- Gravity separation table; and
- Tanks systems with plate press and briquette press.

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Fixed plant is checked daily before use and regularly maintained as part of Health & Safety Procedures and in accordance with the manufacturer's guidelines. Maintenance is recorded daily and weekly (depending on the maintenance requirements) and recorded on the plant maintenance sheets. Any faults or problems noted during the daily checks are reported either directly to the Plant Manager, or in his absence, the site manager so that the problem or fault can be rectified. Actions must be recorded using the site's defect sheet. Fire extinguishers are strategically located around the fixed plant to ensure that fires can be dealt with swiftly.

Fixed plant that is not in operation (e.g. at the end of the working day) must be overrun (shafts, conveyors etc) to ensure all combustible wastes are fully discharged out from the plant. This will take approximately 6 – 10 minutes (depending on what plant it is). Combustible waste must be kept a minimum distance of 6 metres away from all static plant (unless it is being used to process material). There must be a site clean-up at the end of each working day to remove any combustible material (fluff, dust, accumulations) from rollers, bearings and motors. Static Plant must be fully isolated at the end of every working day.

Ray Wiggan (Plant Manager) is responsible for all aspects of plant maintenance for safety, preventative maintenance, and fire and pollution prevention.

## Fixed Plant (drainage and sealing)

The site's drainage and sealing arrangements are shown in the site plan. These arrangements comprise:

- A surround (other than where the fall line does not require it) of sealed (bunded) concrete blocks which ensures any surface water runs into the drainage system.
- Aco drains leading to the sub-surface drains, which, in turn flow into two large concrete bottomed interceptors. These interceptors receive run off from all drains in the quarry.
- The final interceptor is fitted with a pump. The pump is activated by a float and when the float rises to the specified level (below the pipe leading to the – \_now sealed – \_soakaway) the pump activates.
- The pump pushes water through pipes to a 100,000 litre tank. The tank is emptied (by tanker) when it approaches 50,000 litres.

The Plant Manager is responsible for all aspects of plant maintenance for safety, preventative maintenance, and fire and pollution prevention.

## Fixed plant: fire system

The site's certified supplier for all fire detection and suppression matters, Multi-Security, perform regular checks, at least annually.

## Electrical faults including damaged or exposed electrical cable

All buildings have been wired by a qualified/certified electrician and daily checks are carried out on all portable hand tools and electricals. Fixed electricals are protected from the operation's activities but must undergo a full inspection every 2 years. In addition, an electrician must carry out annual checks on all electrical equipment as part of the PAT testing regime. This must also be recorded on the Maintenance Logs.

If cables are Identified as damaged, procedures are in place for reporting damage to cables to ensure isolation to these areas. The TCM or site manager is responsible for making these checks and instigating repair works.

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Storm Energia uses the following Electrical Services contractors:

- Prestige Building Specialists Ltd - 8A The Glen, Weston Super Mare, BS22 9RN (Ph: 07713 675690)
- Mike Henderson Electrical Testing and Inspection – ECS Number C0216860
- Crawfords Electrical Repairs Limited

## Discarded smoking materials

A no smoking policy is enforced on site with clear signage prohibiting it. The designated smoking area is a safe distance away from combustible wastes to prevent accidental ignition. Smoking materials, lighters and matches must not be taken in to the storage tents, or treatment buildings. The location of the smoking area is illustrated on **FPP Appendix 01: Site Plan**.

## Hot Works

Hot works are not an intended activity for the site. They should be carried out in the maintenance unit or entirely off-site.

However, if for any reason hot works need to be undertaken (e.g. using cutting equipment for engineering works on the fixed plant) then this activity must be carried out in a controlled setting due to it giving rise to sparks and through generation of heat. A permit to work system is in operation to factor in the risks and to plan and approve any activities that may involve ignition and heat sources.

Such works must only take place when all shut down procedures in the building have been performed, cleaning has been carried out and a full visual inspection of the plant and work area(s) has been carried out ('two pairs of eyes'). Lithium fire extinguishers must be manned and on standby during the works.

A fire watch must take place after the hot works are complete, operating until residual heat has dissipated. A hand-held thermal imaging camera must be used to detect any residual heat. Once the heat has dissipated, the components must be placed into storage. The permit to work must dictate what firefighting equipment will be needed. Waste and other combustible materials must be placed a minimum of 15 metres away from any hot works. Heat/spark screens/curtains must be erected around the hot works area.

## Industrial Heaters

No industrial heaters are to be utilised on site.

## Hot Exhausts

Vehicle engines are turned off when not in use and stored outside, at least 6m away from combustible waste storage areas. Consideration is given to the high-risk time for hot exhausts (one hour after switching off when dust can settle on hot surfaces). Vehicles and plant are switched off at least 30 minutes before the end of the day, for them to cool down prior to site staff leaving site. They are also cleaned daily to remove any dusty materials. A fire watch is conducted via visual assessment at a minimum frequency of twice every working day to detect any signs of fire caused by dust settling on hot vehicle exhausts or engine parts. A visual assessment is also conducted at the end of the working day.

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The hot exhaust fire checks must be recorded as follows:

Fire watch visual inspection on plant and exhaust parts (and using heat detection camera on stockpiles)	Date	Time	Actions Taken	Signature
Fire Watch 1		12:00		
Fire Watch 2		16.30		

## Sunlight and hot/dry weather

Due to the possibility of heating of waste by the sun, no wastes must be stored outside in direct sunlight. Activities must only take place within the 4-sided tents to prevent access, rain ingress, direct sunlight and to prevent windblown wastes escaping. Temperature checks are taken 3 times daily in all storage areas, using a handheld thermal scanner.

## Ignition Sources

Potential ignition sources include hot exhausts and engine parts and discarded smoking materials (all described above). All ignition sources must be kept a minimum of 6m away from the storage of combustible and flammable wastes. A risk assessment must be made on all sources of ignition to ensure that they are required on site or if other items of equipment should be used instead (to reduce requirement for items which carry inherent risks).

## Batteries

The site accepts, stores and processes waste batteries (EWC code 16 06 05, other batteries and accumulators) and other materials as set out in the waste table (**FPP Appendix 03: Table of wastes stored and pile sizes**). Batteries are stored on impermeable surfacing, undercover in sealed buildings and in appropriate packaging to prevent them from coming into contact with any liquids or being damaged. Storage locations are illustrated on **FPP Appendix 01: Site Plan**.

Damaged batteries are minimised/identified by:

- The site's waste acceptance procedures which require operatives to visually inspect every battery module prior to placing it into storage.
- Contracts with the Original Equipment Manufacturers (OEMs) to supply undamaged batteries.
- Good handling techniques during the offloading process to ensure batteries are not damaged by the forklift.
- Site operatives are trained to identify characteristics of damaged batteries.
- Thermal Checks carried out on each battery module during the offloading process.
- All transported batteries comply with strict ADR regulations.

If a battery is identified as damaged or potentially damaged, They are immediately moved to the designated quarantine area. Batteries identified as unsafe for storage are processed as a priority. Further details of battery storage arrangements are described below.

## End of Life Batteries in Plant

Lincoln Storm must ensure that batteries are disconnected in plant that is not being used for the foreseeable future to eliminate the risk of the plant short circuiting and causing a fire. All End-of-Life batteries from plant must be placed into suitable lidded battery boxes with an acid resistance base. Batteries must be stored upright (contact points facing upwards). If batteries are identified as

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damaged, they must be isolated away from other batteries of the same chemistries. These batteries (likely to be lead acid) must be stored separately from lithium-Ion batteries.

## Leaks and spillages of oils and fuels

All fuels and lubricating oils/fluids are appropriated stored. The DERV tank is surrounded by an internal leakage containment bund capable of containing at least 110% of the volume of the tank. Bunds are impermeable and resistant to stored materials. Inspection of any spillages or leaks from containment must be completed at least once per shift by a site operative. The results of all daily and weekly monitoring must be recorded in the site diary, as well as any remedial actions. In the event of any potentially polluting leak or spillage occurring on site following actions must be taken:

- Minor spillages must be cleaned up immediately, using sand or proprietary absorbent. The resultant materials must be placed into containers and must then be removed from site and disposed of at a suitably permitted facility. The incident must be logged in the site diary.
- In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action must be taken to contain the spillage and prevent liquid from flowing outside the EP boundary. The spillage must be cleared immediately and placed in containers for offsite disposal, and the EA must be informed.

All equipment and plant are inspected on a daily basis for leaks. The Spill Procedure is set out in the **OTEMS** at **OTEMS Appendix 10: Spill Procedure**.

## Build up of loose Combustible Waste, Dusts, and Fluff

The site must be inspected regularly for the build-up of loose combustible waste, dust and fibres. This material must be removed from site on a regular basis, and immediately if near a source of ignition or heat. The frequencies, and recording format, are outlined below:

Inspection to assess the build up of loose wastes, dusts and fluff	Date	Time	Actions Taken	Signature
Loose waste inspection 1		12:00		
Loose waste inspection 2		16.30		

The risk of the build-up of combustible waste, dust and fluff is low due to the following measures implemented on site.

- All incoming waste is off loaded directly into the storage areas to minimise unnecessary handling and transport distance therefore minimising the potential for wind-borne dust.
- All plant and equipment is subject to a programme of planned preventative maintenance which follows the inspection and maintenance schedule recommended by the manufacturer. This includes corrosion prevention where applicable.
- All waste treatment takes place in buildings, minimising the potential for dust emission.
- Storage and processing areas are cleaned daily using H Class Vacuum Cleaners.
- Powered extraction and filtering systems operate in areas of potential dust/particulate creation: the shredding operation, drier building and the dry separation building.
- Site access roads and external operational areas are maintained and swept regularly to reduce dust generation.
- Daily visual inspection of the site and site boundary is carried out by site personnel.
- Daily site shut down procedure which includes the over running of conveyors, rollers, and shafts to ensure all materials are discharged to the bag houses and a full clean down takes place.

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## Reactions Between Wastes

All batteries are stored in appropriate weather resistant boxes on pallets, under cover to prevent them from coming into contact with any liquids or being damaged. The waste storage areas are engineered to be impermeable and have bunding, along with a sealed drainage system.

All waste storage areas have a separation distance of at least 6m and the location of the storage areas is illustrated on **FPP Appendix 01: Site Plan and FPP Appendix 03: Table of Wastes Stored and Pile Sizes**. Strict waste acceptance procedures implemented on site ensure that only permitted wastes are accepted. All incoming loads are booked in advance with the logistics manager who records the source category and chemistry of the load to be delivered (all batteries are lithium Ion). When the waste arrives on site the load list and paperwork are checked against the received waste, and the weight and description of goods is verified against the load list, at the incoming weighbridge. Incoming loads and packages are visually inspected for quality and discrepancies by opening the packaging to check that the material conforms with the EWC codes and description of the material on the weighbridge. Unauthorised wastes are immediately placed into a quarantine area (and marked with a red quarantine sign). The site manager notifies the customer of the non-conforming material within 24 hours of receipt, and where the material is not permitted, arrangements must be made to return the material to the customer at the customer's expense.

The environmental permit is broad in nature. However, Lincoln Storm only accepts a small subset of codes. The site does not accept loose combustible wastes (in which/where non-compliant waste could be disguised) therefore the risk of a reaction between the wastes is negligible. Care must be taken to ensure that any non-conforming wastes found within loads are stored in an appropriate manner; for example, by avoiding the storage of incompatible wastes such as oxidisers and flammable material together. The quarantined wastes must be checked daily as a precaution.

Additionally, the small subset of waste streams accepted by Lincoln Storm are extremely valuable. Lincoln Storm must only accept waste on a contractual basis. It is not an open disposal site.

## Deposit of Hot loads

No burning, reactive/reacting or visibly hot (producing steam or heat) loads are accepted on site. Each load is visually inspected at the incoming weighbridge to ensure compatibility with accompanying delivery notes. Site operatives undertake a visual inspection at the incoming weighbridge for signs of heating such as steam and smoke. This minimises prohibited wastes and the acceptance of hot loads. Instructions are given to suppliers to ensure no hot loads are accepted on site. Should a hot load be deposited on site, it must immediately be removed to the dedicated quarantine area and extinguished immediately. Any fire damaged waste must be removed from site as a matter of priority to a suitably licenced facility for disposal.

Hot loads are only expected to arrive on site if a battery module is damaged in transit. Damaged batteries are minimised/identified by:

- The site's waste acceptance procedures which require operatives to visually inspect every battery module prior to placing it into storage.
- Contracts with the OEMs to supply undamaged batteries.
- Good handling techniques during the offloading process to ensure batteries are not damaged by the forklift.
- Site operatives are trained to identify characteristics of damaged batteries.

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- Thermal Checks carried out on each battery module during the offloading process.
- All transported batteries comply with strict ADR regulations.
- The site primarily accepts discharged cells which carry a negligible level of risk.

If a battery is identified as damaged or potentially damaged, it is immediately moved to the designated quarantine area. Batteries identified as unsafe for storage are processed as a priority. Further details of battery storage arrangements are described below.

## Storage of Fuel, Oils and Maintenance Fluids

Procedures must be in place to ensure safe storage of fuels and fluids associated with maintenance. Guidance must be taken from the HSE and the fire and rescue service.

Hazardous materials such as maintenance fluids must be stored within a bunded spill tray situated in the maintenance building - to reduce the associated risks. Fluids must be stored in appropriate containers and must be located within bunds. They must be located away from likely sources of ignition, away from the perimeter of the site, away from processing areas and out of the direct line of traffic. Maintenance Flammables and oxidizing wastes must not be stored together.

DERV is Stored within a 1300L tank within a secondary container (ie it is internally bunded), to comply with the relevant oil storage regulations. Situated to the outside of the building the storage must be covered by CCTV. A fire within this zone must be deemed an emergency and the emergency services must be called immediately, and the site evacuated).

## Prevent Self-Combustion

The most effective way to reduce the impact from fires on site is to prevent them from occurring in the first place. Managing storage times, pile volumes and height, and the temperature of the wastes can prevent the self-combustion of wastes.

The locations, sizes and composition of the stockpiles are presented within **FPP Appendix 03: Table of Wastes Stored and Pile Sizes** and **FPP Appendix 01: Site Plan**.

Self-combustion of waste on site is not considered to be a significant risk due to the short storage times (under normal operational conditions) and because waste is segregated into dedicated storage areas. All waste types are stored in dedicated storage tents. All wastes stored within the tents are either stored in UN Approved bags or within the OEM's purpose-built battery storage rack.

The controls in place to reduce the risk from fire are summarised as follows:

- No loads are removed without an onsite operative in supervision;
- A visual fire watch is performed as the loads are received and unloaded; and
- Quarantine areas are kept available. Should the wastes be found not to conform during the initial visual inspection, then the details must be recorded, and the vehicle turned away. If wastes have already been discharged and are deemed not to conform or otherwise not be permitted, then the waste must be:
  - Removed to a designated quarantine area and marked with a yellow sign; and
  - The site manager must notify the customer of the non-conforming material within 24 hours of receipt and arrangements must be made to return the material at the customer's expense.

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## Storage Times

All storage times are detailed in **FPP Appendix 03: Table of wastes stored and pile sizes**).

## Waste Storage

Incoming Batteries are delivered and unloaded into the designated area via a forklift truck. The waste is then transported to the first phase of the treatment process. the storage area must be emptied/collected from site in order of when it was stockpiled in order to maintain stock rotation. The traditional 'stock rotation' to dissipate heat from the waste is not required due to the inorganic nature of the waste. It is also considered to heighten the risk because the battery modules could get damaged if continually handled unnecessarily.

### *Storage of Batteries*

The Batteries must be stored no higher than 4 metres and at a depth that ensures that at least 1 side can be accessed in the event of a fire or if thermal monitoring indicated an increase in temperature to which it must be shredded or quarantined. The Site Manager's daily report on waste storage records the time that waste has been in storage and any issues.

### *Storage of waste metals and polymers*

Waste metals and polymers must be stored on site for no longer than 14 days. Due to the value of metals (copper and aluminium), these must be removed from the site as soon as possible to prevent the risk of theft. A forklift truck must be utilised to rotate this stock if needed. However once a full load is prepared, transport must be arranged for its removal.

### *Use of Forklift*

The forklift truck should also be used to access the waste if there is a fire. The forklift should move the waste away from the fire area to prevent the fire spreading. Staff on weekend rotations must be forklift qualified.

### *Removal*

Lincoln Storm can demonstrate that the stored processed waste is removed from site on a regular basis. Lincoln Storm has multiple contracts and outlets in place to prevent waste being stored on site for an excessive period of time. If a situation evolved where a current outlet stopped trading, Lincoln Storm would either transfer their waste to another waste management company (many of whom have a historic working relationship with Lincoln Storm).

### *Storage of other materials*

Some other materials may self-combust. This means that as they degrade through oxidation they can generate heat. This heat can build to a point where the stack of material can catch fire on its own. These materials include:

- smaller size or graded materials either stored or mixed;
- Material that has not had potential hazards removed before stacking e.g. exposed rust (which can generate heat); and
- Treated materials that are not cold before storage (treatment processes can generate heat).

For all materials, Lincoln Storm must perform the following operational procedures, to ensure that the waste is on site for no longer than 14 days (30 days for cells and modules):

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- Rejected wastes must be recorded and must be stored within the quarantine area, a record must be kept within the site office;
- Authorised wastes must be processed on site and stored within an appropriate area of site;
- Stock must be treated and dispatched from the site in the order of when it arrived on site (although stock that is a potential risk must be removed as priority as outlined above), this is to reduce the risk associated with storing combustible materials; and
- A daily inspection must be undertaken by the TCM. if there is any doubt as to the condition of the material, the material must be removed from site as priority;
- A weekly review of the storage times and the stockpiles must be made by the Authorised Person (Site Manager or TCM) to ensure that all stock is removed within 2 weeks.

This FPP is a live document and must be updated throughout the life of the site, and the updates must detail any increase or decrease of importation quantities and must incorporate the most recent EA Fire Prevention Plan updates. Any proposals to amend the FPP and associated management system must first be submitted to the EA and emergency services for comment, review and (where required) approval.

## Monitoring and control of temperature

The site is continually manned during operational hours and site operatives remain vigilant at all times and look out for signs of fire. Staff are trained in how to identify fires and fire hazards on site. During operational hours, the temperature of all waste storage is checked at 3-hour intervals by site operatives, using a handheld infra-red thermal imaging gun to detect any temperature increase. The inspections are documented in the site diary, and all findings are logged. If a temperature of above 60°C is detected, the actions described in the table must be carried out.

Temperature (°C)	Actions needed
0 - 60	No Actions Required
60 - 80	Report to management and continue monitoring on an hourly basis
85+	Immediately remove waste from the stockpile to the quarantine area and report to management.

All material storage areas are visually inspected by site operatives throughout the day and all findings are logged in the site diary as a minimum. Should signs of self-combustion be identified such as steaming/smoulder/smoking, the pile must be removed to the quarantine area using suitable mobile plant and a lithium-Ion fire blanket to be placed over the battery up to dissipate heat and reduce oxygen. checks of the affected stockpile must be increased to hourly for the remainder of the day to ensure no further hotspot development occurs. All wastes received on site are identified by a unique batch number. The entire batch must be targeted for monitoring.

Infra-red cameras with remote alarms are fitted in all storage areas. These notify on call staff if they detect temperature increases above the thresholds. This supplements the handheld checks and operates 24/7.

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## Manage Waste Piles

All incoming waste is accepted and stored in appropriate weather resistant boxes on OEM designed pallets, within the designated covered storage areas (as illustrated on the site plan at **FPP Appendix 01: Site Plan**).

All stacks and piles of wastes must be stored in a manner that allows emergency vehicular access to the whole site at all times and must meet the standards for maximum height, width, length, volume, area and separation for fire breaks in accordance with the relevant guidance (11th January 2021 updated edition).

**FPP Appendix 03: Table of wastes stored and pile sizes** provides information on the amounts of combustible waste stored on site, as well as the storage arrangement, height, volume, and particle size.

Waste piles must be managed carefully to help to prevent the risk of self-combustion and limit the scale of a fire if one breaks out. Wastes that are shredded are not kept in their largest form to reduce the risk of fire. It is imperative that these stockpiles are managed to reduce the associated risks.

Under normal operating conditions, waste must be processed within 14 days of receipt on site (up to 30 days for cells and modules). Once the waste has been processed, it is removed from site as soon as possible. Lincoln Storm's tracking system allows the site manager to record how long waste is stored on site for. This ensures that the 'first in first out' principle is applied.

All wastes must be stacked no more than 4 metres high. The entire site surface is impermeable. There is no uneven or unsurfaced ground beneath the waste.

The TCM or their deputy must carry out daily checks to assess the size of the stockpile and the separation distances, to ensure that the dimensions outlined within **FPP Appendix 03: Table of wastes stored and pile sizes** are adhered to. When the stockpiles reach 75% capacity, measures must be implemented to slow the input of material into site and increase outputs until stocks can be reduced.

Lincoln Storm must not accept incoming wastes beyond the capacity of the pile size; this must ensure that the volume of waste accepted on site can be managed in a controlled and safe manner.

## Where Maximum Pile Sizes do not Apply

All wastes stored on site must comply with the maximum pile sizes as per the EA Guidelines.

## Preventing Fire Spreading

Waste must be stored within designated storage areas as illustrated on the site plan (**FPP Appendix 01: Site Plan**) and **FPP Appendix 03: Table of wastes stored and pile sizes**. 6m separation distances between waste storage areas must be implemented at all times.

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Waste batteries are stored on impermeable surfaces, within the kerbed and sealed areas under weatherproof coverings and in suitable, segregated containers. Lithium-ion batteries are stored in response to the following constraints:

- how much area (square metres) a pallet or bag can occupy;
- how high bags and pallets can be stacked;
- how close bags and boxes can be placed given the need to access each one individually; and
- the need for 2 metres of space for forklifts to manoeuvre to get to boxes and bags.

All storage areas are fit for purpose and benefit from a sealed drainage system and impermeable surfacing. The areas are inspected on a daily basis. In the event of faults being identified, temporary repairs will be made immediately, and permanent repairs will be fitted within 5 working days. The site has 5 covered storage areas with one of two configurations, as shown on the site plan in [Appendix 00](#) and in [Appendix 11: Waste Storage Plans](#). There are two quarantine areas located within the permit boundary. As shown on the site plan this area has an impermeable surface and is sealed/bunded. The quarantine areas are capable of holding >50% ( 1.8x) of the volume of the largest stockpile on site.

Each tent has an L-seal<sup>1</sup> and the base around the base of the tent wall to prevent water ingress. To prevent water entering through the tents' doorways, outside operational hours or when moderate or more intense rainfall occurs, sandbags are placed across the tent doorways to create a full seal against water ingress. Sandbags, combined with plastic sheeting, have been identified as more absorbent and flexible than plastic based alternatives.

Checks are made throughout the day by the Site Manager or another trained member of staff in all storage areas, to monitor temperature, humidity and for any ingress of water.

Within the tents, material is either stored in the manufacturers packaging (boxes, drums (plastic or metal) or crates) or (if loose) sealed UN specification bags (to meet DGA requirements). Bags, drums and boxes are labelled and boxes at ground level are raised on pallets. Although pile height maximum is four metres, boxes, drums and bags are typically stacked only two high. Boxes and drums are moved by forklift on pallets and bags are lifted by the handles they incorporate for this purpose. Drums (containing portable lithium ion batteries) are 220 litre in volume, with four drums per pallet (combined weight of c. 800 kg). Storage configurations depend on the material, as illustrated below.

<sup>1</sup> A L-seal or L-shaped seal is a type of waterproofing technique used in building construction. It involves creating an L-shaped fold in a membrane material, such as plastic sheeting, to form a seal at the junction of two surfaces. This creates a barrier that prevents water from seeping into the junction.

In the context of the Worle storage tents, the L-seal is used at the base of the tent walls where they meet the ground. A piece of plastic sheeting is folded up the base of the wall and along the ground to form an L-shape. This L-shaped membrane then creates a seal that keeps water from seeping in between the tent wall and ground, helping to waterproof the base of the tent. The L-seal works by interrupting the water flow path. Water runs down the tent wall but then hits the horizontal part of the L-seal membrane and is diverted to the sides, away from the sealed junction.

An L-seal is a simple but effective waterproofing technique.

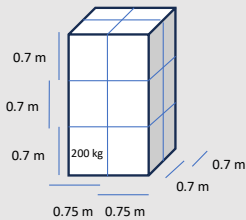
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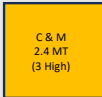
### Storage Key

The diagrams below show the dimensions and weights of materials stored at the facility. It is assumed that a space of 2 metres is required for a forklift to have access to each pallet.

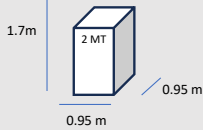
Cells and modules  
(including ESS packs)



2.4 MT



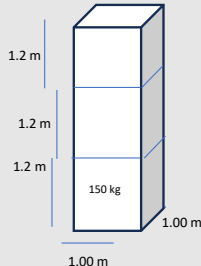
Storm Black™



2.0 MT



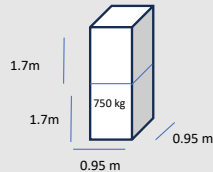
Polymer



0.45 MT



Aluminium and  
copper



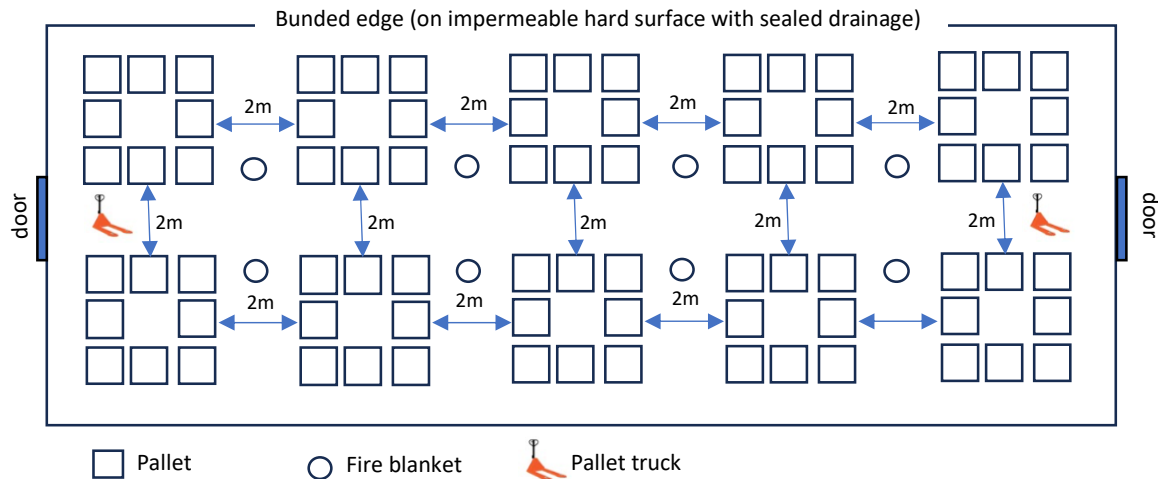
1.5 MT



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All storage areas are fit for purpose and benefit from a drainage system and impermeable surfacing. The areas are inspected on a daily basis. In the event of faults being identified, temporary repairs will be made immediately, and permanent repairs will be fitted within 5 working days. The approach taken to storage is set out in **Appendix 11, Waste Storage** and conceptually in the diagram below.



## Quarantine Area

The quarantine areas must be used to place burning wastes (if appropriate) to extinguish them. They may also be used to hold unburnt wastes if the burning waste is in another area of the site and cannot be relocated to a quarantine area.

The quarantine areas are located within the permit boundary. As shown on the site plan this area has an impermeable surface and is sealed/bunded. The quarantine areas are capable of holding >50% (1.8x) of the volume of the largest stockpile on site.

Dependent on the size and location of a fire, the mobile plant on site is capable of quickly clearing an area around the burning waste to provide a flexible quarantine area. The specified quarantine area must be kept clear at all times (unless being used in the event of a fire). The quarantine areas must remain accessible at all times.

In the event of a fire, the following procedure must be put in place:

- During a fire event, the Authorised Person (Site Manager or TCM) or his Appointed Deputy must inspect the quarantine area.
- Mobile plant must be utilised to move temporarily quarantined material.
- Burning materials or hot waste must be transferred via mobile plant to the quarantine area.
- The quarantine area has a 6-metre stand-off from the site boundary, building and wastes.

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# Fire Prevention Plan (MA3)

For operational reasons the site has two flexible potential quarantine areas which can be used for fire management and non-compliant waste. The location of the quarantine areas is illustrated on **FPP Appendix 01: Site Plan**.

The quarantine areas is capable of holding up to 600 m<sup>3</sup> across both quarantine areas. See **FPP Appendix 01: Site Plan** for locations.

In the event of non-compliant waste being identified it must be immediately moved to the nearest quarantine area and marked with a red quarantine sign. The site manager must notify the customer of the non-conforming material within 24 hours of receipt, and arrangements must be made to return the material to the customer at the customer's expense. For operational reasons, the location of the quarantine area is flexible and possible locations of the quarantine areas are illustrated on the site plan. Combined the quarantine areas, can contain at least 50% of the largest waste storage area on site during normal operating conditions to facilitate the dousing of waste with the relevant fire extinguisher/smouldering of waste and the separation of unburnt waste for both waste stored internally and externally. Appropriate PPE must be worn by site operatives. The placement of the quarantine areas is based on the following factors:

- It allows for the prompt and direct removal of smouldering, burning or fire damaged wastes from the waste storage areas and to allow access by the Fire & Rescue Service (FRS); and
- Avoid proximity to flammable liquids – the quarantine area is situated at least 6m from any potentially flammable liquids on site such as the diesel tank.

## Procedure for using the Quarantine Area

The Site Manager instructs all site operatives when and how the burnt or burning waste, or any hot loads delivered accidentally to site, must be moved to the quarantine area. The following procedure must be implemented on site:

- When it is safe to do so, the waste must be moved by on site plant to the quarantine area; The movement of the waste must be overseen at all times by the Site Manager or TCM to minimise any spillages and ensure the area is not overfilled.
- To limit any spillages, plant must not be overfilled when moving the waste.
- The burning or smouldering waste must be doused using the relevant fire extinguisher and covered with a lithium-Ion fire blanket.
- Burnt waste must be taken off site to a suitably permitted facility within 7 days (or sooner depending on WM3 assessment requirements). All site operatives must be trained to follow this FPP, and all procedures listed in the above sections.

## Detecting Fires

The site benefits from a fire detection system fitted with smoke detectors and call points linked to the fire alarm, throughout the buildings. The waste storage tents are fitted with domestic wireless smoke detectors. If the detection system is activated, the alarm will sound, and site operatives must call the FRS during operational hours. Outside of operational hours security or the on-site member of staff would call the FRS followed by the nominated site contact. The nominated site contacts would be the on-duty Fire Marshal as listed below:

- Ray Wiggan:

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- Steven Nash: and
- Linas Tamasauskas.

Out of hours, The following members of staff are keyholders and would be in attendance of a fire within 10mins and 15 minutes respectively:

<b>Key Holder 1</b> Linas Tamasauskas	At site	0 miles
<b>Key Holder 2</b> Oliver Lister	At site	0 miles

**In the event of a fire incident the Environment Agency's Incident Hotline must be called immediately (0800 80 70 60).**

The site is continuously monitored by site operatives throughout the working day to ensure the early detection of fires in waste storage areas. All areas where waste is stored are visually inspected throughout the day by site operatives, with thermal imaging camera checks, and outside of operational hours by the security guard or the member of staff resident on site. All findings are logged in the site diary. The site is fully equipped with CCTV cameras. If a fire is identified on the CCTV, site operatives must call the FRS during operational hours, and outside of operational hours security or the resident member of staff would call the FRS followed by the nominated site contact as above. Site boundary checks are completed weekly to ensure site security is maintained and the risk of arson is reduced. **FPP Appendix 05** contains the thermal check sheet template and **FPP Appendix 06** contains the site diary template. Note that remote thermal imaging is now also installed.

As outlined throughout the document, the following procedures must be put in place to detect fires:

- The site must be inspected visually throughout the day and at the end of the day for hot waste.
- The site must be inspected with a hand – held Thermal Imaging Camera throughout the day and at the end of the day for hot waste.
- The CCTV (cameras/monitors) can be remotely viewed via computer or mobile phone (internet offsite monitoring).
- The infra red system sends notifications to staffs mobile phones and can be programmed in a variety of ways for effective offsite, out of hours monitoring<sup>2</sup>. As there are multiple cameras on site, all areas are covered. In addition the storage areas have infrared cameras which can be accessed remotely, and which trigger a remote alarm for on-call staff.
- Fire detection sensors are fitted to the office.
- Site security is in place out of hours.

## Suppressing Fires

A water-based suppression system would not be suitable for the main waste types stored on site, being lithium-ion battery materials. A fire in this type of material is characterised as a Class B fire which

<sup>2</sup> The system will be managed by No2 Sigma XT Extinguishant Control Panels located within the building due to the design aspect of the Fire Suppression System. From these panels the fire alarm loop will be installed around all protected areas of the facility to the Intelligent reflective beam detectors located as required to provide coverage across all areas and the AF-X Nano Fire Suppression System. Local audible/visual alarms and manual call points are also proposed within all areas.

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should only be extinguished with an appropriate dry chemical extinguisher, powder unit or use of a fire blanket. The site has:

- 2 x lithium-ion fire blankets measuring 3.3m x 2.4m; and
- 10x Dry Powder (ceiling mounted) automatic units per building; and
- 15 x special 9 litre lithium fire extinguisher. The fire blankets and fire extinguishers are distributed throughout the site, as illustrated on the site plan (**FPP Appendix 01: Site Plan**)

All staff must receive fire extinguisher training and training on fire awareness. **FPP Appendix 04** lists firefighting equipment, **FPP Appendix 07** reproduces current fire training certificates of qualified staff, **FPP Appendix 08** contains the Fire Safety Audit Checklist, **FPP Appendix 09** contains the Fire Safety Training Programme and **FPP Appendix 10** contains the Fire Safety Training Record.

## Firefighting Techniques

All site staff must be trained to understand the principle that no one should put themselves at risk to fight a fire. Upon the detection of a fire, if it is safe to do so, site staff should attempt to extinguish the fire in 1 of 2 ways (depending on what the waste is):

### Waste metals only

Water should be deployed. If this is not possible or unsuccessful the Fire and Rescue Service (FRS) should be called immediately. This should be followed up with a call to the EA's incident reporting service on 0800 80 70 60. To deploy, the site provides the following resources:

- 100,000 litre water tank in the drainage system is available for fire suppression (tank holds a minimum of 80,000 litres) with external pumps/hose connectors. If needed, the FRS must then:
    - Lay flat fire hoses – (10 x 10m can extend to all waste storage areas)
- During a fire event the following techniques must be used to fight a fire:
- Applying water via layflat hoses to waste and other hazards;
  - Separating unburnt material from the fire using heavy plant if safe to do so; and
  - Separating burning material from the fire to quench it with hoses.

The location of the water tank can be seen in the site plan (FPP Appendix 01: Site Plan). The water tank is vertical and above ground. it must be equipped with a 2inch BSP male tank outlet and a 2 inch F x F BSP ball valve. The FRS will be able to connect to this tank with their hoses/appliances.

### Waste Batteries Only

The first approach is to deploy a Lithium-Ion Fire Blanket. If this is not possible or unsuccessful the FRS should be called immediately. This should be followed up with a call to the EA's incident reporting service on 0800 80 70 60. The site provides the following procedures and resources:

- Separating unburnt material from the fire using heavy plant if safe to do so; and
- Separating burning material from the fire to extinguish it using;
- 2 x lithium-ion fire blankets measuring 3.3m x 2.4m; and
- 10x Dry Power (ceiling mounted) automatic units per building; and
- 15 x 9 litre lithium fire extinguisher.

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# Fire Prevention Plan (MA3)

The fire blankets and fire extinguishers are distributed throughout the site, as illustrated on the site plan (**FPP Appendix 01: Site Plan**).

## Fire & Rescue Service

The closest Fire Station is located in Weston-Super-Mare, to the southwest. Using google directions and mapping, the drive time is approximately 7 minutes and approximately 2.4 miles between the site and the Fire Station. Copies of the latest FPP must be shared with all the relevant FRS watches that may attend a fire at the site and regular walk rounds scheduled to discuss issues and site layout.

Fire extinguishers are to be used in the following circumstances:

- Where operators are trained in use, and if confident to tackle the fire; and
- On very small fires, or to facilitate own escape if trapped by fire.

## Small Fire

A small fire or area of smouldering waste must be dealt with as follows:

- A fire or area of smouldering waste must not be dealt with in-situ, mobile plant must be utilised to pull the affected waste into the open and away from any further waste that could become a light on contact; and
- Depending on the size/nature of the fire the waste must either be: Extinguished immediately utilising the fire extinguishers; or Moved to the quarantine area and extinguished.
- Depending on the size, location and nature of the fire the burning waste must be pulled into the quarantine area following the procedures detailed within this fire prevention plan.

Once a small fire is dealt with the remaining area must be visually inspected immediately by site operatives for any signs that a fire/smouldering waste remains. The same procedure, detailed in this section, must be implemented should this be the case.

## Uncontainable Small Fire or Large Fire

The following procedure is in place on site that must be followed in the event of a small fire becoming uncontainable or in the event of a major fire onsite;

- The Site Manager and FRS must be contacted immediately. The EA must be notified at the first opportune moment.
- Following arrival of the FRS, all site staff must take instructions from the FRS which may include any of the following:
- If possible, waste that is unburnt must be doused with a fire extinguisher to prevent the fire from spreading further;
- If possible, unburned material must be separated from the fire using heavy plant;
- The burning area must be isolated, and attempts must be made to extinguish the fire utilising the onsite fire extinguishers if safe to do so; and
- The site and buildings must be evacuated.

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# Fire Prevention Plan (MA3)

## Water Supplies

### Waste Batteries

Water would not be suitable for fire suppression with this waste type. A fire in this type of material would be characterised as a Class B fire which should only be extinguished with a standard ABC or dry chemical extinguisher. Therefore, the site does not require a water supply for fire suppression of waste battery material.

As described above, the site has two lithium fire blankets, 15 special lithium fire extinguishers, and 10x Dry Power (ceiling mounted) automatic units per building.

### Waste metals

Waste metal fires may be suppressed with water. From EA guidance – the worst-case scenario would be the largest waste pile catching fire and a water supply of a least 2,000 litres a minute for a minimum of 3 hours is required for a 300 m<sup>3</sup> pile of combustible material if no other actions are taken, e.g. creation of fire breaks. The site must maintain adequate fire breaks (by distance) and also utilise powder fire extinguishers suspended above the waste in the building to give full coverage.

Mains water is available for fire fighting with a hydrant on Kewstoke Road. Its effectiveness was demonstrated in March this year when FRS responded to an arson incident. However, the site may need to take alternative steps in ensuring an adequate water supply is in place.

The largest stockpile of combustible waste (waste metal or polymer) on site is 198.17 cubic meters (Tent 1). 6.7 litres of water is required per minute, per cubic meter for a period of 180 minutes. We have calculated that the amount of water needed for a stockpile of this size is 239,632.2 litres over 3 hours.

Maximum pile volume in cubic metres	Water supply needed in litres per minute	Overall water supply needed over 3 hours in litres
198.17	1,331.29	239,632.2

Calculating that the fire hydrant can deliver 480 litres per minute, or 86,400, this would require 3 engine units. However, in the event of a shortfall, water can be provided from the water storage tank.

The proposal is that if this water storage is kept at 50% capacity, it can provide an alternative supply to complement the mains, with a 100,000 litre water tank serving (as explained above to hold drain and interceptor overflow). If the EA requires that 100% be provided from an on site source, an additional 100,000 litre tank will be acquired for this sole purpose. This 100,000-litre water storage tank (has an external pump with a rated capacity of 600 litres per minute flow rate. The pump must be permanently coupled to the tank via a suction hose with a length of 6 meters and a diameter of 50mm. The discharge lay flat hose must also be 50mm in diameter. The length can be varied by 10 meters respectively via quick release lever lock couplings. The maximum length can therefore be

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extended to reach all operational areas within the yard. The site must have 10 x 10-meter lengths of lay flat hose (connected by quick release level lock couplings). The external pump must be always primed ready to discharge water. The pump must be a Honda WB20XT water pump that operates on unleaded fuel. The fuel tank capacity is 2.5 litres which consumes 1 litre of fuel per hour. This must give us a total run time of 115 minutes. Refuelling can take place whilst the pump is in operation. If tank is not at the right level it will be topped up with mains water (eg if there has been insufficient rainfall at the site).

The lay flat hose must be stored directly next to the pump. The lay flat hose must be laid out in the direction of the fire and can be coupled within a matter of minutes. The pump can be engaged via a pull cord and disengaged via a cut of switch. The water pump must be subject to weekly checks and servicing in line with manufacturers guidelines. The pump must be tested within the weekly checks to ensure it is in good repair and functioning correctly.

All staff must be trained on how to engage and operate the pump, along with connecting the hoses and carrying out the weekly checks. The location of the water tank can be seen in plan 1. The water tank must be vertical and above ground. it must be equipped with a 2inch BSP male tank outlet and a 2-inch F x F BSP ball valve.

## Managing Fire Water

### Waste Batteries

Water should not be used for fire suppression because it is not suitable for suppression of Class B fires. A Class B fire should only be extinguished with a standard ABC or dry chemical extinguisher, or smothered with lithium-ion fire blankets. Therefore, there should be no run-off from fire water and fire water containment must not be required. However, in the event that the FRS does use water on waste batteries, waste acceptance, storage, treatment and processing areas of the site are impermeably surfaced and benefit from a sealed drainage system. The system x2 20,000 litre interceptors and, a 100,000-litre water tank that is used to store the interceptor water by pumping it into the tank to pump water from the interceptors. Therefore, all powders released from the special lithium fire extinguishers would be contained within the site, as would any fire water. Following a fire, the suppression powder would be cleaned from site surfaces by suitably trained site operatives via scraping/sweeping as appropriate and stored within a designated covered skip, prior to removal to a suitably permitted site within 24 hours of discharge.

### Waste metals

Water used for fire fighting activities must drain to x2 interceptors. A drainage plan is shown on site plan (FPP Appendix 01: Site Plan). The outlets to the soakaway are permanently blocked using concreted drain plug/bung. The interceptors once filled to 80% capacity are pumped into the 100,000 litre water tank. The site has a 150 mm bunded curb installed around the site perimeter of the quarry wall. Every waste storage tent also has a 150 mm bunded curb which can also be used for fire water containment (although only effective if the 2 openings to the building are blocked off, which must be done with moveable bunding/seals). We estimate that well in excess of 1,000,000 litres of water can be stored (to a height of 90 mm) within this containment, and along the rest of the site, with the potential to contain twice this quantity. Although this is achievable if needed, the site is intending on using the 100,000 litre water tank to store any discharged fire water run of. As explained above, it is proposed that it will provide 50% of the water required for the largest pile size, with the balance from

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the mains (unless a dedicated on site source for 100% is required, in which case a further tank would be installed).

Site area: 18,323 m<sup>2</sup>

Bund depth: 150 mm

$0.150 \text{ m} \times 18,323 \text{ m}^2 = 2,748 \text{ m}^3$

$2,748 \text{ m}^3 \times 1000 \text{ (litres)} = 2,478,000 \text{ litres (containment)}$

The site surface is engineered with the gradient allowing liquids to flow towards the aco drains which lead to the interceptor and away from the site boundary (see **FPP Appendix 01: Site Plan**). After a fire event, any contaminated firewater stored within the interceptors and above ground must be pumped into the 100,000 litre tank. The water must then be tested and either removed from site via a gulley tanker (to an authorised facility with the requisite paperwork) or with the agreement from the EA (and subject to any remediating treatment) to be allowed to discharge through the site's soakaway to ground.

The drains on site must be kept clear of debris and blockages at all times to ensure egress of water in an emergency. The Authorised Person (Site Manager or TCM) must check the drains on a regular basis. Combustible waste piles are stored on an impermeable surface and not hard standing - therefore the potential threat to groundwater, wells, springs and boreholes is eliminated.

All stacks, piles and containers of combustible material shall be stored in accordance with the fire plan to ensure the risk of a fire spreading from one stack to another is minimised. Firewater runoff must likely contain a moderate biological and chemical oxygen demand as well as trace compounds dissolved from the gaseous emissions, along with metals. As this site can contain contaminated firewater, the environmental impact from the runoff must be eliminated.

## During and After an Incident

Lincoln Storm would cease operations until the EA / FRS advised that the site could be reopened. Lincoln Storm has outlets in place to divert wastes as required.

Lincoln Storm must inform those who may be affected by fire, such as nearby residents and businesses, via word of mouth. During fire event training sessions, specific site staff must be given specific areas to visit during a fire event – the site staff must be asked to inform those affected that there is a fire event on site and must give useful information such as to close windows and doors if possible and to avoid the area until the fire is under control. The site staff must also pass on any specific instructions from the FRS.

Lincoln Storm must ensure that if the waste has become hazardous in nature as a result of the fire, the waste must be tested and assessed prior to removal from site, and that consignment notes must be issued in transit to the receiving site. The receiving site must be fully permitted and aware of the potential hazards associated with the wastes.

Any fire water that is contained within the yard must be pumped into the water tank and later collected via tankers 18.5 Lincoln Storm must ensure that all fire-damaged waste is be removed using an appropriate EWC codes which are likely to be 19 12 11 or 19 12 12.

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# Fire Prevention Plan (MA3)

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

- A fire or near miss of a fire on site;
- A change or review of legislation;
- A change in the environment surrounding the site;
- A change to operations on site; or
- If the site is instructed to do so by the EA.

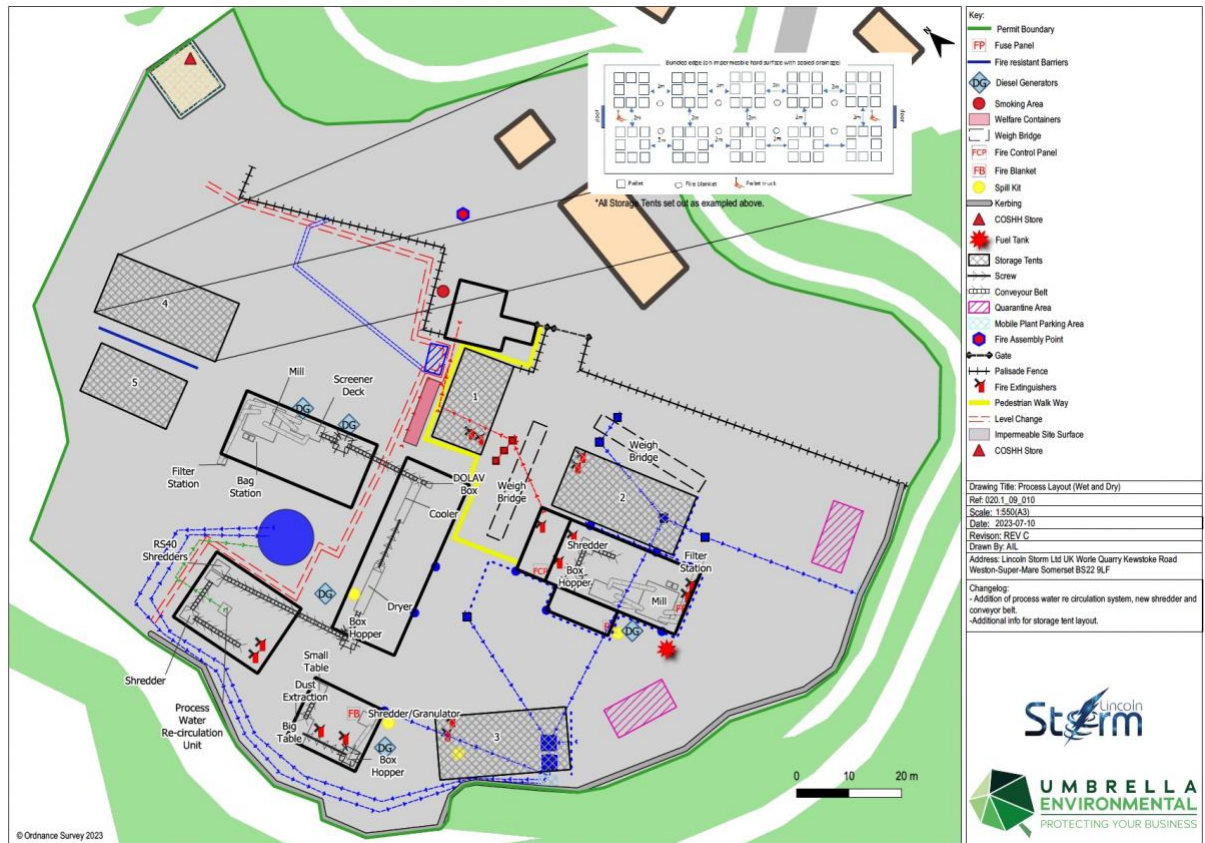
It is the responsibility of the Site Manager or nominated person to maintain this FPP and to ensure it is adhered to in the event of a fire on site.

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## FPP Appendix 1: Site Plan

### Main plan

Claimed Confidential



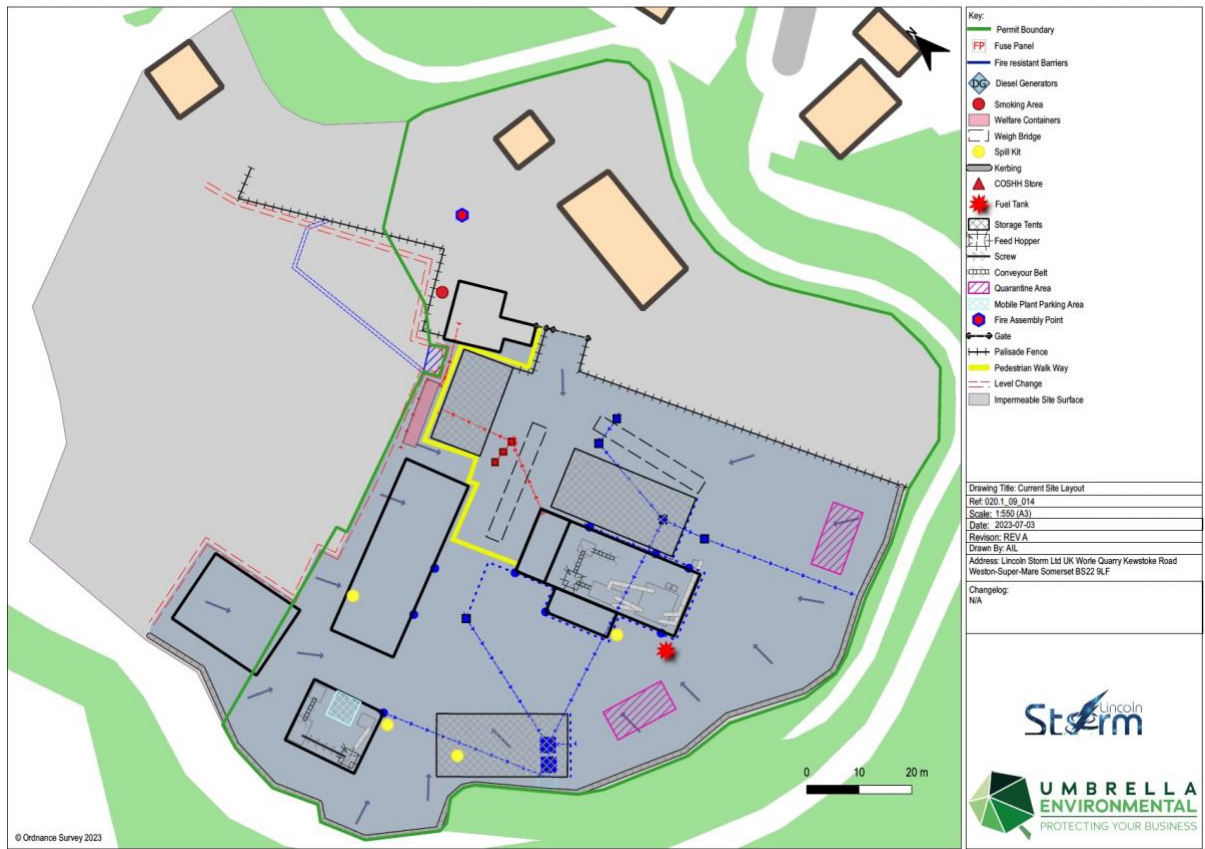
**Notes to Site Plan:** (1) The site treats all waste received and held as if it is hazardous. All storage and processing areas are configured accordingly; (2) gas cylinders are stored offsite in the maintenance unit at the North of the quarry; (3) Maintenance oils are stored at offsite (in maintenance unit); (4) Personal Protective Equipment (PPE) and (5) fire hose are stored in the office building (see where 'fuse panel' on legend is located); (6) fire vehicle access is through the main west gate of the site and/or the North East entrance. The nearest fire hydrant is on Kewstoke Road (and has been successfully accessed).

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## Drainage fall lines

**Claimed Confidential**

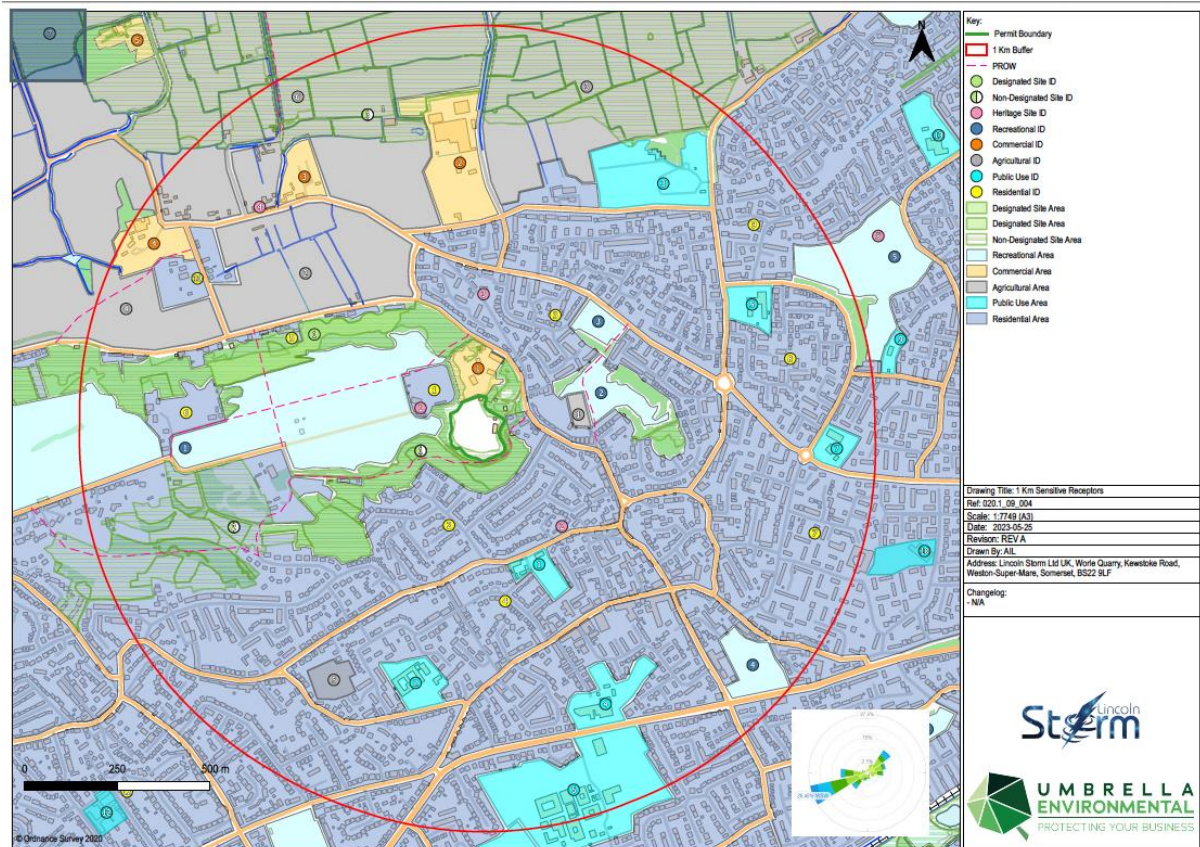


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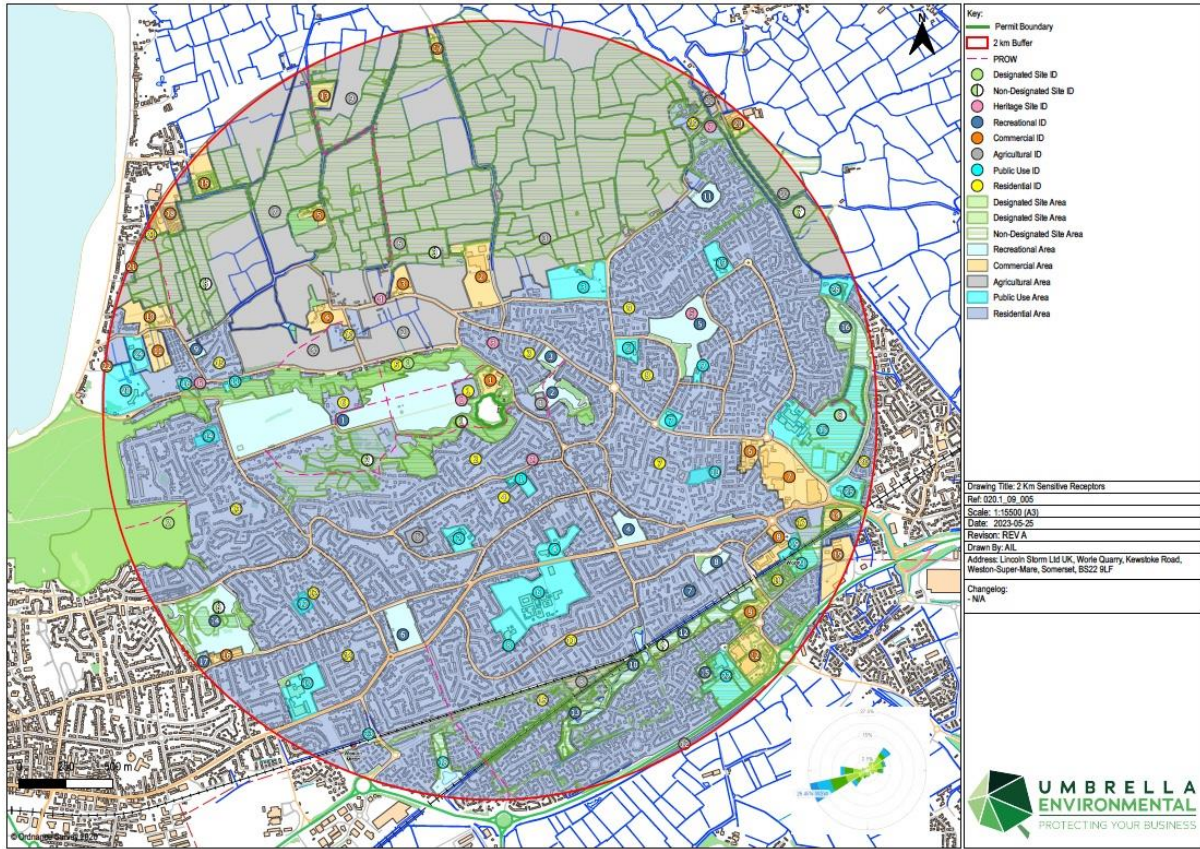
## FPP Appendix 2: Sensitive Receptor Plans

1 km



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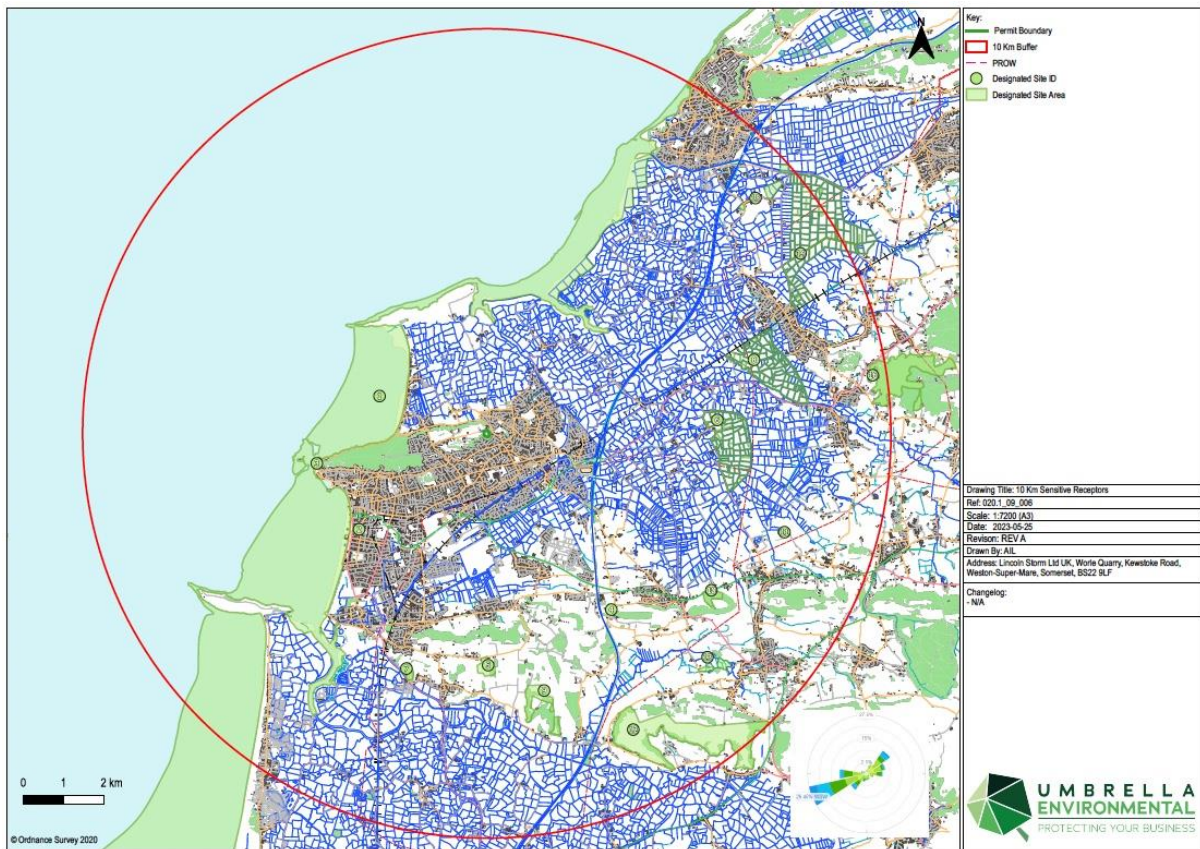
2km



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## 10 km



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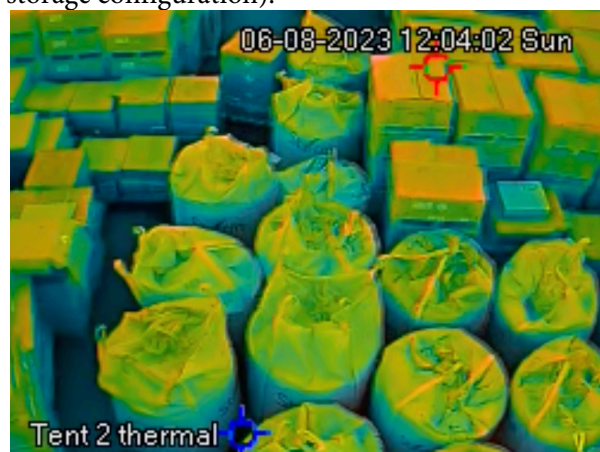
# Fire Prevention Plan (MA3)

## FPP Appendix 03: Table of Wastes Stored and Pile Sizes

Material and fraction size	Max Volume	Size of pile or container	Storage location	Max time on site	Combustible Y/N
Cells and modules, including dry cells (16 06 05) Large solid waste	500 MT 218.4 MT in operational plan	Tent 2: 151.2 m <sup>3</sup> Tent 4: 236.25 m <sup>3</sup> Tent 5: 151.2 m <sup>3</sup>	Tents 2, 4 and 5	30 days 7 to 14 operational plan	Y
Aluminium and copper granules (19 12 03) 0.8mm-2mm	60 MT 52.5 MT in operational plan	Tent 1: 61.37 m <sup>3</sup> Tent 3: 46.03 m <sup>3</sup>	Tent 1 and 3	30 days 7 to 14 operational plan	Y
Storm Black Product (post-end of waste) (sub<0.2mm)	300 MT 200 MT in operational plan	Tent 3: 153.43 m <sup>3</sup>	Tent 3	30 days 7 to 14 operational plan	Y
Polymer (PP/PE) (19 12 12) 2mm to 3mm	30 MT 23.85 MT in operational plan	Tent 1: 136.80 m <sup>3</sup> Tent 3: 54 m <sup>3</sup>	Tent 1 and 3	30 days 7 to 14 operational plan	Y
Shredded LIBs (19 10 05* or 19 10 06) 30mm to 40mm	200 MT -	-	New tent if received	30 days 7 to 14 operational plan	Y
Separated foil fraction (anode/cathode)	50 MT -	-	New tent if received	30 days 7 to 14 operational plan	Y
EV Packs (16 06 05) Large solid waste	35 MT -	-	New Tent if received	30 days 7 to 14 operational plan	Y

The following pages show the layout (including location identification codes) for the material shown in the table above, for each storage area. An additional tent will be added to this to store Electric Vehicle batteries (EV) which are received for onward shipping to the United States.

Note that remote thermal imaging is now installed in all storage areas (see illustrative image below - not showing in proposed storage configuration).



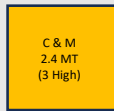
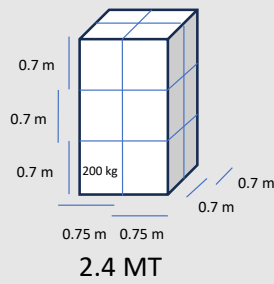
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# Fire Prevention Plan (MA3)

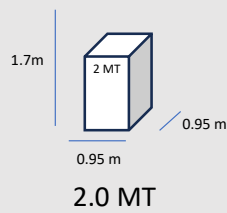
## Storage Key

The diagrams below show the dimensions and weights of materials stored at the facility. It is assumed that a space of 2 metres is required for a forklift to have access to each pallet.

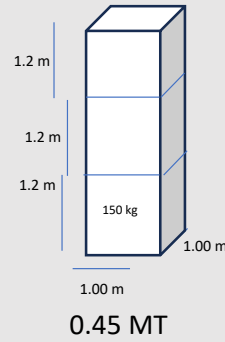
Cells and modules  
(including ESS packs)



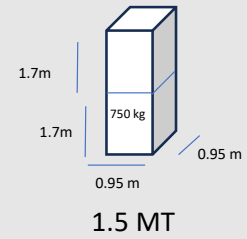
Storm Black™



Polymer



Aluminium and  
copper



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## Tent 1

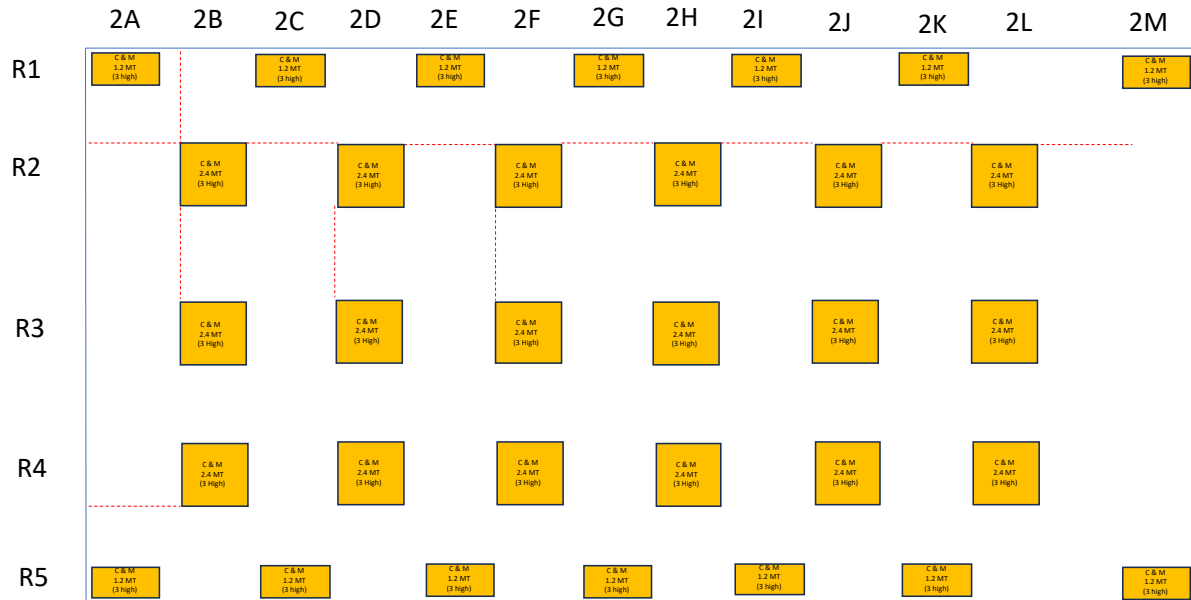
— = 1 m

Holding 47.1 MT of Storm Black™, Polymer and Aluminium and Copper

	1A	1B	1C	1D	1E	1F	1G	1H	1I	1J	1K	1L	1M	1N						
R1	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)						
R2		Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)						
R3		Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)	Polymer 0.45 MT (3 high)						
R4	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)	Al & Cu 1.505 MT (2 high)						
	1bA	1bB	1bC	1bD	1bE	1bF	1bG	1bH	1bI	1bJ	1bK	1bL	1bM	1bN	1bO	1bP	1bQ	1bR	1bS	1bT

## Tent 2 Holding 60 MT of Cells and Modules

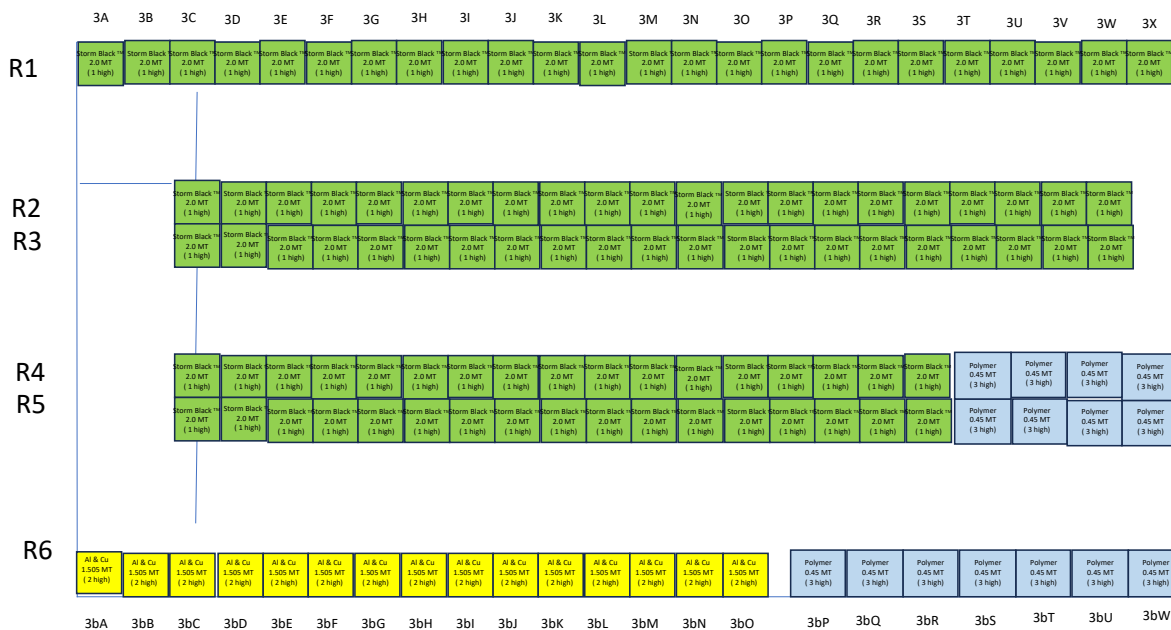
— = 1 m



## Tent 3

Holding 229.25 MT of Storm Black™, Polymer and Aluminium and Copper

— = 1 m





Tent 4  
Holding 98.4 MT of Cells and Modules

— = 1 m



Tent 5 is configured as Tent 3

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## FPP Appendix 04: Equipment Register/Information

Equipment	Amount
AVD Lithium Battery Fire Blankets. 3m x 3m.	1
Ceasefire Standalone Fire Suppression System. ABC Dry Powder stored pressure ceiling mounted fire extinguisher 5Kg CF-000017	20
Firechief Lith EX AVD Extinguishers 9 Litre Water Based 13A	15
Firechief Foam Fire Extinguishers 6 Litre AFFF 21A 144B	6
Firechief CO2 Fire Extinguisher 2Kg Carbon Dioxide 34B	3
Firechief Fire Blanket SVB1/K40. 1m x 1m.	1

## Fire Extinguisher Monthly Checklist

### Fire Extinguisher Monthly Checks



Date: 11/07/23 Carried out by: Steve Nash

#### Office

Fire Extinguisher Type	Quantity	Condition	Comments
Foam	1	OK	
CO2	1	OK	

#### Kitchen

Fire Extinguisher Type	Quantity	Condition	Comments
Foam	1	OK	
CO2	1	OK	
Fire Blanket	1	OK	

#### Tent 1

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	1	OK	

#### Tent 2

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	1	OK	
Foam	1	OK	

#### Tent 3

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	2	OK	13 Lithium Powder sprinklers on a pallet waiting to be fitted to the ceiling of each tent. Scheduled for next week when we get the cherry picker.

#### Tent 4

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	1	OK	

#### SRT Plant Room

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	5	OK	3 ceiling mounted lithium sprinklers fitted.
Foam	1	OK	
Powder	1	OK	

#### Electrical Room

Fire Extinguisher Type	Quantity	Condition	Comments
CO2	1	OK	8 Lithium Powder sprinklers on a pallet waiting to be fitted to the ceiling of each tent. Scheduled for next week when we get the cherry picker.
Powder	1	OK	

#### Dryer Building

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	3	X	1 Lithium has slightly low pressure.
Foam	2	OK	
Lithium Fire Blanket	1	OK	

#### Shredder Building

Fire Extinguisher Type	Quantity	Condition	Comments
Lithium	4	OK	
Foam	2	OK	

#### Diesel Tank

Fire Extinguisher Type	Quantity	Condition	Comments
Foam	1	OK	

## Fire System Certification



Report Number: 1492

Multi Security (UK) Ltd  
252 Milton Road  
Weston-Super-Mare  
North Somerset  
BS22 8EN

### Fire Alarm Compliance Certificate

Date Issued: 03 Feb 2023

#### Client and Job Details

Client	Lincoln Storm	Contract	
Contact		Job No	12986
Telephone		Email	
Site	Lincoln Storm The Quarry Lower Kewstoke Road Worle Weston Super Mare BS22 9LE	Call Type	Preventative Maintenance
		Reported Reason for Call	Preventative Maintenance
		Client Order	Fire alarm install

#### System Details

Model	Id2	System Type	Fire alarm addressable
Panel Type Audible and	Addressable Wired/wireless	Signal Type	
Grade	L2	Software Version	

#### Service Checks

Is this the last routine inspection within a 12 month period?	Yes
BAFE Certificate of Compliance on Site?	Yes
BAFE Certificate #	2143
System Category	
Power Supplied Checked?	Yes
Charge Volts	24 V
Battery Volts	23.35 V
Battery Size	14 Ah
Standby Battery Load Tested?	Yes
Standby Period	48 Hours
Quiescent Load	3.5 Amps
Alarm Load	4.00 Amps
<b>Subclause 45.3 Periodic Inspection &amp; Test</b>	<b>Subclause 45.5 Periodic Inspection &amp; Test - 12 month period</b>
<input checked="" type="checkbox"/> Log Book Updated	Cause & Effects Tested 100%
<input checked="" type="checkbox"/> Survey for change of layout / use	Cables & Fixings Inspected 100%
<input checked="" type="checkbox"/> Link to ARC / Fire Brigade Checked	Alarm Warning Devices Tested 100%
<input checked="" type="checkbox"/> O&M Documents, Certificates, Drawings Seen	Analogue Levels Checked 100%
<input checked="" type="checkbox"/> Control and Indicating Equipment Checked	Detectors & Call points tested 100%
<input checked="" type="checkbox"/> Detectors are not obscured	

#### Engineer's Declaration

I confirm as the competent person acting on behalf of Multi Security (UK) Ltd that the works undertaken as requested by the client as identified on this certificate, comply with the recommendations of clause 45 of BS5839-1:2017 (periodic inspection and test/inspection of systems over a 12 month period) with the exception of variations listed herein (if any).

Variations from the recommendations of clause 45 of BS5839-1:2017 (periodic inspection and test/inspection of systems over a 12 month period)

Commissioning certificate.

#### Engineers Findings and Actions

#### Client Declaration

I have agreed for alarm sounders to be tested as required by BS5839-1:2017 (periodic inspection and test/inspection of systems over a 12 month period)

Date	Customer Name / Signature	Engineer Name / Signature
03-02-2023		Darrell Hughes
		(autosigned) Darrell Hughes



Multi Security (UK) Ltd - Tel 01934 621066 - Email admin@multi-security.co.uk - Registered Company 11832132 - VAT No. 987182176

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## FPP Appendix 06: Site Diary Template

### Site Diary

Date: | Weather Conditions: | Wind Direction: | Wind Speed:

Condition of site perimeter/boundary	Condition of impermeable surfaces	Noise levels at acceptable levels
Fuel Tanks and Generators	Condition of hard standing	Site free from pests/vermin
Fire prevention measures implemented	Condition of site drainage systems	Site infrastructure in good repair
Site noticeboard in good repair	Stock temperature recordings carried out	TCM attendance
All waste stored on site is compliant	Litter not outside of site boundary	Storage areas free from ingress of rain water
Non-compliant waste on site is in quarantine	Mud not escaping onto public highway	Site equipment/plant in good repair
Waste volumes on site compliant	Dust levels at acceptable levels	Compliance with duty of care documentation
Waste quantities on site compliant	Odours on site at acceptable levels	Spill kits in place
Hazardous waste is stored appropriately	Rock Fall from Quarry Wall	Bung in place
All waste is protected from adverse weather	Waste is fully secure (no spillage on bags)	No signs of contaminated run off from wastes
No waste treatment taking place	Waste batch records (tracking) up to date	Other (please state) -

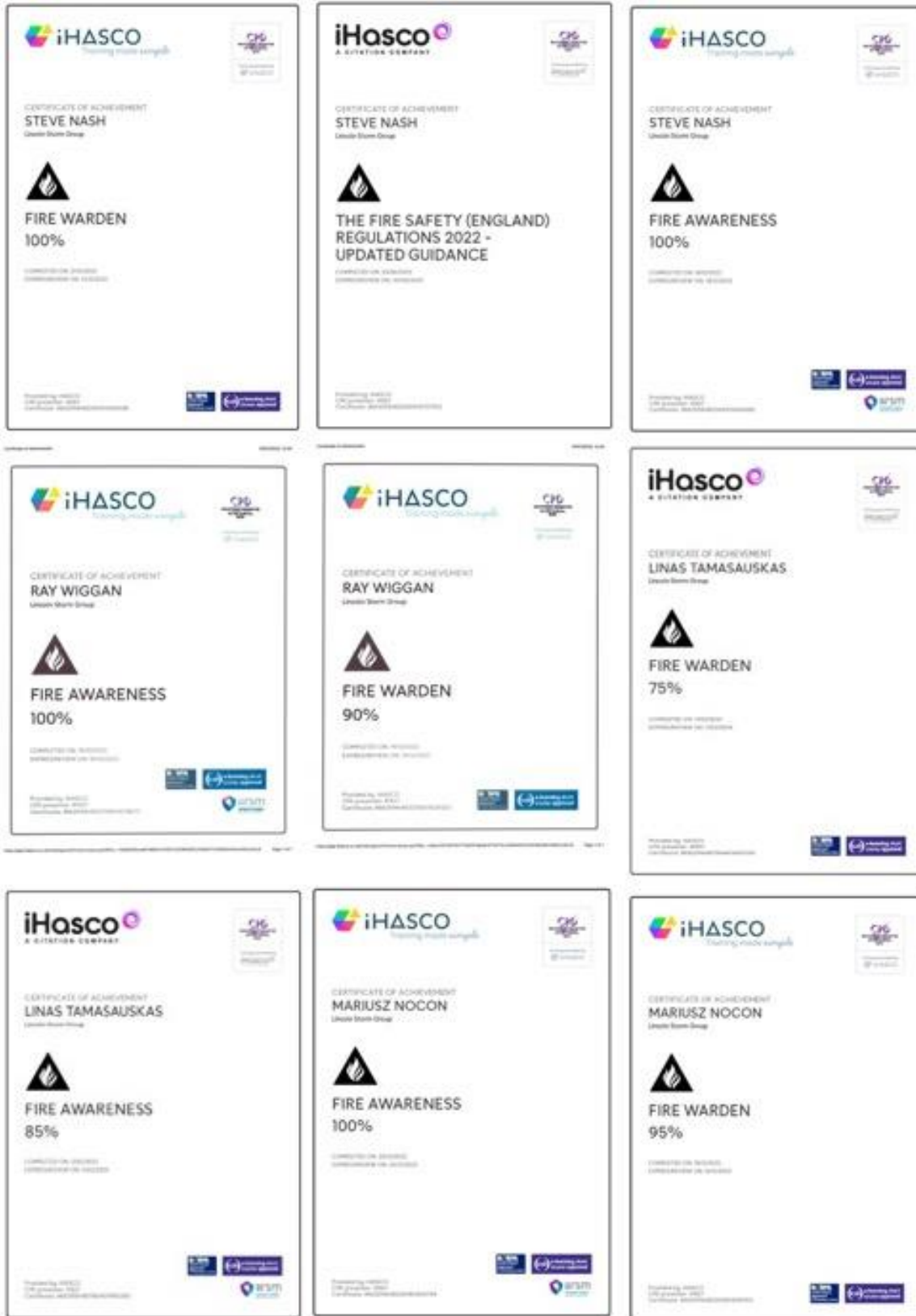
General site activities, maintenance undertaken, breakdowns, emergencies, complaints, environmental problems, and non-compliance details	
	Operating Hours
	Start:
	End:
	X Staff on site
	Steve
	Ray
	Mariusz
	Linus
	Oliver
	Rahune
	TCM on site
	Name:
	Start:
	End:

Diary completed by:

Signature:

—

## FPP Appendix 07: Fire Training Certificates



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## FPP Appendix 08: Fire Safety Audit Checklist

	YES	NO	N/A	COMMENTS
<b>Daily Checks (not normally recorded)</b>				
<b>Escape Routes</b>				
Can all fire exits be opened immediately and easily?				
Are fire doors clear of obstruction?				
Are escape route clear?				
<b>Fire Warning Systems</b>				
Is the main indicator panel showing "normal"?				
Are alarms / sirens / sounders in their correct place?				
<b>Escape Lighting</b>				
Are lights and exit signs in good condition?				
Is the emergency lighting and signs working normally?				
<b>Firefighting Equipment</b>				
Are all fire extinguishers in place?				
Are all fire extinguishers clearly visible?				
Are all fire hydrants accessible for the fire service?				
<b>Weekly Checks</b>				
<b>Escape Routes</b>				
Do all emergency fastening devices work correctly?				
Are fire doors clear of obstruction?				
Are all external escape routes clear?				
<b>Fire Warning Systems</b>				
Did the fire alarm work correctly when tested?				
Did staff and all others hear the alarm working?				
Did any linked fire protection system operate correctly?				
<b>Escape Lighting</b>				
Are charging indicators visible and illuminated?				
<b>Fire fighting Equipment</b>				
Are all fire fighting equipment in working order?				
Are all fire extinguishers mounted 1 - 1½ metres?				
<b>Monthly Checks</b>				
<b>Escape Routes</b>				
Are all door seals and intumescent strips in good condition?				
Are all external stairs in good condition and non-slip?				
Do all internal fire doors close against their rebate / stop?				
<b>Escape Lighting</b>				
Do all lights and exit signs working when tested?				



Are emergency generators working correctly?				
<b>Firefighting Equipment</b>				
Is the "pressure" in stored pressure extinguishers correct?				

### Six Monthly Checks

<b>General</b>				
Has the emergency evacuation lift (if fitted) been tested?				
Have sprinkler systems been tested by a competent person?				
Have release and closing mechanisms on fire resisting compartment doors and shutters been tested?				
<b>Fire Warning Systems</b>				
Has the system been checked by a competent person?				
<b>Escape Lighting</b>				
Do all lights work for a third of their rated value?				

### Annual Checks

<b>Escape Routes</b>				
Do all fire doors work correctly?				
Is escape route compartmentation in good condition?				
<b>Fire Warning Systems</b>				
Has the system been checked by a competent person?				
<b>Escape Lighting</b>				
Do all lights operate on test for their full duration?				
Has the system been checked by a competent person?				
<b>Firefighting Equipment</b>				
Has all equipment been checked by a competent person?				

### Miscellaneous

Have dry / wet risers been tested by a competent person?				
Has smoke control systems been tested by a competent person?				
Has external access for the fire and rescue service been checked for availability at all times?				
Have any fire fighters switches been tested?				
Are fire assembly points clearly indicated by signs?				

### Fire Plan Checks Daily

Is the Fire Plan available to all site staff?				
Are the waste stockpiles at required size?				
Are fire breaks and quarantine areas clear?				
Is the 1m freeboard clear?				
Has loose waste been cleared?				

Version 1  
July 2023

Lincoln Storm Ltd

**Appendix 1 – CF - 01 FIRE SYSTEM TEST – EQUIPMENT TEST (ANNUAL)**

Test Date	Equipment Type	Location	Comments

**Appendix 2 – CF - 02 FIRE SYSTEM TEST – SYSTEM/SENSOR TEST (WEEKLY)**

Test Date	Comments	Description of any Defects Evident	Repaired By Date

**Appendix 3 – CF - 03 FIRE SYSTEM TEST – EMERGENCY LIGHTS (MONTHLY)**

Test Date	Comments	Description of any Defects Evident	Repaired By Date

**Appendix 4 – CF - 04 FIRE SYSTEM TEST – FIRE DRILL (MONTHLY)**

Date	Time	Comments

## FPP Appendix 09: Fire Safety Training Programme

### Appendix 6 – CF - 06 FIRE SAFETY TRAINING PROGRAMME

All employees will receive adequate fire safety training and all fire safety training sessions will be delivered by a competent person. There will be one / two fire drills per year to test the fire safety training.

#### Fire Safety Training Sessions

**New Employees:** Induction Programme

**Current Employees:** MIN one session per year

**Fire Wardens:** One / Two training sessions per year specific to their duties

One / Two training sessions per year specific to their duties and including fire safety risk assessment, responding to fire hazards, fault reporting procedures, liaising with the fire service, record keeping, induction of new staff, fire safety policies and procedures.

#### Topics

- The significant findings from the fire risk assessment and fire safety policies
- The Fire Plan
- What to do on discovering a fire
- How to raise the alarm, including the locations of fire alarm call points (break glass points)
- The action to take upon hearing the fire alarm
- The evacuation procedure for alerting guests, residents and visitors including, where appropriate, directing them to exits and assembly points at a place of total safety
- The arrangements for calling the fire and rescue service
- The location and, where appropriate, the correct use of portable fire extinguishers and fire-fighting equipment
- Knowledge of escape routes including stairways and especially those not in regular use
- How to open all emergency exit doors
- The appreciation of the importance of fire doors, keeping them closed and not wedged open to prevent the spread of smoke and heat, keeping escape routes unobstructed
- Where appropriate, isolating electrical power and gas supplies and stopping machines and processes
- The safe use of and risks from storing and working with highly flammable and explosive substances
- General fire precautions, fire awareness and good housekeeping practices
- The no smoking policy (where applicable)
- Special provisions for assisting disabled people and any training needed
- Identifying fire hazards and fire incidents reporting procedures
- Equipment fault reporting procedures

#### Fire Safety Training Records

All fire safety training will be recorded to include the date of instruction; the duration, name of the person giving the instruction, names of persons receiving the instruction; and the nature of the instruction and / or, drill.

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## FPP Appendix 10: Fire Safety Training Record

### Appendix 7 – CF - 07 FIRE SAFETY TRAINING RECORD

Date: \_\_\_\_\_ Duration: \_\_\_\_\_  
 Given By: \_\_\_\_\_ Session For: \_\_\_\_\_

**Subjects Covered**

- The significant findings from the fire risk assessment and fire safety policies and the Fire Plan
- What to do on discovering a fire
- How to raising the alarm, including the locations of fire break glass points
- The action to take upon hearing the fire alarm
- The evacuation procedure for alerting guests, residents and visitors including, where appropriate, directing them to exits and assembly points at a place of total safety
- The arrangements for calling the fire and rescue service
- The location and, where appropriate, the correct use of portable fire extinguishers and fire-fighting equipment
- Knowledge of escape routes including stairways and especially those not in regular use
- How to open all emergency exit doors
- The appreciation of the importance of fire doors, keeping them closed and not wedged open to prevent the spread of smoke and heat, keeping escape routes unobstructed
- Where appropriate, isolating electrical power, gas supplies, stopping machines and processes
- The reasons for not using lifts (except those specifically constructed as evacuation lifts)
- The safe use, risks from storing and working with highly flammable/ explosive substances
- General fire precautions, fire awareness and good housekeeping practices
- The no smoking policy (where applicable)
- Special provisions for assisting disabled people and any training needed
- Identifying fire hazards and fire incidents reporting procedures; and
- Equipment fault reporting procedures.

**Names of those attending:**

PRINT NAME	SIGNATURE

I confirm that I have delivered the above subjects to those named above as attending.

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signed: \_\_\_\_\_ Position: \_\_\_\_\_

## FPP Appendix 11: Emergency Actions

### Appendix 8 EMERGENCY ACTIONS

THIS PLAN WILL BE ACTIVATED WITHOUT DELAY WHEN
<ul style="list-style-type: none"> <li>• A fire is confirmed on site</li> <li>• An uncontrolled event occurs which could reasonably be expected to lead to a fire on site</li> <li>• A major accident is an occurrence (including in particular a major emission, or explosion) resulting from uncontrolled developments in the course of the operations, and leading to serious dangerto human health or the environment, immediate or delayed, inside or outside the establishment.</li> </ul>

THE FOLLOWING PEOPLE WILL BE RESPONSIBLE FOR ACTIVATING THE PLAN
<p>Steve Nash / Ray Wiggan Site Manager / Plant Manager</p>

HOW THE PLAN WILL BE ACTIVATED
<p>A member of Lincoln Storm Ltd staff from the above list will make a 999 telephone call to each of the relevant emergency numbers. Note that the order in which each service is called will be dependent on the nature of the incident.</p> <p style="text-align: center;">Emergency Services 999 Environment Agency 0800 80 70 60</p>
<p style="text-align: center;">When making each '999' call staff should provide the following information: Lincoln Storm Ltd. Worle Quarry, Lower Kewstoke Road, Worle. BS22 9LF</p> <ul style="list-style-type: none"> <li>• the National Grid Reference for the site: ST 35129 63207 Details of the Incident             <ul style="list-style-type: none"> <li>• If any staff are known to be reported missing</li> </ul> </li> <li>• Where the arriving first responders will be met (in a safe location, away from any smoke plume with all relevant information on the details of the incident and a copy of this plan)</li> </ul>

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