



Fire Prevention Plan

Avonmouth Shredder EPR/PP3099FM (EAWML 27202)

PURPOSE

The Fire Prevention Plan (FPP) is a separate document that in conjunction with the Emergency Contingency and Accident Management Plan forms part of the Environment Management System. The FPP sets out the fire prevention measures and procedures in place on site to prevent a fire from occurring and detect, suppress and mitigate in the event one breaks out.

The fire prevention measures in this guidance have been designed with regard to EA Guidance to meet the 3 key objectives:

PREVENTION - minimise the likelihood of a fire happening

RESPONSE - aim for a fire to be extinguished within 4 hours

RESPONSE - minimise the spread of fire within the site and to neighbouring sites

It is strongly recognised that there is a need for emergency preparation and response as it cannot be accepted that all risks will be eliminated and all fires will be prevented by following this document. Emergency preparation and response is therefore covered in the Emergency Contingency and Accident Management Plan.

On a national level, recognition of the requirement to have contingencies in place in order to redirect incoming feed to other internal or external facilities or ultimately suspend third party and intercompany deliveries are a crucial element to adherence to the requirements and compliance with this document.

REVIEW

Review of this document should be at least annually or after any SHEC reportable event. The review should be undertaken by the SHEC Advisory Team and local site management as appropriate.

RELATED DOCUMENTS / LEGAL REQUIREMENTS

INTERNAL

- Environmental and Health and Safety Risk Assessments – Fire Risk Assessments
- Emergency Contingency and Accident Management Plan
- Operating Techniques

EXTERNAL

- Regulatory Reform (Fire Safety) Order
- BS5306: Parts 3 and 8: Code of Practice For Selection and Installation of Portable Fire Extinguishers

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- Health and Safety At Work Act
- BS EN 3: Specification for Extinguishing Medium
- BS EN 5266: Code of Practice for the Emergency Lighting of Premises
- Site Environment Permit
- Environment Agency: Fire Prevention Plans

TRAINING

All applicable persons will be trained on this plan via means of a Tool Box Talk, which will be documented and reviewed as part of the internal audit process. Contractors will be made aware of the plan as relevant to their roles/ tasks being undertaken.

All applicable persons will be appropriately trained in respect of their roles and responsibilities.

SITE ACTIVITIES

The site activities are detailed in the Operating Techniques, but in summary consist of:

- Storage and treatment of ferrous and non-ferrous metals;
- Storage and treatment of general mixed scrap metal;
- Storage and treatment of Waste Electrical and Electronic Equipment (WEEE);

TYPES OF COMBUSTIBLE WASTES

Some waste types stored and treated will be considered to be combustible e.g.

- Scrap metals contaminated or mixed with other waste such as plastics
- De-polluted ELVs
- WEEE wastes (Note: SMW, ELF and computers and monitors are not accepted)
- Fragmentiser waste and residues
- Quarantined wastes e.g. gas cylinders (not covered by the guidance but considered in the plan)
- Quarantined wastes e.g. Tyres (found as non conforming items)

Fragmentised Ferrous and non-ferrous scrap (excluding residues) and clean and uncontaminated scrap metal and furnace ready scrap metal are not considered combustible for the purposes of this protocol.

A fire risk assessment will be undertaken and both environment and H&S risk assessments will take into consideration potential for risk of fire from activities.

SITE PLANS

Plan showing sensitive receptors within a 1km radius of the site is contained in Appendix 1a and 1b of this Plan.

Plan showing stockpile locations, access & egress, drainage etc. will be contained in the operating techniques and is provided in Appendix 2.

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Plan showing location of fire-fighting equipment, location of emergency assembly point etc. will be contained in the Emergency Contingency and Accident Management Plan and on the plan provided in Appendix 3.

POSSIBLE CAUSES OF FIRE

- Arson or Vandalism
- Plant and equipment faults
- Hot exhausts
- Electrical faults including damaged or exposed electrical cables
- Discarded smoking materials
- Hot works welding & flame cutting
- Ignition sources e.g. Industrial heaters
- Batteries in ELVs / Batteries (not applicable – see non-conforming wastes)
- Leaks and spillages of oils and fuels
- Build-up of loose combustible waste, dust and fluff
- Reactions between wastes
- Deposited hot loads
- Non-conforming wastes e.g. LPG tanks & sealed cylinders, petrol lawnmowers, batteries.
- Self-combustion (Frag waste)
- Dust
- Sparks from loading buckets
- External sources of ignition e.g. open burning / fires on neighbouring sites/ fireworks/ lanterns

MANAGE THE COMMON CAUSES OF FIRE

Security measures

Security measures will be in place to prevent unauthorised access and minimise risk of Arson/ Vandalism. This will include arrangements for outside of working hours.

The site is within a secure Port Area and this will prevent unauthorised access. Security measures will include adequate security fencing, CCTV and regular routine inspections of the site.

In normal circumstances the site is manned from 06:00 – 22:00 Monday to Friday. Outside of operational hours, visual inspections by Port Police will take place. The Port Police will patrol the site and the patrol will include a visual inspection including looking for intruders and fires.

Plant & Equipment

Only specialist plant and equipment widely used in the waste industry will be used to handle wastes (for example JCB/ Still FLT, CAT, JCB, Komatsu loading shovels, Sennebogen, Liebherr or Terex MSH). Fixed plant and machinery used to process the waste will be designed specifically for the purpose and constructed to minimise the risk of fire.

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The shredder will be designed and configured so that heat generated during the shredding process can be released allowing outputs to cool before reaching stockpile storage.

Pre Shredder

There will be a fire suppression system within the feed inbox. This is a manual system operated remotely in the event of a fire by the MSH operator during operation.

There will be a fire suppression system on the machine output aka 'mouth'. This will consist of a spray bar which will be a manual system that is operated remotely during operation.

A fire alarm system will be fitted within the pre shredder building which operates a hydraulic interlock which will stop the flow of hydraulic oil in the event of a fire.

There will be the following types of water system on the shredder:

- An automatic Smart Water System which will manage supply water to the Shredder Mill for continual use when the shredder is operational. The smart water system consists of atomised water with flow control. The flow control is proportional to the shredder motor operation i.e. – the amount of energy being used by the shredder. In the event of a fire, a manual fire button is pressed and the water automatically flows at 100% volume.
- A separate network of strategically placed pipework will supply water to the shredder mill and output conveyor in event of a fire. This is activated by the manual fire button located in the shredder operator control cabin.

Shredder Downstream

- A network of strategically placed pipework will supply water to the shredder downstream and output conveyors in event of a fire. This is activated by the manual fire button located in the shredder operator control cabin.
- Fire fighting equipment will be available in all buildings.

Fire alarms will be fitted in all buildings.

Waste Bays

- An automatic sprinkler system will be located on shredder waste bays 1, 2 and 3 which will be activated by heat. Bays 4 and 5 will not store combustible material.
- Bays will consist of a 1.5m concrete base panel cladded with steel to prevent deterioration/ damage, topped with steel and a subsequent insulated composite panel fire rated to 120 minutes.

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BAY NUMBER	SIZE (meters)	MATERIAL
1	10.6W x 12.4D x 5H	LIGHT RESIDUE
2	19.1W x 16.9D x 5H	HEAVY RESIDUE
3	6.6W x 12.4D x 5H	FINES <6
4	4.6W x 8.5D x 4.5H	IRONY ALUMINIUM
5	4.6W x 8.5D x 4.5H	ARMATURES BAY

The shredder and downstream will be maintained on a regular basis by Sims Employees which will include a qualified engineer, qualified electrician and other suitably qualified employees. Pre-inspection checks will be carried out daily when the plant is in use. In addition, regular maintenance will be undertaken routinely, the schedule of maintenance will be determined by type and volume of material treated.

Housekeeping and cleaning activities will be carried out daily by trained employees for 1 hour post production / at the end of every shift. During this housekeeping process a thorough fire watch will be carried out. The housekeeping / cleaning will include removal of loose dust fluff from shredder and downstream equipment. In addition to the daily routine housekeeping, a weekly cleaning rota will be in place to thoroughly clean specific areas in rotation.

All employees who operate mobile plant will be suitably trained as outlined in SMM UK_Policy 8_Mobile Plant. Refresher training will be undertaken routinely as outlined in the policy. Records will be kept.

There will be a programme of routine inspection and maintenance for static and mobile plant and machinery. All plant and equipment will be inspected before use using the daily plant pre-inspection check sheet as detailed in SMM UK Policy 8_Mobile Plant. This will include inspecting plant for any leaks that could spill combustible fuel or oil during operation. All mobile plant and equipment will be subject to scheduled routine maintenance in accordance with manufacturer's guidelines. Any defects will be reported, repaired and records kept. This will prevent faults that could cause fire and prevent leaks and spills of combustible fuel and oil. Sims employees will be trained to respond to spills as detailed in SMM UK Policy 16_Emergency Contingency and Accident Management. Spill response procedures will be tested twice per year using spill drills as detailed in the policy. Spill kits will be available at strategic locations and all spills will be responded to. This will prevent spilled combustible fuel or oil trailing or being tracked around site.

Mobile plant that is not being used will be parked away from combustible waste, in locations shown on plan in appendix 2.

All plant will be fitted with fire extinguishers. Fire extinguishers will be available at strategic locations by static plant and machinery.

Mobile and static plant and equipment will be subject to routine cleaning to prevent accumulation of debris that could settle on the equipment. Visual inspections will be carried out at regular intervals during the working day and plant operators will regularly inspect their plant to detect the potential for

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fire caused by dust settling on hot exhausts and engine parts. This will take place at regular intervals throughout operations (a minimum of twice per day) and at the end of the operators shift. Daily routine visual inspections of the site will include a fire watch at least twice per day and at the end of the day and records will be made in the site diary/ production sheet.

Electrical systems will be certified by a qualified electrician and there will be procedures in place that set out the regular maintenance.

Hot works

SMM UK Policy 23 will control Hotwork activity on site. All relevant employees will be suitably trained in respect of the Hotwork policy. A Point of Work Risk Assessment (POWRA) and permit to work system will be in place for hot works such as welding and cutting. Hotwork will be carried out in a designated safe area at least 15m away from combustible stockpiles and with sufficient fire-fighting equipment available. Note: This separation is more than adequate to meet EA guidelines that require a minimum of 6m separation between ignition sources and combustible wastes. This Policy will require a fire watch by a nominated employee for a suitable period after hot works have ended.

Any welding required in operational areas will be subject to additional controls e.g. cordoning off area, cleaning to remove combustible materials and damping down if required.

Industrial heaters are in use on site to heat areas where employees are working, when the plant is in operation. These will be turned off when areas are unmanned. Procedures will be in place that set out the use and regular maintenance of industrial heaters.

General Provisions

A no smoking policy will be in place in operational areas and designated smoking areas will be located a safe distance from combustible wastes to prevent accidental ignition.

Employees and contractors will be inducted and monitored to ensure they follow safe working practices and are aware of the fire prevention and emergency contingency and accident plan.

Key employees will be trained in the use of firefighting equipment. Regular fire drills will be undertaken to test the effectiveness of the emergency responses.

Sources of ignition will be kept 6 metres away from combustible and flammable waste.

The site does not receive End of Life Vehicles. Any batteries found as non conforming items will be removed without delay and will be stored in a leak proof acid resistant battery box in the quarantine area.

Procedures will be in place to ensure fuels, oils and combustible liquids are appropriately stored to prevent leaks and spills. Storage will be at least 6m away from stockpiles of combustible wastes.

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Sims employees will be trained to respond to spills as detailed in SMM UK Policy 16_Emergency Contingency and Accident Management. Twice per year, the spill response procedures will be tested using spill drills as detailed in the policy, to test the effectiveness of the emergency responses. Spill kits will be available at strategic locations and all spills will be responded to. This will prevent spilled combustible fuel or oil trailing or being tracked around site.

Inspections will take place daily and housekeeping will be undertaken regularly to prevent the build-up of loose combustible waste, dust and fluff on plant, equipment and site.

Combustible wastes will be stored with a separation distance of 6m between waste piles, buildings, or other combustible or flammable materials and 6m from the site perimeter.

Quarantine Items stored in skips or containers will be accessible so any fire that should occur inside it can be put out. Where wastes are stored in skips, access will be available from at least 2 sides or equipment will be available to move the skips should a fire occur.

The one way transport system will be designed to ensure ease of access for articulated vehicles. Internal roadways will be maintained to enable fire access at a minimum of 4m width. There are no weight or height restrictions on site transport routes or on the immediate access roads in the vicinity of the site that would restrict access for Fire Rescue Service appliances.

Waste Acceptance

All relevant employees will be appropriately trained in respect of waste acceptance procedures and to identify non-conforming wastes. Records of training will be kept.

Written waste acceptance procedures will be in place to prevent non-conforming wastes as detailed in "Sims Group UK Limited Shredder Site Waste Acceptance Procedure"

Pre-acceptance procedures will be in place to prevent acceptance of unsuitable wastes and ensure their suitability for the treatment process. In summary, this will consist of checks undertaken by Commercial/ Site Management and will include information on the composition of the waste, the process giving rise to the waste, the likely quantities and any hazards that may be associated with the waste. These checks will be carried out before a decision is made to accept the waste.

Every load will be inspected for the presence of non-conforming items and as detailed in the Operating Techniques and Sims Group UK Limited Shredder Site Waste Acceptance Procedure Waste Acceptance Procedures. Non-conforming items found will be rejected or quarantined as appropriate. Suppliers will be informed of the ferrous and non-ferrous waste acceptance criteria and the main material types prohibited will be displayed at the site entrance. This procedure will prevent any non-conforming wastes that could be incompatible or unstable wastes causing a reaction. Waste acceptance will also involve inspecting the load for any signs of fire or hot waste. Please see hot load quarantine details below.

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The waste types that will be accepted on site (solid scrap metal, depolluted ELV, non hazardous WEEE) are neither incompatible with each other nor unstable and therefore there will not be reactions between these wastes.

Quarantine Area

There will be three types of quarantine area on site: Hot load quarantine area, Temporary quarantine area and quarantine area.

An area on site will be maintained as a hot load quarantine area. E.g. somewhere a suspected hot load could be deposited or where unburnt wastes could be moved to isolate and prevent them catching fire.

The area will be within the site boundary, will be capable of holding 50% of the largest stockpile of waste (500 tonnes of scrap metal), and will be shown on the site plan in appendix 2. A 6m separation distance will be maintained around the hot load quarantine area. Due to the nature of operations, this quarantine area may occasionally need to be flexible in terms of location. If there are any temporary changes to the location of the quarantine area, this will be communicated to all employees during the morning meeting and documented in the minutes. Any changes will meet the same criteria as detailed above re separation distances/ capacity etc.

The hot load quarantine area or other designated area as detailed above will available at all times, should it be required.

Separate quarantine areas will be available for wastes pending further inspection (Temporary quarantine) and for smaller non-conforming items (quarantine area) These are also shown on plan in appendix 2.

In the event that a suspected hot load arrives on site, this will be taken to the hot load quarantine area for further inspection / action as required.

In the event of fire on the site, the planned use of the hot load quarantine area in this scenario will be to segregate any unaffected material with a grab / shunters so the fire-affected material can be grabbed from the pile and spread out and extinguished.

Stockpile Management

The planning of site production will be the cornerstone for ensuring that stockpiles meet the requirements of this plan in terms of quantity and storage times. Daily site inspections and at least monthly stock- takes will form the process for this assessment/ review.

Sims will have access to adequate resources to facilitate the regular turnaround of combustible wastes on site to ensure storage times will be kept to a minimum and maximum storage times (3 months) and stockpile limits will be adhered to.

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The site is a 'Shredder site and Dock Facility', the purpose of which is to treat wastes from Sims feeder yards and other suppliers and dispatch for recovery. As a result, wastes will not be stored for prolonged periods and turnaround will be regular.

Under normal circumstances, the shredder will operate daily (Monday to Friday). Shredder infeed will typically be treated daily and stockpiles of infeed will be stored for 24 hours.

Stocks of combustible wastes such as Fragmentiser wastes will be regularly removed. There will be daily movements of wastes from these stockpiles and wastes will generally be stored for around 1 week: far less than the 3 – 6 months limit advised by guidance. Wastes stored within bays will be removed on a daily basis when stocks are available and will not be stored for prolonged periods and turnaround will be regular. The plan will be to zero stocks each month.

Sims Site Management team will visually manage the waste stockpiles on a daily basis and contact Sims Central Planning to arrange for collection of wastes in advance of approaching the maximum stockpile limits. The stock capacity will be monitored by daily site inspections and monthly stock checks. Removal of the wastes will be organised by the Central Planning Team, who will arrange for transport using either Sims own fleet or other suitably authorised registered waste carriers. The proactive approach to management of logistics between Site Management and Central Planning Team will ensure typical operations are maintained and maximum stockpile sizes and storage times are not exceeded.

Sims has a network of other scrap metal yards, for example nearby are Avonmouth Reclamation, Bristol, Taunton, Plymouth, Cinderford, and Newport (which is a similar size to the Avonmouth site). Sims also has several sites in Smethwick (including a shredder facility) strategically located in proximity to the M5, to which wastes will be diverted in event of extenuating circumstances. For example, if stockpile limits were reached (e.g. if receiving facilities were unable to accept the wastes or there was a significant failure in logistics) or in the event of an emergency and the site had to cease waste acceptance.

Manage Stockpile Size

EA guidelines as detailed below for combustible wastes are detailed below.

4 m and stockpile dimensions 20m * 20m for combustible wastes detailed below. Combustible waste type	EA guide	Other notes
WEEE containing plastics, including fridges, computers and televisions	450 cubic metres	
Tyres and rubber	450 cubic metres	50 tonnes
Metals other than WEEE (including crushed ELVs, which are classed as 'baled' waste for the purpose of this table.	750 cubic metres (450 cubic metres baled)	
Fragmentiser fluff	450 cubic metres	

Unless otherwise specified in the table below, stockpiles will be stored in accordance with the guidelines in the table above.

Hazardous / combustible wastes e.g. SMW, Undepolluted ELV, Lead Acid Batteries, but also combustible non hazardous wastes e.g. Tyres are not accepted or treated on site. If found, these wastes will be treated as non-conforming items and will therefore be stored in their largest form prior to removal to suitably authorised facility.

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Manage Stockpile Size / Tonnage

Tonnage restrictions for the site may change depending on the particular materials stockpiled and yard conditions at the time. However, these will be dependent on checks being in place to ensure safety at all times.

The maximum quantities of wastes stored onsite at any one time and maximum stockpile sizes will be:

Waste type	Max quantity on site	Max quantity in any one stockpile **	Stockpile dimension/ conditions***	Duration
Shredder infeed will contain a proportion of wastes considered combustible e.g. depolluted / baled ELV	Typically this will not exceed 2,000 tonnes. 3,000 tonnes in extenuating circumstances e.g. breakdown.	1000 tonnes	30m*30m*6m approx.	Typically will be processed daily / 24 hours. This is far lower than EA guidance 3 months
Fragmentiser Residues	1000 tonnes	500 tonnes	Bay size a maximum of 19.1W x 16.9D x 5H (meters)	Daily movements, stock rotation, maximum duration 1 week. Will not exceed 3 months
Fragmentiser Waste	1000 tonnes	500 tonnes	Bay size a maximum of 19.1W x 16.9D x 5H (meters)	Daily movements, stock rotation, maximum duration 1 week. Will not exceed 3 months.
Quarantine - Tyres	10 tonnes onsite at any one time, stored in stable stacks or a skip	5 tonnes	50m ³ approx.	Typically 1 months will not exceed 3 months
Temporary Quarantine (wastes pending further inspection)	100 tonnes	100 tonnes	10m*12m*2m approx.	1 week
Quarantined waste/ orphaned gas cylinders	5 tonnes (no more than 2 tonnes gas cylinders in cages)	1 tonnes cylinders 4 tonnes other quarantine	3m*10*2.5m approx.	Will not exceed 6 months
Non-ferrous – clean and uncontaminated NF not considered combustible for purposes of this plan	1000 tonnes	300 tonnes	N/A	Typically 1 month will not exceed 6 months
Processed Fragmentised ferrous clean and uncontaminated/ furnace ready scrap - not considered combustible for purposes of this plan	55,000	55,000 stored at radial stacker	N/A	Processed frag will be routinely moved from the stacker to the dock ferrous storage area (see below).
Cut grade Dock Ferrous storage clean and uncontaminated furnace ready scrap not considered combustible	55,000	55,000	N/A	Generally exported via ship within 3 months

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for the purposes of this plan*				
	<p>* Stockpiles will be restricted to a maximum height of 13 metres and to be retained between the crane rails, whilst there is no weight restriction Frag is to be stored on the Piled Slab where possible with the peak of the stockpile located off of the hollow wall structure. The maximum tonnages of fragmentised ferrous and cut grade dock ferrous would not be stored at the same time.</p> <p>5m clear access will be left alongside the back rail within the dock Area.</p>			

The above dimensions exceed the EA guidance, but this is justified on grounds that the three key objectives can still be met. The environment management system will minimise the likelihood of a fire occurring through robust waste acceptance and inspection to minimise risk of non-conforming wastes, through controlling of potential ignition sources, through inspection and management of stockpiles storage duration will be far lower than the 3 months specified in the guidance (please see 'manage stockpile durations' below for more details).

In addition, firebreaks and emergency preparedness and response equipment and procedures will minimise the spread of the fire within the site and to neighbouring sites and fire stockpiles will be manageable by resources on site so that, should a fire break out, it could be extinguished within 4 hours.

Manage stockpile durations and storage times

To reduce the risk, it is proposed that all combustible materials will be stored on site for no longer than the maximum suggested duration specified in the EA's Fire Prevention Plan Guidance; 6 months. EA guidance advises that storing combustible wastes for longer than 6 months could increase the likelihood of a fire. EA guidance also advises if storing combustible wastes in the maximum pile sizes for longer than 3 months, extra measures must be demonstrated to prevent self-combustion.

Sims Avonmouth will store combustible wastes for generally between 24 hours and 1 week. At this frequency of turnaround, the risk will be greatly reduced.

Fragmentiser waste can generate heat under certain conditions. Self-combustion will be prevented by managing storage times at well below the <3 months specified in the guidance. There will be daily movements of wastes from these stockpiles and maximum stockpile times will be limited to 1 week to reduce the risk of self-combustion. Daily movements of frag waste will take place. Storage times will be minimised by stock rotation and will not exceed a week. Wastes stored within bays will be removed on a daily basis when stocks are available and will not be stored for prolonged periods and turnaround will be regular. The plan will be to zero stocks each month.

Typically fragmentiser infeed will be processed daily and where possible, shredder infeed will be processed within 24 hours of receipt (except in exceptional circumstances such as breakdown). Wastes will not be stored for greater than the 1 month maximum even in extenuating circumstances.

These durations are far lower than the three months recommended by EA Guidance and at this frequency of turnaround, the risk will be greatly reduced.

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FIRE PRECAUTIONS

Detecting Fires

The detection systems on site are mainly visual. This is appropriate to the nature and scale of the waste management operations. During operational hours, the site management team will visually monitor stockpiles and plant and machinery. Each waste bay will be fitted with a CCTV which will be monitored by site employees during operational hours. All shredder waste and residue bays are located within one location, this location will be manned for the majority of operational hours.

Outside of operational hours, the site will be subject to patrols by Port Police.

The site will be manned by Sims Employees from 06:00 – 22:00 hours Monday to Friday and it is the aim of site management team to have minimal stockpiles left on site at weekends. The site will be manned 24 hours per day during ship loading/ unloading activities. Port Police will undertake visual inspection of the site periodically during their routine patrols in evenings and over the weekend. These visual inspections will include accessing Sims Site and inspecting for signs of fire.

Fragmentiser infeed and Fragmentiser waste - Visual inspections will take place frequently and at least twice daily, during operation and at the end of the day. Employees are assigned specific responsibility to monitor the infeed area and waste loading area during operational hours.

An automatic sprinkler system will be installed on shredder waste bays 1, 2 and 3. The sprinkler system is activated by heat. Bays 4 and 5 will not store combustible material.

Procedures will be in place during and following hot works to monitor and detect the outbreak of fire.

A fire watch will take place as part of daily routine visual inspections of the site at least twice per day and at the end of the day.

During the fire watch, the stockpiles, plant, and equipment will be thoroughly inspected for signs of fire or potential causes of fire. On mobile plant, this will include checking for accumulations of debris on areas of the equipment that will get hot during operation. In stockpiles, it will be undertaking inspections for signs of fire and for non-conforming items that could be sources of ignition. Records of inspections will be kept in the Site Diary records.

In addition to undertaking routine fire watch, every load will be inspected in accordance with waste acceptance procedures where a thorough visual inspection will be made at point of receipt, during any handling/ stockpiling activity and again when loading. Employees will be trained to be vigilant for non-conforming items.

Outside of operational hours, Port Police will visually monitor the site. Inspection of fragmentiser infeed & fragmentiser waste stockpile during night will be undertaken by Port Police.

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As detailed above, procedures will be in place during and following hot works to monitor and detect the outbreak of fire.

In addition to the above, all employees will be trained in Emergency Procedures and to be continuously vigilant for any signs of fire. This will extend to site security where responsibility is allocated.

Prevent Self-combustion

EA guidance states, "Many wastes can self-combust under certain conditions. Self-combustion happens when a material which can self-heat generates heat at a faster rate than it can be lost to the environment. The temperature continues to rise in the material speeding up the rate of reaction and releasing even more heat. Eventually the material reaches auto-ignition and the material then self-combusts. You can prevent self-combustion by carefully managing storage times, pile volumes and height, and the temperature of the wastes."

The vast majority of combustible scrap metal stored on site (e.g. shredder infeed) will not self-heat / will not self-combust as detailed above.

Combustible waste storage times will be kept to a minimum (typically around 24 hours rather than the 3 – 6 months detailed in guidance). Infeed stocks will be treated daily. Regular visual monitoring of the wastes will take place, negating the need for any physical temperature measurements to be taken.

The physical structure of the stockpiles (large metal pieces of varying shapes) will mean that monitoring with temperature probes will not be practicable and other technology will not be warranted given the level of risk of self-combustion will be negligible.

Fragmentiser waste can generate heat under certain conditions. Self-combustion will be prevented by stock rotation and managing storage times.

The shredder system is configured to allow heat generated during treatment to be released before the fragmentiser waste is deposited into bays for storage. There will be daily movements of wastes from these bays and maximum stockpile times will be limited to 1 week. With daily movements and 1 week turnaround, the stockpile durations will be well below the <3 months specified in the guidance and this will prevent the risk of self-combustion.

The bay is regularly emptied entirely which ensures stocks are not kept for longer than the 1 week specified above.

Fire-fighting techniques / Suppression systems

Management practices as detailed above will ensure stockpiles of potentially combustible wastes will be kept low and regularly removed from site. Maximum storage times of potentially combustible wastes (24 hours to 1 week) will be far shorter than the 3 – 6 months recommended by EA guidance.

Management practices as detailed above will ensure that the common causes of fire will be managed and the risk /likelihood of a fire will be minimised.

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Potentially combustible wastes will be regularly monitored both during and outside operational hours for signs of fire.

Potentially combustible waste types will be stored in external stockpiles with firebreaks and access will be maintained for emergency vehicles meaning that there would be no potential restrictions/ limiting access factors, which would prevent a fire being tackled effectively.

If a fire were to occur, its spread would be minimised by effective emergency response as detailed in the Emergency Contingency and Accident Management Plan and the provision of fire breaks.

The size of the stockpiles will be minimised and will ensure any fire could be extinguished quickly and within 4 hours.

The site will not handle lead acid batteries, but any found as non conforming items will be stored upright in leak proof, acid resistant dedicated battery boxes within the quarantine area. The storage methods will ensure the risk of short circuit/ fire is minimised. The quantity stored will be very low. The area will be regularly inspected.

Overall, the risk will therefore be low and the use of automated detection / suppression systems will not be proportionate to the nature and scale of the risk.

Resources will be available to fight a fire including plant and trained operatives to move waste e.g. separating unburned material from fire, separating burning material from the fire so it can be quenched with IBC water / Extinguishers or hoses in the event that Fire Rescue Service are in attendance.

Sims employees will be trained to respond to fires as detailed in SMM UK Policy 16_Emergency Contingency and Accident Management. Sims employees will be trained in the Fire Prevention Plan. Records of training will be available. This will extend to site security where responsibility is allocated.

In case of a fire, breaking out the Emergency Controller (or deputy) will be alerted immediately and the onsite fire-fighting equipment will be employed. The Emergency Contingency and Accident Management Plan will be initiated.

Fire-fighting equipment will be located at strategic locations near to areas of combustible waste storage to aid rapid response to suppress a fire. Fire-fighting equipment consists of:

- Portable extinguishers in each item of plant and at various locations throughout the site.

Pre Shredder

- There will be a fire suppression system within the feed inbox. This is a manual system operated remotely in the event of a fire by the MSH operator during operation.
- There will be a fire suppression system on the machine output aka 'mouth'. This will consist of a spray bar which will be a manual system that is operated remotely during operation.

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Shredder:

- Quench tank for extinguishing vehicles/ bales.
- 1 x 1,000 litre mobile bowser linked to a petrol powered pump suitable for extinguishing small fires.
- 3 x Standpipe connection to mains supply points at the infeed area.
- 'Fire hydrant store' adjacent to shredder, housing fire hydrant and supply of hoses.
- 1 x Standpipe connection at site entrance.
- 3 x Standpipe connections at the south east boundary (adjacent to downstream) as per BS750 type 2 standard.
- An automatic Smart Water System which will manage supply water to the Shredder Mill for continual use when the shredder is operational. The smart water system consists of atomised water with flow control. The flow control is proportional to the shredder motor operation i.e. – the amount of energy being used by the shredder. In the event of a fire, a manual fire button is pressed and the water automatically flows at 100% volume.
- A separate network of strategically placed pipework will supply water to the shredder mill and output conveyor in event of a fire. This is activated by the manual fire button located in the shredder operator control cabin.

Shredder Downstream

- A network of strategically placed pipework will supply water to the shredder downstream and output conveyors in event of a fire. This is activated by the manual fire button located in the shredder operator control cabin.
- Fire fighting equipment will be available in all buildings.

Waste Bays

- An automatic sprinkler system will be located on shredder waste bays 1, 2 and 3 which will be activated by heat. Bays 4 and 5 will not store combustible material.

Q Berth Dock Area:

- Standpipe connections at 20m intervals along the quay, plus the above mentioned mobile bowser.
- 3 standpipe connections adjacent to the logistics area as per BS750 type 2 standard.

There will be access to mains water supply for fire-fighting. Discussions have taken place with Fire Rescue Service. There will also be access to the dock for utilisation of dock water by the fire service if necessary.

Resources will be available to fight a fire including plant and trained operatives to move waste e.g. separating unburned material from fire, separating burning material from the fire so it can be quenched with hoses. Site will contact Bristol Port Company on a quarterly basis to ensure that water pressure at hydrants is maintained at a sufficient level.

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In case of a fire breaking out the Emergency Controller (or deputy) will be alerted immediately and the onsite fire-fighting equipment will be employed. The Emergency Contingency and Accident Management Plan will be initiated.

The Fire Rescue Service will be called when deemed necessary by the Emergency Controller. In worst case scenario, if a fire was to occur that could not be tackled quickly and safely using on site resources then the fire rescue service would be called. The Avon Fire and Rescue Service are located nearby on St Andrews Road and Nova Way in Avonmouth.

Provision of water supply for fire fighting

EA guidance advises a water supply of at least 2000 litres a minute (2000 l/min = approx. 34 l/s).

There will be access to mains water supply for fire-fighting. There will also be access to the dock for utilisation of dock water by the fire service if necessary. Discussions have taken place with Fire Rescue Service and the Bristol Port Company. Site will contact Bristol Port Company on a quarterly basis to ensure that water pressure at hydrants is maintained at a sufficient level.

Water will be sourced from fire hydrants / fire engines/ the dock water to meet these requirements. The fire hydrants are marked on the plans provided in appendix 3. The site is at a dock facility and the dock water will provide a water supply to meet any deficit.

All relevant, key contact details for both internal and external communications will be detailed within the Emergency Contingency and Accident Management Plan. This Fire Prevention Plan and the Emergency Contingency and Accident Management Plan will be held onsite (emergency grab bag) and is easily retrievable by both site employees and the Fire and Rescue Service.

Contingency during a fire

A contingency will be in place to divert incoming wastes during a fire. Site management will contact senior management/ commercial teams and central planning to redirect incoming loads to other internal or external facilities as necessary e.g. Newport/Smethwick/ Avonmouth Reclamation/ Bristol etc. Sims has a large network of other facilities that could also receive wastes in the event of an emergency.

Sensitive receptors

Sensitive receptors are shown on the plans in appendix 1.

Sensitive Human receptors on plan in appendix 1a and sensitive ecological receptors on the plan in appendix 1b.

There are no sensitive receptors immediately neighbouring the boundary of the site. There are no schools/ hospitals etc. within 1km of the site.

There are some residential areas within 250m of the site and the advice of the FRS will be sought in respect of communicating with the public in the event of an incident. It is noted these receptors are

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upwind of the site and the risk of them being impacted in the event of a fire is therefore minimal under normal meteorological conditions.

Managing Fire Water

Impermeable pavement and sealed drainage systems will minimise the risk of pollution from firewater into the ground.

Firewater will be contained on site within the drainage system / interceptor or on the site surface, as far as is reasonably practicable or discharged to sewer with the consent of the relevant authorities.

If firefighting water has entered, or has the potential to enter, the Port Authority sewerage system during an incident, the Port Authority will be contacted on 01179 820000. The Port Authority's contact number will also be included in the Emergency Contingency and Accident Management Plan.

After the fire has been extinguished, there may be accumulated water stored on site / in the drainage system, that requires disposal. This water will be removed from site by tanker to suitably authorised facility or discharged to sewer with the permission of the Port Authority.

After a fire

It may remain necessary to continue to divert waste to alternative sites whilst the immediate after fire inspections and any necessary repairs are effected. This will take place as per contingency during a fire.

After a fire, firstly there will be continued visual monitoring of the aftermath to ensure the fire has been completely extinguished.

Any residues from the fire will be recovered/ disposed of to suitably authorised facilities as appropriate.

The infrastructure and drainage will be inspected. As detailed above, it may be necessary to empty the interceptor and clear the drainage system of any accumulated firewater or debris. The concrete surface will be inspected for signs of fire damage that could affect the integrity and repairs undertaken if the integrity has been compromised and before the area is returned to active waste storage/ treatment.

Key infrastructure such as electrics/ telecommunications/CCTV etc. will be checked to ensure they are functioning.

A full investigation will take place including route cause, corrective actions to prevent reoccurrence, effectiveness of response. Stockpile Management and Fire Prevention Protocol and Emergency Contingency and Accident Management Plans will be reviewed and updated accordingly where required.

Any fire-fighting resources or pollution prevention equipment that has been consumed will be replaced without delay.

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Compliance with the plan

The FPP will be communicated to employees by means of a TBT and compliance with the plan will be monitored visually on a daily basis during routine inspections. Safety Conversations will be used to monitor employees understanding of the requirements.

Regular exercises on site to test the effectiveness of fire response will be tested twice per year (as detailed in Emergency Contingency Plan) by drills and will be documented in SMM Policy 16 folder.

- Q1. Are permits to work available for all contractors on site?
- Q2. Are the tonnage restrictions being followed?
- Q3. Are adequate roadways and firebreaks being maintained?
- Q4. Is the fire-fighting equipment available?
- Q5. Is there a designated quarantine area available?
- Q6. Are sources of ignition being controlled?

OTHER STOCKPILE MANAGEMENT CONSIDERATIONS

Reducing Falling Objects & preventing slips, trips and falls

Care will be taken to ensure that scrap is stacked in a safe manner and there are no signs of stockpiles being unstable. Vehicles will not tip directly onto scrap stockpiles

Flattened/baled cars or other baled waste will be picked and placed at the base of stockpiles. Bales will not be used as support or separation walls.

Vehicles will not tip directly onto stockpiles. Lorry Drivers will be instructed to tip a minimum of one car length away from the edge of stockpiles.

Oversized O/S material will be inspected regularly to ensure items do not overhang or are unstable. If stability cannot be ensured, then physical means such as barriers will be used as a temporary measure to provide a safe distance for pedestrians.

Only pedestrians authorised by the weighbridge to tip/ unload will be allowed access to the stockpile areas. Pedestrians (inspectors and customers) must keep a minimum distance of at least an average car length away from the edge of the stockpile.

All pedestrians/ Customers will be controlled and as required escorted by site staff at all times while on site. Trained operatives will ensure tipping, loading and maintenance activities where customers/contractors are involved do comply with the relevant safe procedures as per company policy/risk assessments and Safe Working Procedures in place.

Pedestrians will keep to designated walkways where available and good housekeeping will be maintained to minimise the risk of slips, trips and falls.

To allow site management to comply with controls and prove reasonable monitoring is taking place, the following key questions will be asked regularly:

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- Q7. Are bales/ flattened cars stored at the base of piles?
- Q8. Are there any obvious overhangs or stability issues?
- Q9. Are all visitors accompanied on site?
- Q10. Are employees using designated walkways?
- Q11. Are lorry drivers tipping a minimum of a car length away from stockpile edges?
- Q12. Are the edges of stockpiles routinely pushed up to minimise trips and slips?

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SMM UK Stockpile Management and Fire Prevention Protocol Avonmouth Shredder
Appendix 1a Sensitive Human Receptors within 1km radius

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Appendix 1b Sensitive Ecological Receptors within 1km radius

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SMM UK Stockpile Management and Fire Prevention Protocol Avonmouth Shredder
Appendix 2 Avonmouth Shredder Site Layout

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Appendix 3 Avonmouth Emergency Equipment plans

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